

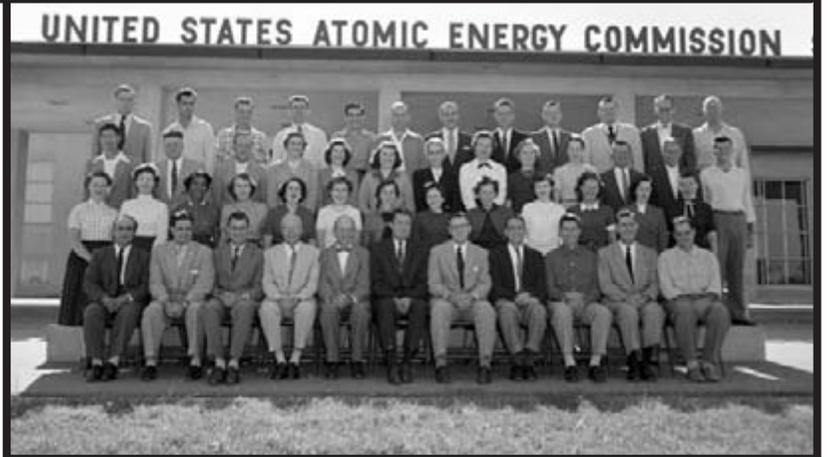


SAVANNAH RIVER SITE COLD WAR  
HISTORIC PROPERTY DOCUMENTATION

# 700/A AREA

## SITE ADMINISTRATION, SAFETY, SECURITY, AND SUPPORT

Aiken County, South Carolina



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NARRATIVE AND PHOTOGRAPHY

# 700/A AREA – SITE ADMINISTRATION, SAFETY, SECURITY, AND SUPPORT

Aiken County, South Carolina

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# ABSTRACT

This documentation was prepared in accordance with a Memorandum of Agreement (MOA) signed by the Department of Energy–Savannah River (DOE-SR) and the South Carolina Historic Preservation Office (SHPO) dated February 17, 2004, as well as the Consolidated MOA of August 2004. The MOA stipulated that a thematic study and photographic documentation be undertaken on A Area historic properties 703-A and 708-A. In addition, a Cultural Resource Management Plan was accepted and signed by DOE-SR and the SHPO on December 9, 2004 calling for documentation of the remainder of the A Area buildings that were deemed eligible for listing in the National Register of Historic Places (NRHP) as contributing resources to a Savannah River Site (SRS) Cold War Historic District. The impetus for the study was the imminent decommissioning and/or dismantling of the majority of NRHP eligible buildings in A Area. The resulting narrative is based on field analysis, oral history, primary documentation and research. New South Associates prepared the narrative and Westinghouse Savannah River Company (WSRC) completed the photographic documentation.

# ACKNOWLEDGEMENTS

Heartfelt thanks go out to the Savannah River Plant employees, past and present, who were willing to share their memories and provide oral histories, which were integral in telling this story: Shepherd Archie, Faye Baker, Curtis Boseman, Laura Cameron, Harold Harmon, Dell Harvey, Don Law, Mal McKibben, William Mottel, Nathaniel Stetson, and Raine Weimortz. Because of the multi-functional nature of A-Area, job tasks were extremely diverse and each of these persons provided a unique and interesting perspective.

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# ACRONYM LIST

ACHP	ADVISORY COUNCIL ON HISTORIC PRESERVATION
AMCP	ASSISTANT MANAGER FOR CLOSURE PROJECTS
AM&F	AMERICAN MACHINE AND FOUNDRY
AEC	ATOMIC ENERGY COMMISSION
AEC SROO	ATOMIC ENERGY COMMISSION SAVANNAH RIVER OPERATIONS OFFICE
AED	ATOMIC ENERGY DIVISION – DU PONT COMPANY
AOE	ASSESSMENT OF EFFECT
CAB	SAVANNAH RIVER SITE CITIZEN’S ADVISORY BOARD
CERCLA	COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT
CFR	CODE OF FEDERAL REGULATIONS
CNTA	CITIZENS FOR NUCLEAR TECHNOLOGY AWARENESS
COE	U. S. ARMY CORPS OF ENGINEERS
CRM	CULTURAL RESOURCE MANAGEMENT
CRMP	CULTURAL RESOURCE MANAGEMENT PLAN
CSRA	CENTRAL SAVANNAH RIVER AREA
DECP	DECOMMISSIONING PROJECT (DOE-SR)
D&D	DEACTIVATION AND DECOMMISSIONING
DOD	DEPARTMENT OF DEFENSE
DOE	U. S. DEPARTMENT OF ENERGY
DOE	DETERMINATION OF ELIGIBILITY
DOE FPO	U. S. DEPARTMENT OF ENERGY FEDERAL PRESERVATION OFFICER
DOE-SR	U. S. DEPARTMENT OF ENERGY SAVANNAH RIVER
DWPF	DEFENSE WASTE PROCESSING FACILITY
ECS	EMERGENCY COOLING SYSTEMS
EM	ENVIRONMENTAL MANAGEMENT
EOC	EMERGENCY OPERATIONS CENTER – SRS
EPA	U. S. ENVIRONMENTAL PROTECTION AGENCY
ERDA	ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION
FFA	FEDERAL FACILITIES AGREEMENT
FRA	FEDERAL RECORDS ACT
GS	GIRDLER SYSTEM
HABS	HISTORIC AMERICAN BUILDINGS SURVEY
HAER	HISTORIC AMERICAN ENGINEERING RECORD
HWCTR	HEAVY WATER COMPONENTS TEST REACTOR
INL	IDAHO NATIONAL LABORATORY
IRM	INFORMATION RESOURCE MANAGEMENT DEPARTMENT - SRS
JCAE	JOINT COMMITTEE ON ATOMIC ENERGY
LANL	LOS ALAMOS NATIONAL LABORATORY
LTBT	LIMITED TEST BAN TREATY
LTR	LATTICE TEST REACTOR
MED	MANHATTAN ENGINEERING DISTRICT
MOA	MEMORANDUM OF AGREEMENT
MPPF	MULTI-PURPOSE PROCESSING FACILITY
NARA	NATIONAL ARCHIVES RECORDS ADMINISTRATION
NASA	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

NEPA	NATIONAL ENVIRONMENTAL POLICY ACT
NHL	NATIONAL HISTORIC LANDMARK
NHPA	NATIONAL HISTORIC PRESERVATION ACT
NNSA	U. S. DEPARTMENT OF ENERGY NATIONAL NUCLEAR SECURITY ADMINISTRATION
NPS	NATIONAL PARK SERVICE
NPT	NON-PROLIFERATION TREATY
NRC	NUCLEAR REGULATORY COMMISSION
NRHP	NATIONAL REGISTER OF HISTORIC PLACES
NTG	NEUTRON TEST GAGE
NURE	NATIONAL URANIUM RESOURCES EVALUATION
NYX	NEW YORK SHIPBUILDING COMPANY
ORA	OPERATIONS RECREATION ASSOCIATION
ORNL	OAK RIDGE NATIONAL LABORATORY
PA	PROGRAMMATIC AGREEMENT
PDP	PROCESS DEVELOPMENT PILE
PSE	PRESSURIZED SUB-CRITICAL EXPERIMENT
RBOF	RECEIVING BASIN FOR OFFSITE FUEL
RTR	RESONANCE TEST REACTOR
SALT	STRATEGIC ARMS LIMITATION TREATY
SCDAH	SOUTH CAROLINA DEPARTMENT OF ARCHIVES AND HISTORY
SCDHEC	SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
SCIAA	SOUTH CAROLINA INSTITUTE OF ARCHAEOLOGY AND ANTHROPOLOGY
SDI	STRATEGIC DEFENSE INITIATIVE
SE	SUB-CRITICAL EXPERIMENT (EXPONENTIAL TANK)
SHPO	STATE HISTORIC PRESERVATION OFFICE/OFFICER
SHRINE	SAVANNAH RIVER INFORMATION NETWORK ENVIRONMENT
SP	STANDARD PILE
SRARP	SAVANNAH RIVER ARCHAEOLOGICAL RESEARCH PROGRAM
SRI	SAVANNAH RIVER NATURAL RESOURCE MANAGEMENT AND RESEARCH INSTITUTE
SRL	SAVANNAH RIVER LABORATORY
SREL	SAVANNAH RIVER ECOLOGY LABORATORY
SRNL	SAVANNAH RIVER NATIONAL LABORATORY
SROO	SAVANNAH RIVER OPERATIONS OFFICE
SRP	SAVANNAH RIVER PLANT
SRS	SAVANNAH RIVER SITE
SRSO	U. S. DEPARTMENT OF ENERGY-SAVANNAH RIVER SITE OFFICE
SRSOC	SAVANNAH RIVER SITE OPERATIONS CENTER
SRTC	SAVANNAH RIVER TECHNOLOGY CENTER
STI	SCIENTIFIC AND TECHNOLOGICAL INFORMATION
TC	TEMPORARY CONSTRUCTION
TCAP	THERMAL CYCLING ABSORPTION PROCESS
TRAC	TRACKING ATMOSPHERIC RADIOACTIVE CONTAMINANTS
TTBT	THRESHOLD TEST BAN TREATY
UCNI	UNCLASSIFIED CONTROLLED NUCLEAR INFORMATION
UGA	UNIVERSITY OF GEORGIA
USC	UNIVERSITY OF SOUTH CAROLINA
USFS	U. S. FOREST SERVICE
USH	UNIVERSAL SLEEVE HOUSING
VWF&S	VOORHEES, WALKER, FOLEY AND SMITH
WIND	WEATHER INFORMATION AND DISPLAY SYSTEM
WSRC	WESTINGHOUSE SAVANNAH RIVER COMPANY



# I. INTRODUCTION

Savannah River Site (SRS), known as the Savannah River Plant (SRP) prior to 1989, produced plutonium and tritium for use in the manufacture of nuclear and thermonuclear weapons from its inception throughout the Cold War. Du Pont, functioning as prime contractor for the Atomic Energy Commission, constructed the facilities that would carry out this production mission between 1950 and 1956. As the Cold War ended, so did the original mission, and in 1992 the focus at SRS turned to clean up of nuclear materials, waste management, research and development, and technology transfer. In addition, SRS began a phased plan to reconfigure and modernize the Site itself, a move viewed as necessary in carrying out future missions and attracting new missions. The plan called for the consolidation of plant administrative and supportive functions to a location in the interior of the Site, as well as the deactivation and decommissioning (D & D) of excess facilities, many of which have been determined NRHP-eligible as contributing resources to a Cold War Historic District.

This documentation was prepared in response to the mitigation strategy presented in *Savannah River Site's Cold War Built Environment Cultural Resource Management Plan* (CRMP) dated January 26, 2005 and signed by the Department of Energy-Savannah River (DOE-SR), the South Carolina Historic Preservation Office (SHPO), as well as other consulting parties. The CRMP stipulates that thematic studies be undertaken as a thorough yet cost effective manner of documenting a complex number of processes and topics involved in the history of SRP. The impetus for these thematic studies was the imminent decommissioning and/or dismantling (D & D) of the majority of those buildings found to be eligible for the National Register of Historic Places (NRHP) as contributing resources in a Cold War Historic District. The 700/A Area, which functioned as an administrative and support center, and its Cold War NRHP-eligible buildings are being documented under the themes of Administration, Support, Safety, and Security as outlined in Table 6 of the CRMP. The resulting narrative is based on oral history, primary documentation and research. New South Associates prepared the narrative and Westinghouse Savannah River Company (WSRC) completed the photographic documentation.

SRS is located on 198,344 acres in Aiken, Barnwell, and Allendale counties of South Carolina. The Savannah River is its western border. The rural site comprises roughly one percent of South Carolina and contains approximately 310 square miles within the upper coastal plain of the state. Historically, the area that became the Site was mostly agricultural and its current physical setting remains fairly rural. The county seat of Aiken County, the City of Aiken, lies 12 miles to the north; the Augusta, Georgia metropolitan area lies 15 miles to the northwest. The cities of Jackson and New Ellenton are located on the site's northern perimeter. SRS is considered to be part of the 18-county Central Savannah River Area (CSRA) adjoining the Savannah River in both South Carolina and Georgia.

## SRS COLD WAR HISTORIC DISTRICT AND ITS SIGNIFICANCE

SRS is an exceptionally important historic resource containing information about our nation's twentieth-century Cold War history. It contains a well-preserved group of buildings and structures placed within a carefully defined



614-1A



701-2A



701-3A



702-A



703-A



708-A



709-A



710-A



713-A



714-A



716-A



717-A



719-A



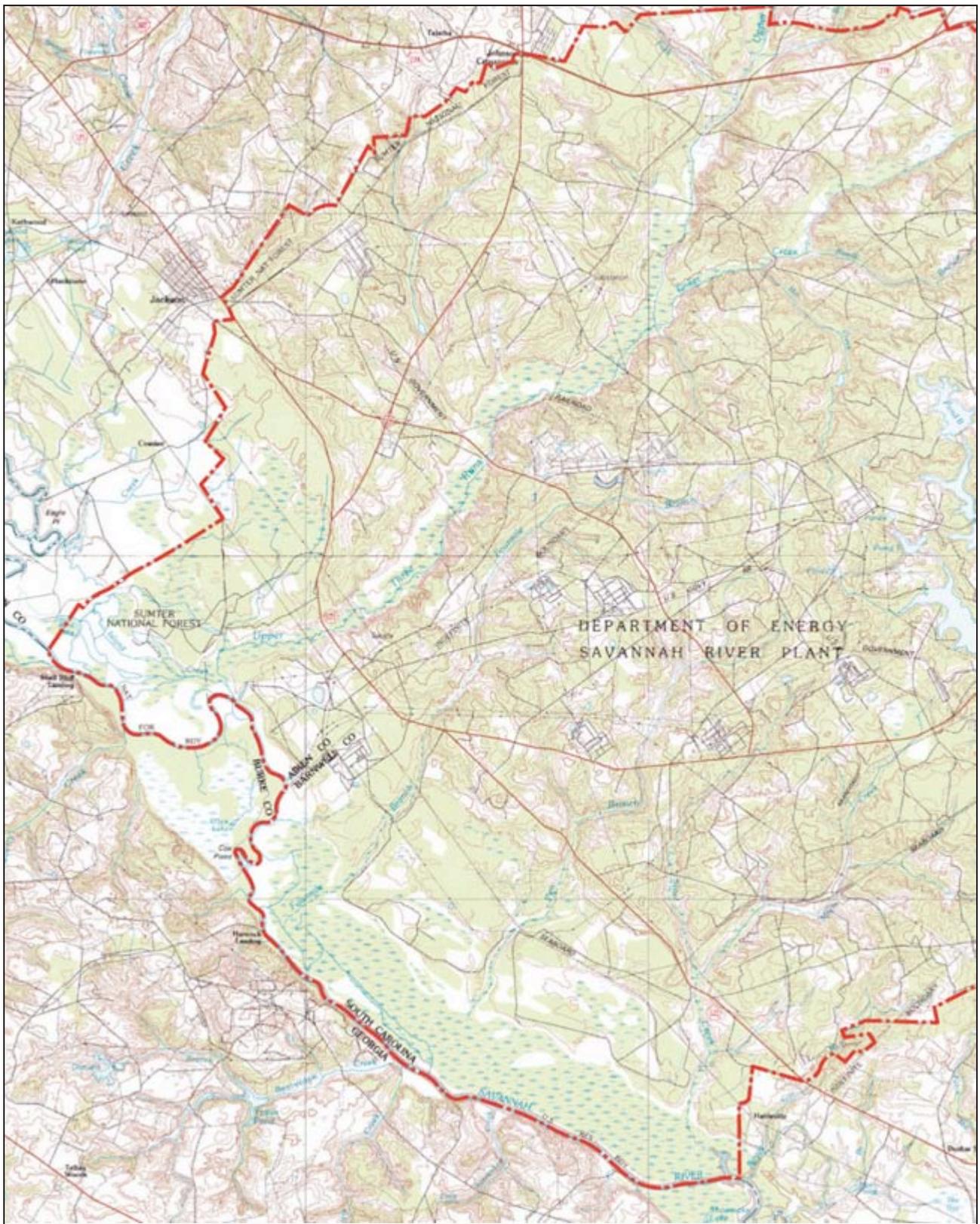
720-A

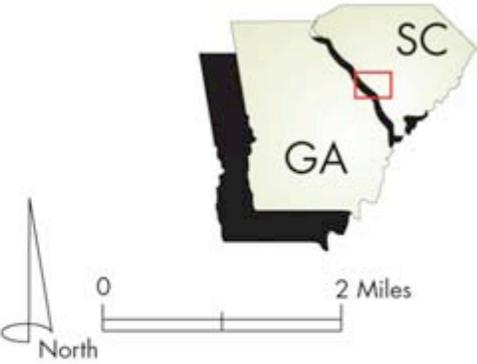


722-A

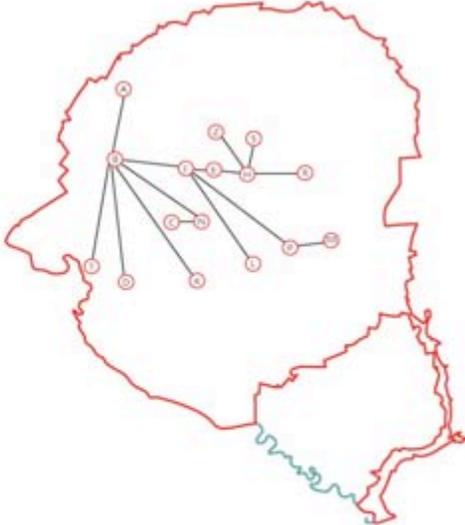
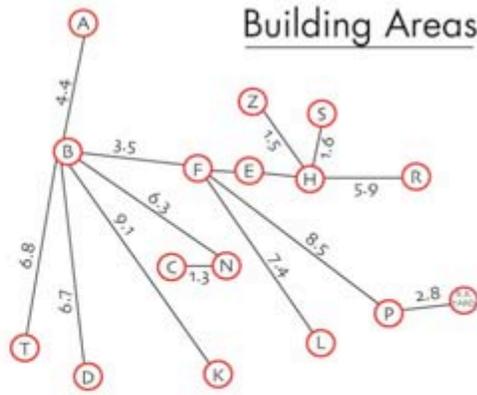


661-G





Source: USGS 30X60 Minute Quadrangle; Barnwell, S.C., GA., 1982.



site plan that are historically linked, sharing a common designer and aesthetic. The site layout, predicated on environmental safety best practice in 1950 and a functional industrial approach, is intact. The site, its buildings, structures and its layout, constitute a unique cultural landscape that possesses historical significance on a national, state and local level in the areas of engineering, military, industry, and social history. The Site is directly associated with the Cold War, a defining national historical event of the twentieth century that lasted over four decades. This association satisfies National Register Criterion A, the association of a property with events that have made a significant contribution to the broad patterns of our history. The Site's process and research facilities were also used to further research in pursuit of peaceful uses of atomic energy. The Transplutonium Programs, the discovery of the free neutrino, the production of plutonium-238 for heat sources, and the production of heavy water for research were all notable achievements. The Cold War and the development of atomic energy for weapons and for peaceful purposes have received considerable scholarly attention as definitive forces within twentieth-century American history.

The proposed Cold War district also satisfies National Register Criterion C as it embodies best practice principles of nuclear design and safety when constructed. It represents the work of a master in that Du Pont was the designer of the unique and unprecedented complex that required the simultaneous construction of five nuclear production reactors, two separation plants, an industrial size heavy water plant, and a fuel and target manufacturing plant. Du Pont was considered the single American firm with the capability to handle the enormous job entailed in the construction and operation of SRS. While this facet of Criterion C is usually applied to an architect or architectural firm, it is appropriate here. Du Pont brought its corporate culture, management skills, adherence to flexible design, and its deep atomic energy experience to the job. A letter from President Truman to Du Pont requesting they take on the project underscores the fact that Du Pont was considered uniquely qualified to build and operate SRS.

The historic district is also considered eligible under Criterion C for the methods of construction used that involved flexible design, an innovative approach that was characteristic of Du Pont and its management style and that directly contributed to SRS's success. The proposed district's buildings and structures reflect unique architectural and engineering attributes that were consonant with their mission. These include construction materials, functional design, and special design criteria for radiological shielding, personnel safety, and the ability to sustain a military attack. The engineering required to bring the nine Savannah River plants online was innovative and was successfully completed under rigorous schedules unparalleled in our nation's twentieth-century history. For all the above reasons, the proposed Cold War District amply satisfies National Register Criterion C.

SRS's historic district may also fulfill National Register Criterion D, the potential to yield information in history. While this criterion is usually reserved for archaeological resources, it is applicable here. Much of the historical data that elucidates SRS's full Cold War history is held as classified information. When these records are declassified and open to the American public, new information disclosed might yield important information about SRS's Cold War past that is unknown or imprudent to publicly release at this time.

While its national importance to the Cold War is evident, SRS also gains National Register standing for its impact on South Carolina as a whole and on the CSRA as a region. It transformed an agricultural landscape into an industrial site, recasting a mostly agricultural workforce into technical jobholders. Since SRS, an industrial corridor

has developed that runs downstream along the Savannah River from Clark Hill Dam to Georgia Power's nuclear Plant Vogtle near Waynesboro. The selection of the site along the Savannah River for the construction of what would be known as the SRS shifted the image of South Carolina from that of a rural agrarian state to one that was more progressive and industrialized. Prior to SRS, the main state industry was textile milling. The training and inclusion of locals within the SRS workforce demonstrated the ability of southerners to work within modern industrial facilities. Du Pont's management of this labor force, and the harmonious relations between races at SRS, further diminished northern concerns about establishing factories in the South. The existence of SRS, and the efforts of local politicians, would result in additional nuclear facilities coming to the region. Interstate and regional pacts on nuclear topics were developed that would become models for interstate cooperation. The presence of SRS shifted state university curriculums from solely an agricultural focus to a new emphasis on engineering, raised the hopes and self esteem of its citizens, and placed the state at the forefront of the march to a New Age. No other single construction, site or event would so affect South Carolina's history in the Cold War era, and SRS derives National Register standing at the state level from this influence as well.

No other undertaking would so dramatically alter a region. By its very construction, SRS rewrote the history of the CSRA. Communities, like Ellenton and Dunbarton, vanished in its wake, as did the rural areas that surrounded them. Other communities, like Aiken, changed almost overnight. As the first "open" nuclear site, SRS brought an immigration of scientists and engineers the likes of which few regions in the nation would ever experience, changed the housing stock and appearance of the towns these atomic immigrants would move to, changed the make-up of their schools, political parties, and other social organizations, and rewrote local history. It is difficult to imagine anyone within the CSRA, if asked about the history of their region, not mentioning SRS within their first thoughts and words. SRS is extremely significant regionally, as well as nationally and at the state level.

## DOCUMENT ORGANIZATION

This narrative provides an overview of the historic activities carried out in A Area, organized into four key topics: Administration, Safety, Security, and Support. It also includes area and building descriptions and photographic documentation. This report is a section within a developing portfolio of similar studies that address the historic mission of SRS during the Cold War and its role during the Atoms for Peace Program.

After this introduction, there are six chapters. Chapter II provides a detailed historic context for SRS and its purpose within the national complex of nuclear weapons facilities. The next chapter deals with the siting and construction of A Area and its facilities, the criteria employed in their design, along with as-built architectural descriptions. Following in Chapter IV is a discussion of the administrative history of SRS and the two entities, the Atomic Energy Commission and the Du Pont Company, charged with seeing that the plant's mission was carried out. Chapter V deals with the priority of safety, as integral to the history and culture of SRS as the mission itself, and the measures used to instill the importance of a safe working environment in the minds of SRS employees. Considering its role in the weapons complex, security of plant materials and intelligence was of the utmost importance; Chapter VI

addresses this aspect of the Site. Chapter VII addresses those functions, supportive in nature, that contributed to the success of the mission and enhanced the experience of plant employees.

For clarity, A Area will be referred to as the 700/A Area in this document. In addition, the monikers SRS (Savannah River Site – post 1989) and SRP (Savannah River Plant – 1950-1989) will be used where chronologically appropriate.

## II. SAVANNAH RIVER SITE COLD WAR CONTEXT

The SRS, built by E. I. Du Pont de Nemours and Company for the U.S. Atomic Energy Commission, had its origins in the early years of the Cold War as a facility for the production of plutonium and tritium, materials essential to the nation's nuclear arsenal. From the beginning, its mission was military. It was designed primarily to produce tritium, and secondarily to produce plutonium and other special materials as directed by the Department of Energy (DOE) and its precursor organizations, the Atomic Energy Commission (AEC) and the Energy Research and Development Administration (ERDA). Because of this mission, SRS has been an integral part of the nuclear weapons production complex. The production goal of the complex was to transform natural elements into explosive fissile materials, and to bring together fissile and non-fissile components in ways that would best meet the goal of Cold War deterrence. SRS provided most of the tritium and a large percentage of the plutonium needed for the production of fissile components from 1953 through 1988.

In addition to the Cold War defense mission, there was another, almost parallel, story of research and development using Site technologies and products for peaceful uses of atomic energy. Such government-sponsored research was strongly supported by the AEC, which was a civilian organization independent of military control. Although many of the non-defense programs conducted at SRS did not develop with the promise hoped for in the 1950s and 1960s, this was not for want of effort on the part of the AEC, Du Pont, or the scientists who helped operate SRS.

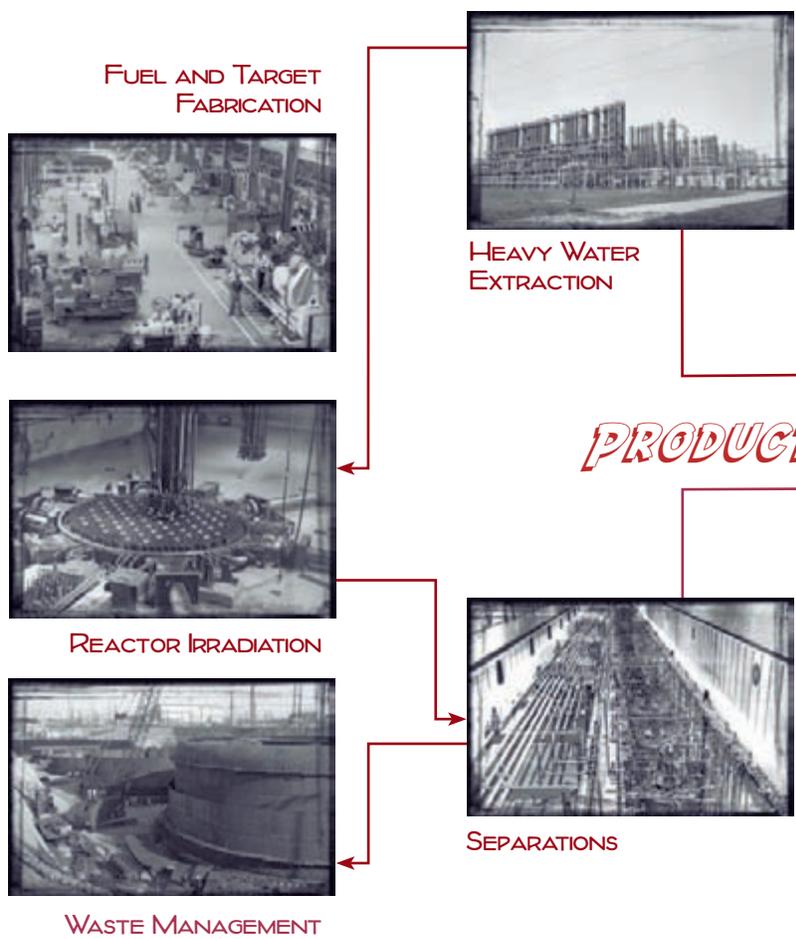
The two basic missions at SRS, nuclear materials production for defense, and production for non-defense programs, are explored in greater detail below. Both were considerable achievements. The defense mission produced much of the material required for the nuclear bombs and warheads constructed during the height of the Cold War. The non-defense programs generated new materials and increased the general knowledge of nuclear science.

### COLD WAR DEFENSE MISSION

The defense mission of the SRP, as it was known prior to 1988, was an integral part of the AEC program to create weapons-grade plutonium and tritium for incorporation into fission and fusion bombs, known respectively as atomic and hydrogen bombs. The defense mission of SRP, and for that matter, the AEC, had its origins in the Manhattan Project, the World War II program that manufactured the world's first fission bombs, using both uranium and plutonium. It was the use of these devices against Japan in August 1945 that ended World War II, and ushered in the Atomic Age. The Manhattan Project, a vast and secret enterprise, set the tone for its successor, the AEC, even though the two were organized in different ways.

WE DON'T DIG URANIUM OUT OF THE GROUND,  
AND WE DON'T MAKE BOMBS,  
BUT WE DO NEARLY EVERYTHING IN BETWEEN.

## PLANT PROCESSES



## PRODUCTS

### PLUTONIUM-238

Produced by neutron irradiation of neptunium-237, a byproduct of uranium irradiation. Valuable for its heat generating capacity.

### CURIUM-244

Properties and applications similar to plutonium-238.

### PLUTONIUM-239

Used as a nuclear explosive, a breeder reactor fuel, or as the starting target material for production of heavier radioisotopes.

### TRITIUM (*Hydrogen-3*)

A radioactive isotope of hydrogen, component of thermonuclear explosives, and a potential fuel for thermonuclear fusion power generation.

### COBALT-60

Known radiation source and has long been used for radiotherapy.

### CALIFORNIUM-252

One of the rarest man-made isotopes, has great potential value in medicine, industry, research, and education.

### HEAVY WATER (*D<sub>2</sub>O*)

Important nonradioactive product of the Savannah River Plant. It occurs at a concentration of 0.015% in natural water and must be concentrated to 99+% to be useful in reactors as a neutron moderator.

### AND OTHER RADIOACTIVE ISOTOPES

Depiction of Plant Processes and Products Compiled from Savannah River Laboratory's *Nucleonics of Tomorrow in the Making Here Today* (Aiken, South Carolina: E. I. Du Pont de Nemours and Company, not dated).

## The Manhattan Project

The Manhattan Project, formally known as the Manhattan Engineer District (MED), was established in August of 1942, more than half a year after Pearl Harbor.<sup>1</sup> Its mission was to beat the Germans in what was widely assumed to be a race for the atom bomb.<sup>2</sup> Unlike other Army Corps of Engineers districts, the MED had no specific geographical boundaries and virtually no budget limitations. General Leslie Groves was put in charge of the operation, and he was allowed enormous leeway. As Groves himself would state after the war, he had the role of an impresario in “a two billion dollar grand opera with thousands of temperamental stars in all walks of life.”<sup>3</sup> In organizing the MED, Groves established a precedent that would carry over to the AEC: scientific personnel and resources would be culled from the major universities, but production techniques would be obtained from corporations familiar with the assembly line.<sup>4</sup> The Manhattan Project could not have succeeded without a willing army of brilliant physicists (many of whom were refugees from Hitler’s Europe), the nation’s huge industrial base of capital and personnel skills, and the leadership and construction skills provided by the Army Corps of Engineers.<sup>5</sup>



The last half of 1942 saw the groundwork laid for the development of the Manhattan Project. Groves and others selected the methods and sites to be used to produce the bomb. For both speed and economy, Groves wanted to concentrate on one single method for bomb production, but science would not oblige.<sup>6</sup> In the fall of 1942, there were a number of equally valid and equally untried methods for obtaining the fission material for an atomic bomb. There was even a choice of materials: uranium-235 and plutonium.

*Commemorative Manhattan Project Button “A” Bomb Button. Courtesy of Oak Ridge National Laboratory.*

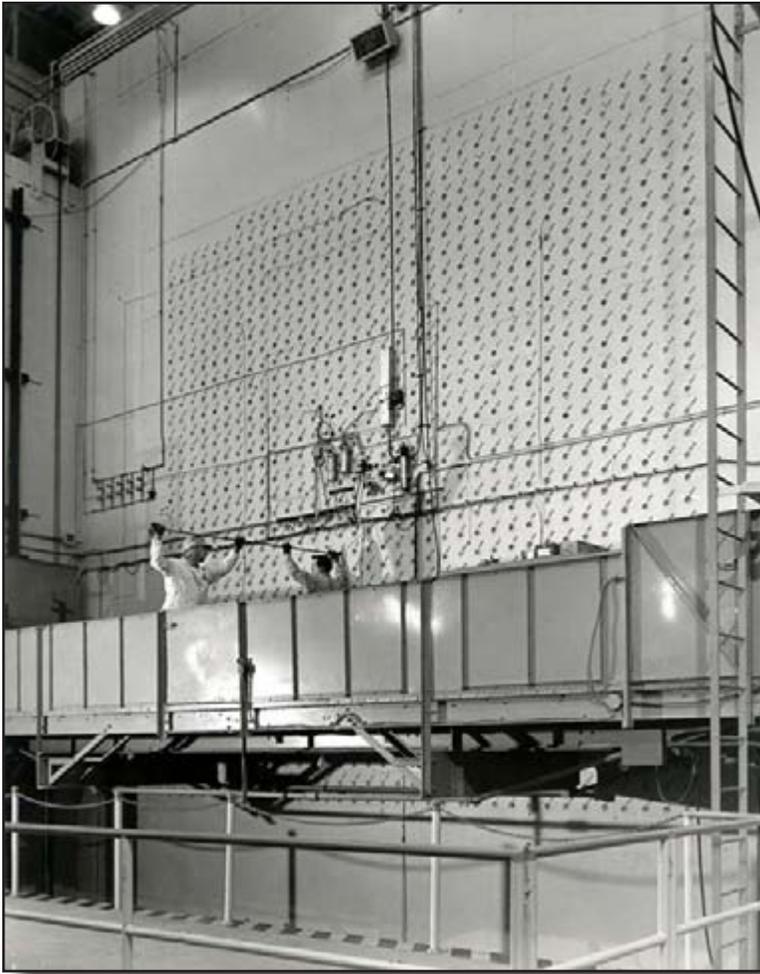
The methods best known to the scientific community at the start of the Manhattan Project dealt with the collection of isotope uranium-235, which comprises only a very small percentage of natural uranium. There were at least four possible methods for removing uranium-235 from the matrix of natural uranium: the centrifuge method; thermal diffusion; gaseous diffusion; and electromagnetic separation.



*General Leslie Groves (left), Manhattan Engineer District Leader and Robert Oppenheimer (right), Scientist, Los Alamos.*

To complicate matters, there was also a new method based on the production of a man-made element, plutonium, discovered and named by Glenn Seaborg and others in 1941. Plutonium could be produced by irradiating natural uranium in a pile or reactor, after which it could be separated from uranium chemically, something not possible with isotopes like uranium-235.<sup>7</sup>

By the end of 1942, the field was narrowed to three main methods in the race to produce nuclear materials: gaseous diffusion, electromagnetic separation, and plutonium production. In December 1942, when President Roosevelt gave his final approval for the all-out push, it was decided to proceed with all three.<sup>8</sup> The last of



*X-10 Pile Constructed by E. I. Du Pont de Nemours & Co. at Oak Ridge, Tennessee, now designated as a National Historic Landmark. Courtesy of Oak Ridge National Laboratory*

these methods certainly got a boost on December 2, 1942, when Italian refugee Enrico Fermi, working at the University of Chicago, created the world's first self-sustaining chain reaction in a graphite reactor.<sup>9</sup>

By this time, three huge test and production sites had been selected for MED's work. The first was Oak Ridge in Tennessee, then known as "Clinton Engineer Works," selected as the site for a full-scale electromagnetic plant (Y-12), a gaseous diffusion plant (K-25), and a plutonium pile semi-works (X-10).<sup>10</sup> Constructed in 1943, X-10 became the world's first production reactor when it went critical on November 4, 1943.<sup>11</sup> Hanford, in Washington State, was selected as the main plutonium production site, while Los Alamos in New Mexico, under the direction of Robert Oppenheimer, was chosen to be the nerve center of the project and the bomb assembly site.<sup>12</sup>

While Los Alamos may have been the center of the MED, Hanford was the key to the plutonium bomb, which required the new element in quantities unimaginable before the war. For the construction of the X-10 at Oak Ridge and the full-scale reactors to be built and operated at Hanford, Groves picked Du Pont. This was done not only because of Du Pont's history of explosives manufacture and its association with the U.S. military, but also because it was a large chemical firm that had the personnel, organization, and design capabilities required to do the job.<sup>13</sup> Most importantly, it had a tradition of translating scientific ideas and laboratory techniques into assembly line production.<sup>14</sup>

To do so in a field of endeavor in which they were not expert, Du Pont was to depend heavily upon the Metallurgical Laboratory of the University of Chicago for nuclear physics and radiochemistry experience. Du Pont's key technical employees were sent to Chicago and to Clinton to learn from the research scientists about problems that would bear on the design and operation of the semi-works and the full-scale production plants. This dialogue between the industrial engineers and the academic scientists would be the basis for the selection of processes, and the design of the equipment needed to carry them out, at both the semi-works and at Hanford.<sup>15</sup>

Hanford's three reactors (B, D, and F) and two separations buildings were constructed in 1943-1944. The reactors, water-cooled and graphite-moderated, went on line between September 1944 and February 1945.<sup>16</sup> One of the first crises in the plutonium program occurred shortly after the Hanford B reactor went critical in September 1944. The reactor would go critical and then shut down in a totally unexpected series of oscillations that threatened to ruin the production schedule. After frantic research, it was determined that the reaction had been killed by a periodic build-up of xenon that proved to be a huge neutron absorber with a nine-hour half-life.<sup>17</sup> An engineering feature added by Du Pont was instrumental in solving the problem of xenon poisoning. When scientists at the University of Chicago's Metallurgy Laboratory insisted that only 1500 tube openings were needed in the reactor face, Du Pont added an additional 500 openings as a precaution. This spare capacity, built into every Hanford reactor, made it possible to load the extra openings and simply overpower the effect of the xenon.<sup>18</sup>

By early 1945, Hanford was shipping plutonium to Los Alamos for bomb assembly work.<sup>19</sup> With a detonation device based on implosion, which was more complicated than that required for the uranium bomb, the plutonium bomb had to be tested near Alamogordo, New Mexico, in July 1945. One month later, a similar device was dropped on Nagasaki, only three days after the uranium bomb was dropped on Hiroshima.

The Manhattan Project had been a purely military undertaking, conceived and successfully concluded as a top-secret operation of the Second World War. In the year that followed the war, the project began to unravel as top scientists and others left the project to return to civilian life, and the government considered different proposals for dealing with the awesome power that had ended the war.

### Onset of the Cold War

Relations between the United States and the Soviet Union, guarded during WWII, began to chill in the aftermath. The Cold War had its "official" beginnings in February and March of 1946, with three critical events. The first was Stalin's speech (February 9) to Communist Party stalwarts, reaffirming the Party's control over the Soviet Union, and promising more five-year plans and an arms race to overtake the capitalist powers. This was followed on February 22 by George Kennan's famous telegram describing the expansionist worldview of the Soviet leadership, and suggesting "containment" as the best solution. Last but certainly not least, on March 5, was Churchill's "Iron Curtain" speech at Fulton, Missouri.<sup>20</sup>

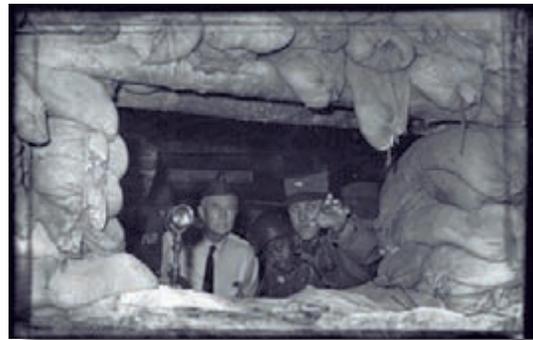
The beginnings of the Cold War in early 1946 quickly derailed initial talk of international control of atomic energy. By the time the AEC was created by Congress in the summer of 1946, atomic energy had become the cornerstone of the nation's defense against the Soviet Union's preponderance in conventional land forces. For this reason, President Truman was shocked to discover that when the AEC took over Los Alamos in early 1947, the United States did not possess a single assembled working bomb.<sup>21</sup>

Between 1947 and 1950, during the chairmanship of David Lilienthal, the main mission of the AEC was the re-establishment of the nation's nuclear arsenal. The AEC was created as an umbrella agency to control all of the nation's nuclear research and materials production. In this capacity, by early 1950 the AEC oversaw a virtual nuclear empire that not only included old MED facilities at Oak Ridge, Hanford, and Los Alamos, but also encompassed offices in Washington, D.C. and facilities at Argonne National Laboratory (Chicago); Schenectady,

New York; Brookhaven National Laboratory, New York; and the University of California Radiation Laboratory at Berkeley, in addition to other small facilities around the country.<sup>22</sup>

During this same period, international events conspired to make the AEC's defense mission even more critical, as international relations slid further into the deep freeze. Concerned that a devastated postwar Europe might drift into the Communist camp, the U.S. government introduced the "European Recovery Program," first espoused by George Marshall in June of 1947. The "Marshall Plan," as it was commonly known, was worked out between the U.S. and various European nations months before it passed Congress in April of 1948. Although offered to all European nations, Stalin saw to it that his side refused to participate. When middle-of-the-road Czechoslovakia expressed interest in the plan, the local Communists, aided by the Red Army, staged a coup in February 1948. This move also gave the Soviets direct access to the rich Joachimstahl uranium mines, desperately needed by Stalin's nuclear program.<sup>23</sup>

Unwilling to cooperate with the Western allies in the postwar reorganization of Germany, Stalin initiated the Berlin Blockade, which began in the summer of 1948 and lasted almost a year. It was the first direct confrontation between the United States and the Soviet Union, and it led to the creation of the North Atlantic Treaty Organization (NATO) in 1949.<sup>24</sup> Other crises soon followed. In May of 1949, the Chinese Nationalists, still devastated from the Japanese invasion during World War II, collapsed before Mao's Communist insurgents. Even more ominous, on August 29, 1949, the Soviet Union detonated its first atomic bomb (a plutonium device), an achievement that Truman and most of the U.S. nuclear establishment thought would elude the Soviets for years to come.<sup>25</sup> At the end of 1949 and beginning of 1950, in the wake of the Soviet bomb, Truman and the AEC made plans for the development of the hydrogen bomb, the so-called "Super."<sup>26</sup> Almost simultaneously, Klaus Fuchs, a German émigré who had served in the British Mission to the Manhattan Project at the highest levels of plutonium bomb research, confessed to spying for the Soviets. This revelation in February 1950 sent shock waves through the nuclear community in both Britain and the United States, and seemed to reinforce the decision for both the Super and tighter security. Senator Joseph McCarthy began his accusations just days after news of Fuchs' confession, and four months later, on June 25, 1950, North Korea invaded South Korea.



Senator and Brigadier General in the U.S. Army Reserve Strom Thurmond, Representative Leroy Anderson and Captain Harry Peters, 1957. "Along the Iron Curtain, Looking into Communist East Germany from 11th Armored Cavalry Regiment Observation Post." Courtesy of the Special Collections, Clemson University Libraries, Clemson, South Carolina.

During the Korean War (1950-1953), the AEC's defense mission was paramount, as witnessed by the explosion of the first H-Bomb in November 1952, and the growth of the nation's nuclear arsenal from 300 to 1000 bombs. The military mission remained strong long after the war, with the official U.S. policy of "massive retaliation" announced by Secretary of State John Foster Dulles in January 1954.<sup>27</sup> The centerpiece of the nation's nuclear arsenal was the H-Bomb, a thermonuclear device that relied on a complex combination of fission and fusion, with fission required to heat and fuse atoms of hydrogen isotopes like tritium to release the high-energy neutrons required for the blast. During the 1950s, a number of thermonuclear devices were detonated, first by the United

States and quickly followed by the Soviet Union. These new bombs required increased supplies of plutonium as well as tritium, which had a half-life of 12 to 13 years. The push for the hydrogen bomb led to the expansion or establishment of new AEC facilities, beginning in 1950. Foremost among these new or improved facilities were the Los Alamos Scientific Laboratory, the Lawrence Livermore Laboratory in California, and the SRP in South Carolina.<sup>28</sup> The SRP was first conceived to produce tritium, but was designed to be versatile in its production capacity, accommodating the production of both tritium and plutonium, in addition to other nuclear materials.

The first U.S. thermonuclear device, Mike I, was detonated in November 1952, before the completion of SRP. However, for at least a decade after the first SRP reactor went critical in December 1953, the main, if not overwhelming, mission of the Plant was the production of plutonium and tritium, in the percentages required by annual AEC quotas. SRP played a crucial role in the production of nuclear materials for both fission and fusion bombs, first for Air Force bombers, and finally for the long-range missiles that became prevalent in the late 1950s and early 1960s. During the period when the Cold War was at its peak, between the Korean War (1950-1953) and the Cuban Missile Crisis (1962), SRP was a main contributor to the AEC's defense mission.



*Mike Shot. Courtesy of the Los Alamos National Laboratory*

### Savannah River Plant as Part of the Big Picture

Cold War nuclear weapons production in the United States can be divided into four phases: (1) a research phase, (2) a growth and production phase, (3) a stabilization phase, and (4) a second growth and production phase. The first research phase lasted from the end of World War II until 1955. The second phase witnessed a period of growth and production that lasted from about 1955 through approximately 1967. It was in preparation for this production that the Savannah River Plant was constructed, and this period approximates the more productive

era of reactor operations at the site. The primary mission of the Savannah River Plant has been first to produce tritium, and second to produce plutonium and other special materials as directed by the Department of Energy and its precursor organizations.

Complex-wide, plutonium production reached its peak in the early 1960s. The third period was one of stability, during which the concentration of effort was on the improvement of performance and operations of the nuclear arsenal; this phase lasted from about 1967 until 1980. During this period, eight of the nine Hanford reactors were closed down, and the ninth reactor that remained in operation was used to produce fuel-grade plutonium. This left Savannah River as the primary source of weapons-grade plutonium during the period. The fourth phase was a second period of growth, which began in 1980 and saw the restart of L reactor at SRP and the return of Hanford's N reactor to weapons-grade plutonium production. In addition, SRP's C, K, and P reactors were used to produce super-grade plutonium that could be blended with excess fuel-grade plutonium that had been produced in the Hanford N reactor. This phase ended in 1988, when all plutonium production was halted.<sup>29</sup>

The following context, which is specific to Savannah River Site, is based generally on this chronological framework. The plant's construction (1950-1956) is treated as a separate phase in the Site's history, followed by a stable period of production and performance improvement that lasts through 1979. Between 1980 and 1989, SRS experienced dramatic change. The decade began with expansion but this was soon sharply curtailed by shifts in the public's perception of nuclear technology and the abbreviation of the Site's defense mission with the fall of the Iron Curtain.

## SAVANNAH RIVER PROJECT, 1950-1955

The Soviet Union detonated its first atomic bomb on August 29, 1949. Labeled "Little Joe" by American journalists, the bomb's unpublicized detonation was confirmed through the AEC's program of sampling rainwater. As a consequence, production needs were increased by the Joint Chiefs of Staff who established new minimum requirements for the atomic stockpile. Programs that had been stalled were now begun with vigor. To accommodate the perceived production needs, new "production piles" were required and the Joint Committee on Atomic Energy (JCAE) decided to build new reactors rather than upgrade those at Hanford.

Enlarging the stockpile was the first response to the Soviet bomb. The second was the decision to produce a hydrogen bomb, a weapon many times more powerful than the uranium and plutonium devices dropped on Japan at the end of World War II. On January 31, 1950, Truman signed a presidential directive that directed the AEC to continue work on all forms of nuclear activity, including the development of the thermonuclear bomb, stating, "We have no other course."<sup>30</sup> A program jointly recommended by the AEC and the Department of Defense to produce materials for thermonuclear weapons in large quantities received presidential approval in June. The AEC had already estimated the construction costs for a new production center at approximately \$250,000,000 and Sumner T. Pike, Acting Head of the AEC, immediately began negotiations with Crawford H. Greenewalt, president of E. I. Du Pont de Nemours & Co.<sup>31</sup> Truman requested funds from Congress for the construction of two

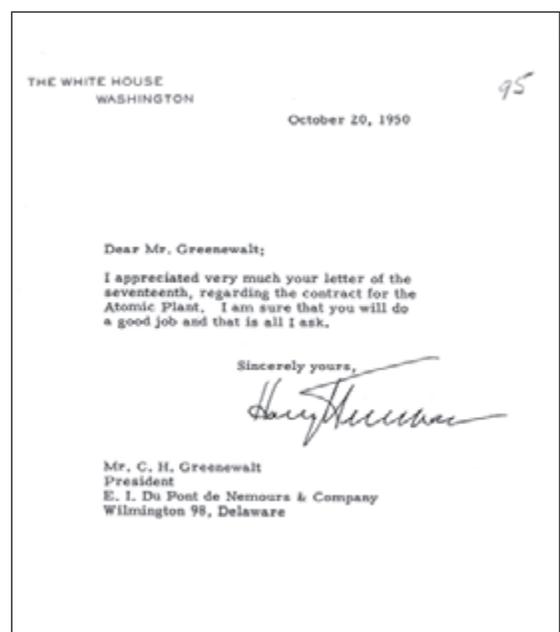
heavy water reactors for the production of thermonuclear weapons on July 7 and shortly after the AEC drafted a letter contract framed in anticipation of Du Pont's acceptance of the project.<sup>32</sup>

### Du Pont Signs On

With the passage of the appropriations bill in early 1950, the AEC opened negotiations with Du Pont to build and operate the new plant. Du Pont had built the X-10 reactor and semi-works for the separation of plutonium from irradiated fuel slug facility at Oak Ridge and had built and operated Hanford during World War II through 1946. Both ventures left an indelible print on the corporation headquartered in Wilmington, Delaware, and the success of both Du Pont efforts had left an equally indelible print in the minds of the MED's Leslie Groves and the AEC. In the field of atomic energy industry, they were seasoned players with a pennant under their belts. Crawford Greenewalt and his staff had participated in a period of intense creativity in which the labors of atomic scientists in their laboratories were duplicated on the production line under wartime conditions. Between 1942 and 1946, Du Pont's engineers and scientists had become experts within the atomic energy field. No other American firm could match Du Pont's expertise in the design and construction of production reactors and chemical processing facilities.<sup>33</sup>

AEC representatives visited Greenewalt formally in May of 1950 to apprise him of the proposed project and on June 8th the Wilmington firm was asked to complete the following: finish the site survey; design, construct, and operate a new reactor installation; and act in a review capacity for the technical aspects of the reactors and the processes for the production of heavy water.<sup>34</sup> The Commission also asked Du Pont to find a location that would not warrant the construction and management of a "company" town, a significant departure from previous military atomic energy plants established by the government.

Du Pont replied that it would consider the project if it had full responsibility for reactor design, construction, and initial operation. The "flexible" reactor design specified by the Commission called for a heavy water moderated and cooled reactor and Du Pont wanted to delay commitment to the project until they were able to review initial plans, particularly for heavy water production, and get a sense of proposed schedule. Greenewalt added a final proviso - that Truman himself request Du Pont's involvement in the project because of its urgency and its importance to the nation's security - which was done in a letter dated July 25, 1950.<sup>35</sup> Greenewalt's request was aimed at squelching any associations with the "merchants of death" label that lawyer Alger Hiss had leveled at the corporation in the 1934 U.S. Senate investigation of the munitions industry. Truman's letter, briefly written and to the point, would become an industrial icon for Du Pont. On July 26, Du Pont's Executive Committee adopted a resolution to undertake the project. The internal resolution also established the Atomic Energy Division (AED) within Du Pont's Explosives Department. The AED would be responsible for the new project.<sup>36</sup>



A letter contract, backdated to August 1, 1950, was signed between Du Pont and the AEC.<sup>37</sup> The letter, which would be superseded by a formal contract three years later, specified that there would be no “facility village” associated with the project and that Du Pont would not be held liable for any lawsuits that might result.<sup>38</sup> On October 18, Greenewalt wrote the company’s stockholders that Du Pont would assume responsibility for the construction and operation of the new facility. As at Hanford, the government would pay all costs and receive any patents that might develop out of the work; Du Pont would get an annual fee of just one dollar.<sup>39</sup> Some of the contractual clauses that were first written into the Hanford contract and were duplicated in the SRP contract would become standard in operating contracts undertaken in the modern nuclear industry.<sup>40</sup>

At the time of the letter agreement, the AEC wanted Du Pont to build a tritium plant with two reactors, each to operate at an energy level of around 300 megawatts (MW). The AEC had selected the reactor type advanced by Argonne National Laboratory that was cooled and moderated with heavy water and Du Pont after review accepted the design. By 1950, heavy water reactors were considered more versatile than the graphite reactors Du Pont had built at Hanford and had better neutron economy.<sup>41</sup> As early as August of 1950, Du Pont’s Atomic Energy Division had made preliminary improvements to the basic heavy water design proposed by Argonne and was on a pathway to construction.<sup>42</sup>

### Site Selection

The proposed site, referred to as “Plant 124,” was selected after a six-month investigation launched by Du Pont’s Engineering Department and aided by the U.S. Army Corps of Engineers (COE). Truman had advised AEC’s Gordon Dean not to brook any political pressure in the decision-making process and the selection process began on June 19, 1950.<sup>43</sup>

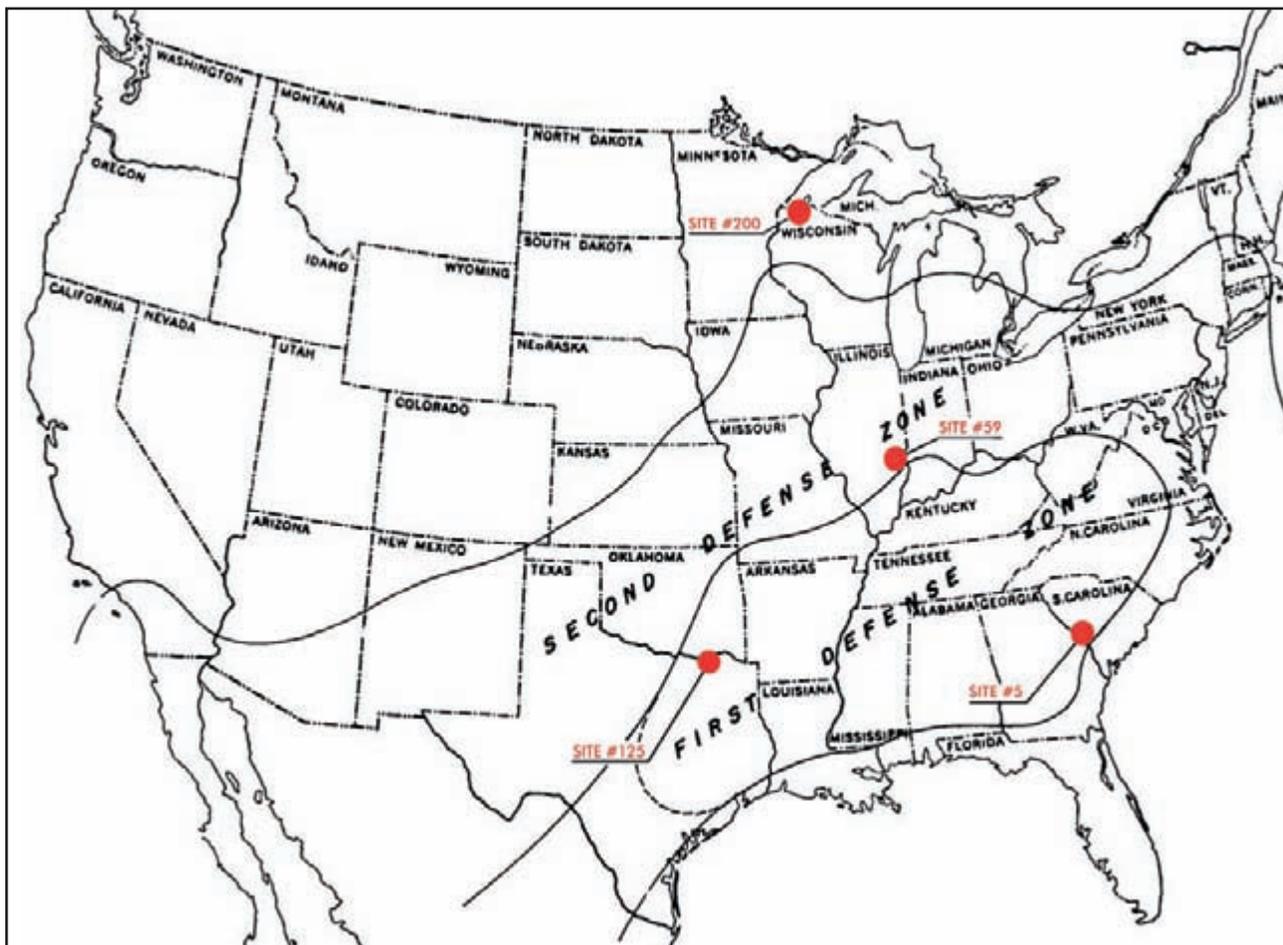
The AEC had first contacted the COE and asked them to prepare a list of sites including government-owned lands that might be suitable. This preliminary data was reviewed in the Cincinnati Corps Office of the Great Lakes Division but was found lacking in definition. The following methodology was agreed upon: all rivers with a recorded minimum flow of 200 cubic feet per second (c.f.s.) were marked on sectional maps prepared by the Corps and locations within 20 miles to a river were considered. Bands were drawn along selected rivers and potential sites were located within these bands. The preferred site would also be located in the “The First Defense Zone” for strategic reasons imposed by the Department of Defense. This zone encompassed area that stretched from Texas to Virginia and north to Illinois. Embracing the central portion of the Southeast, it included 84 candidate sites. A second band of area that stretched from Arizona to New Hampshire was considered the “Second Defense Zone.” The latter had six candidate sites. C. H. Topping, Principal Architect and Civil Engineer within Du Pont’s Design Division, further described the selection process that was guided by “basic site requirements” that were jointly arrived at by Du Pont and the AEC. The requirements were: a one-square mile manufacturing area; a 5.6-mile buffer zone enclosing the manufacturing area; a 10-mile distance to neighboring communities of 500 individuals and a 20-mile distance from communities with 10,000 individuals; presence of supporting populations to absorb the incoming workforce; ample water and power supplies; accessibility by rail and highways; favorable meteorology and geology; and positive conditions for construction and operating costs.<sup>44</sup>

Sixty-five sites were eliminated when progress in reactor design studies established that the minimum acceptable water supply was 400 c.f.s. By August 2, the list was pared down to seven sites. Members of the AEC, Army Corps of Engineers staff, and the Du Pont team, between August 6 and 17, chose these as candidates for a field inspection. Three local sites made it to this shortlist: two in South Carolina and one in Georgia. The site in Georgia was eliminated when it was learned that the Clark Hill reservoir would put a portion of the desired site under water and a site in northwestern South Carolina was considered too isolated. Site #5 in Aiken and Barnwell counties stayed in the running.

Changing water requirements also led to searches in colder climate areas both within and outside of the Second Defense Zone. These sites were put into the selection mix and similarly eliminated as the selection criteria were applied. In mid August, the requirement for the minimum water supply was increased to 600 c.f.s.<sup>45</sup> The Special Committee of the National Security Council on Atomic Energy had called for the construction of three additional reactors.<sup>46</sup>

A final evaluation of sites using the original and expanded criteria focused on four locations. These were Site #125, which was located along the Texas and Oklahoma border on the Red River; Site #59 which was located on the border of Illinois and Indiana on the Wabash River; Site #205 which was located on the shores of Lake Superior in Wisconsin; and Site #5 located in Aiken, Barnwell and Allendale counties on the Savannah River in South Carolina. Essentially, three factors were compared. The first was the availability of large quantities of reasonably pure water for process capability, the second was the presence of towns of sufficient population that could absorb the proposed labor force but were at a sufficient distance to minimize any impacts, and third, the presence of sufficient land that was suitable to the construction of production areas. During the week of August 24th, these sites were field checked by the AEC's Site Review Committee composed of five experts drawn from American engineering firms such as Black and Veatch, Sverdrup, etc., that were authorities on site selection.

Site #5, a rural site along the Savannah River in South Carolina, was recommended to the Site Review Committee on November 13, 1950 as the final selection. In the words of Du Pont Engineer, C. H. Topping, it "more nearly meets the requirements than do the others."<sup>47</sup> The Site Review Committee concurred with the recommendation and Site #5 was selected. The AEC formally confirmed the decision on November 28 and the public was notified by an AEC press release on the same day. AEC's Curtis A. Nelson was named as the plant first local manager in August. Nelson, a Nebraska born civil engineer and colonel in the Manhattan Project, was familiar with heavy water technology through his work as a liaison with Canada's Chalk River Plant. He also brought strong construction experience to the new project from his years in the Civilian Conservation Corps and as engineer in the Corps of Engineers where he had supervised the construction of the Joliet Illinois Ordnance Plants.<sup>48</sup> He was charged, along with Bob Mason, Du Pont's Field Manager for Construction, with moving the project off the Du Pont Company's and their subcontractor's drawing boards and placing nine industrial plants into the rural South Carolina landscape. Mason, a Hanford veteran, was assigned to the project on September 25.



*Site Selection Map Showing Military Defense Zones and the Location of Candidate Sites. Site No. 5 is the future Savannah River Plant.*

### Announcement

The swiftness and military execution of the site selection announcement attests to the months of planning involved in its preparation. At 11 o'clock on Tuesday morning, November 28, 1950, the announcement was made simultaneously at press conferences held in Atlanta and Augusta in Georgia; at Columbia, Charleston, and Barnwell, in South Carolina; and to mayors, presidents of chambers of commerce, state, city, and county officials. During the day, teams representing both AEC and Du Pont called on city, county, and state officials in Atlanta, Columbia, Augusta, Aiken, Barnwell, Ellenton, Jackson, Dunbarton, Snelling, Williston, White Pond, Windsor, and Blackville. Later in the day further details were released concerning the project by the AEC in Washington, D.C. Teams gathered that evening in the office of the Du Pont Field Project Manager at the Richmond Hotel to compare notes.<sup>49</sup>

AEC Field Manager Curtis Nelson and Du Pont's Chief Engineer formally delivered the news to Governor Strom Thurmond and Governor-elect James F. Byrnes in Charleston, South Carolina, where they were attending the Southern Governors Conference. Governor Thurmond invited Georgia's Governor Herman Talmadge to join

in the press conference prepared for the journalists covering the conference. The timing of the announcement for what could only be forecasted as a regional economic success story was excellent for both Thurmond and Talmadge. Byrnes was well versed in atomic energy development for military purposes. He had acted as Franklin Roosevelt's "Assistant President," running the country while FDR fought the war and he was Truman's Secretary of State.<sup>50</sup> All three men were major figures in national and Southern politics and it is unlikely they watched the site selection process unfold without knowledge or interest.

The public announcement of the project signaled a new era in which the American public's right to know was at least partially fulfilled. Previous military atomic energy undertakings had been done in total secrecy as part of a wartime defensive effort. The Savannah River Project was complex and atypical as it was to be constructed during peacetime, its mission still required secrecy, and a government town was not to be constructed.

The latter meant that the surrounding communities, which were fairly settled, were to absorb the new workforce estimated in the thousands and to create the infrastructure and services needed for this population increase. Public disclosure was warranted and unavoidable. A straightforward approach was chosen in which public outreach and partnership initiatives were advocated. Public meetings, lectures, project managers working with community development and business leaders, and the airing of a movie called *The Du Pont Story* in Augusta for business leaders and new employees were just some parts of the AEC and Du Pont's well-orchestrated strategy for strong and positive public relations.

### Site Description

With the site survey behind them, Du Pont moved forward with site definition and acquisition strategies. When acquired, the site would contain about 200,646 acres or 310 square miles within Aiken, Barnwell, and Allendale counties situated within two sub-divisions of the Atlantic Coastal plain: the Aiken Plateau and the Alluvial terraces that lie along the river. Eighty percent of the site was situated within the Aiken Plateau, where elevations ranged between 300 and 385 feet. The terraces are composed of three tiers of varying widths banding the river. From north to south, six streams dissected the tract: Upper Three Runs Creek, Four Mile Creek, Pen Creek, Steel Creek, Hattie Creek, and Lower Three Runs Creek. Five streams empty into the river in a southwesterly direction, the sixth, Lower Three Runs, flows to the southeast and drains the eastern portion of the proposed site. Although irregular in shape, the site measured roughly 22 miles in width and 22 miles in length.

The proposed site was rural but not isolated. The nearest large urban centers in Georgia were Augusta (20 miles northwest), Atlanta (155 miles west and north), Savannah (85 miles to the southeast) and in South Carolina, Columbia (65 miles northeast). In addition, data was gathered on towns with populations of over 1,000 individuals



Front page of *The Augusta Chronicle*, November 29, 1950, reported on the announcement from several angles reflecting the many meanings the new plant would have for the country, the CRSA, and for those displaced by the proposed land acquisition.



*Meeting at Ellenton Auditorium, December 6, 1950. The U.S. Corps of Engineers real estate officers responsible for the land acquisition called a public meeting in Ellenton. A representative from each family was asked to attend the question and answer session. Reportedly, over 500 individuals attended what appears to have been a segregated meeting with attendees, both black and white, spilling out of the main hall into the building entries and lobby. Courtesy of SRS Archives, negative 1221-1.*

within a 50-mile radius to the site. The project area contained seven communities: Ellenton and Hawthorne in Aiken County, and Dunbarton, Meyers Mill, Robbins, Leigh, and Hattieville in Barnwell County. Ellenton, a post-Civil War railroad community and local trading center, was the largest with a population of 600. Dunbarton, also a railroad town, had a population of 231 individuals. The remaining communities were smaller. Meyers Mill possessed some stores and a cotton gin while Leigh was synonymous with a box and crate manufactory, the Leigh Banana Case Company, that operated at that site between 1904 and 1954, employing about 300 people in 1950.<sup>51</sup>

Camp Gordon, Oliver General Hospital and its annex, Daniel Field, and the Augusta Arsenal were military installations less than 26 miles from the proposed site and six airports, five municipal fields on which there was a recapture clause in case of war and one USAF inactive airfield, that were within 40 miles.<sup>52</sup> The existing road system was composed of state highways that intersected with U.S. highways and in addition, there was a well-defined network of unpaved “farm to market” dirt roads. Rail service was already in place. The Charleston and Western Carolina (CWC) Railroad paralleled the river, providing service from Savannah to Augusta and the Atlantic Coast Line Railroad ran from Barnwell to Robbins where it joined the CWC line. The CWC ran through Ellenton and Dunbarton and the smaller communities were railroad stops on the line.

Three companies provided power to area residents and businesses: the South Carolina Electric and Gas Company, the Aiken Electric Cooperative, and the Salkahatchie Electric Cooperative. Two phone companies, Southern Bell and Cassels Telephone Company, were communications providers as were telegraph offices in Ellenton and Dunbarton. U.S. post offices were located in Meyers Mill, Ellenton, and Dunbarton.<sup>53</sup>

The acquisition process was handled over an 18-month period by the South Atlantic Real Estate Division of the U.S. Army Corps of Engineers on behalf of the AEC. The process formally began the day after the announcement so that the government would have the necessary lands either by declaration of taking or through actual purchase by June 30, 1952. The acquisition process was staged to accommodate construction requirements. Priority zones were established, rights of entry obtained, and property transfers swiftly occurred. Ultimately, 123,100 acres situated in Barnwell County, 73,462 acres in Aiken County, and 4,084 acres in Allendale County were acquired. Boundary realignments occurred as the acquisition process progressed, eliminating two of the four communities (Jackson and Snelling) that were originally within the project area and adding on a 4,453 acre corridor of land on both sides of Lower Three Runs Creek in Barnwell and Allendale counties.

Six thousand individuals were evacuated from their homes and homesteads. Some displaced owners moved their homes, joined neighboring communities, and worked at the plant. Business owners relocated and new businesses were spawned by the influx of plant employees, particularly during construction. Others sold their properties and left the area viewing the change as an opportunity. While a sense of patriotism motivated most of the project area residents, it was difficult for all involved as government appraisals were guaranteed to fall short when values were attached to land that had generations of farming and family life invested in its soil.



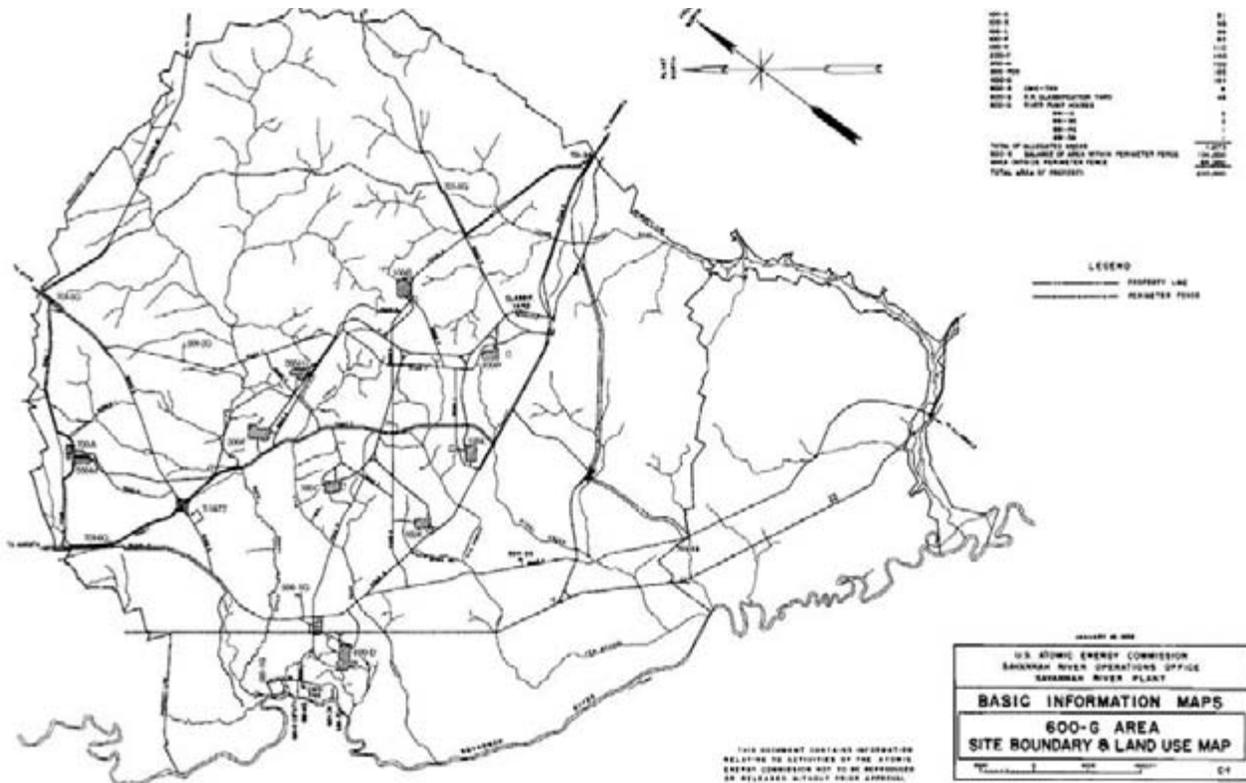
*Some residents preferred to move their homes to locations outside the new federal site. Du Pont designated a House Moving Coordinator to handle the moves. All land was acquired by June 30, 1952. Courtesy, SRS Archives.*

### Site Layout

SRP was originally organized into nine manufacturing areas, a central administration area, and two “service”-building building areas known as the Temporary Construction Area (TC Area) and Central Shops. Between building areas, buffer areas were forested, masking the earlier landscape and providing a sense of distance and isolation. The areas were linked by a well-designed transportation system that included 210 miles of surfaced highways, a cloverleaf that was the first constructed in the state, and 58 miles of railroad track. Previous road names were erased and letter designations, such as Road A, Road B, etc., were assigned.

Each area was given a number and a unique letter designation (Table 1). Function was reflected in the area numbers; letters identified site geography. This code-like system, used first at Hanford for the identification of building areas and their associated facilities, and the road lettering system heightened the anonymous and utilitarian character that evolved at the site.

1956 Basic Information Map- General Areas.



**Table 1. Area Nomenclature**

100 - Reactor Area	100-R, P, L, K, and C
200 - Separations Areas	200-F, H
300 - Fuel and Target Fabrication Area	300-M
400 - Heavy Water Production Area	400-D
500 - General (lighting, transmission lines, substations, etc)	500-G
600 - General	600-G
700 - Administration Area	700-A

Each 100 area, 100-R, 100-P, 100-L, 100-K, and 100-C, was situated within the manufacturing core in the central part of the site, aligned in an arc. After considerable discussion, the reactor areas were purposely dispersed at 2.5-mile intervals from each other and 6 miles from the site boundary to minimize the impact of an “atomic blast.” Early maps show the site layout process and the reservation of space or alternative sites for future expansion. The *Engineering and Design History* notes that much discussion occurred between Du Pont and AEC consultants on where the process buildings should be located, however it was the U.S. Air Force that had the final word on their dispersal, suggesting that the pattern chosen had military ramifications.<sup>54</sup> Two river water pump houses, one at

the mouth of Upper Three Runs Creek and a second two miles upstream from the first, supplied water to the 100 areas, primarily for cooling the heavy water coolant.

The 200 Areas, 200-F and 200-H, were also centrally located within the site's core area, approximately 2.5 miles from the closest reactor area and about 6 miles from the project area perimeter. The canyon buildings, massive concrete buildings, would dominate each separations area. F area contained four process buildings originally and was built to be self-sufficient. H Area did not contain the same process buildings but space was allotted for future expansion. Water to both 200 areas was supplied from deep wells.

The 400-D Area, located near the site's southwest perimeter approximately one mile from the river, housed heavy water production units and support buildings. Resembling an oil refinery, the 400 Area was characterized by three steel tall tower units, a flare tower, a finishing facility and other support buildings including a powerhouse. After SRP was closed to the public, this area was viewable from outside the site boundaries and the GS towers and flare tower was the visual image most area residents connected with SRP. A third river pump house supplied water to 400 Area.

The 300-M Area was situated near the northwest perimeter of the project area where it was laid out in a rectangle that adjoins the 700 Area. It contained testing and fabrication facilities for reactor fuel and targets. Two buildings, 305-M (now 305-A) and 777-M (now 777-10A), contained test reactors that were used to test the components manufactured in the 300 Area and to aid development and testing for SRP reactor design.

The 700-A Area was SRP's administrative and "service" center. It contained the main administration building noted in the excerpt above, the medical facility, communications facilities, patrol headquarters as well as a variety of maintenance and storage buildings. A Area also contained the Main Technical Laboratory, now Savannah River National Laboratory, in which plant processes were researched, designed, and tested, and other research facilities.

Finally, two pilot plant facilities, CMX and TNX, were located near the 400 Area. The former was designed to run corrosion tests on heat exchanger equipment installed in the reactors and to investigate what types of water treatment processes were needed for plant operations. A small pump house accompanied it. The latter was a pilot plant for processes completed in the 200 area canyons.

Nine coal-burning powerhouses located in the building areas supplied steam to the process areas and the overall site. The large pipes that carried the steam are above ground, arching over roadways where necessary and paralleling the road system. Outside the manufacturing and service building areas, general facilities needed for either process support or general site support included three-river water pump houses, a pilot plant, railroad classification yard, and burial ground for solid wastes.

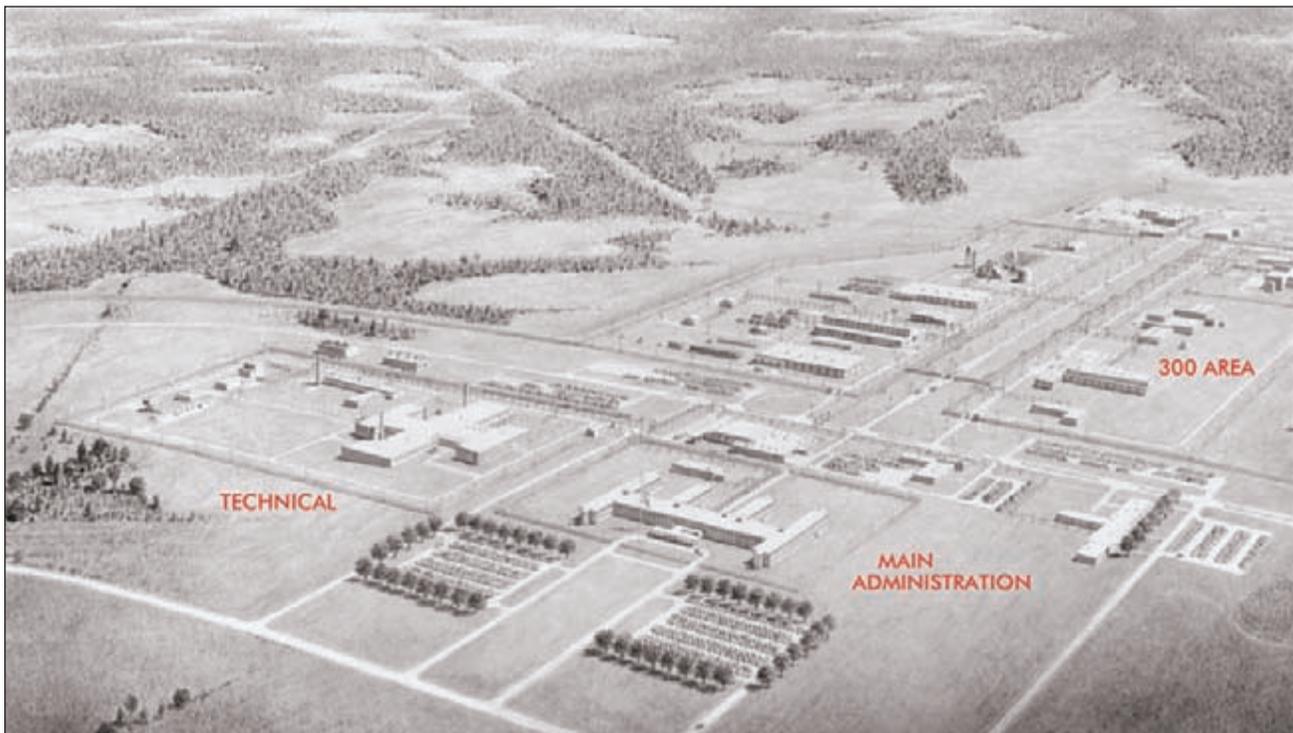
The first generation of buildings at SRP was simply designed using a functional ethic. The AEC's specification that the project's buildings be spartan in their design was a done deal given the climate of American post-war industrial architecture. The choice of building materials, reinforced concrete and transite paneling, were mandated by the

building code. Articulated in reinforced concrete or steel frame with transite panels, the majority were beige or gray boxes built for maximum flexibility and for government service. Their uniformity in color, their number and size, and their geometric forms create a harmonious grouping of buildings within an ordered industrial landscape where form reverberates function. This functional perspective is further emphasized by the placing of the Site utilities aboveground so that massive pipes parallel roads or arch over them. Economically motivated, this design feature has strong visual impact.

### Subcontractors

It was recognized from the start that Du Pont Engineering Department would need supporting organizations to complete the project given its size and schedule. Temporary use was made of the Bush House located on Highway 19 as the Field Construction Office and a tenant farmer's dwelling was adapted for use as the Field Cost Office. The need for immediate construction buildings while Du Pont was organizing called for the hiring of a local architectural and engineering firm, Patchen and Zimmerman of Columbia, SC, to get things off the ground.<sup>55</sup> This firm's design work at the TC Area with its two massive cartwheel buildings and the adjacent cloverleaf created one of the most visually appealing layouts on site.

Engineering and design assistance to Du Pont was provided by the following subcontractors: American Machine and Foundry Company, Blaw-Knox, the Lummus Company, Gibbs & Hill, Inc, and Voorhees, Walker, Foley & Smith. Each of these firms had demonstrated experience in their respective areas and each made significant contributions to the equipment and SRP building stock.



*Architectural Rendering of the Main Administrative Area (700-A) and the Fuel and Target Fabrication Area by Architects Voorhees, Walker, Foley & Smith, ca. 1951*

**Table 2. Subcontractors for Du Pont Project 8980.**

American Machine and Foundry (AM&F) - This firm was charged with the design and fabrication of special mechanical equipment for use in the 100, 200, 300, and 400 area process facilities. AM&F described their firm as manufacturers of machines for industry. In 1950 they were considered the world's largest manufacturer of cigarette and cigar making equipment.<sup>56</sup>

The Lummus Company - This firm was requested to design and partially procure six "GS" units (towers 116' in height) including the DW and finishing plants for the 400 area heavy water production facilities. This firm brought strong petroleum, petrochemical, and chemical experience to the project. Self described as a network of men, minds, and machines that were dedicated to transforming ideas and capital into profit earning processes and equipment, the Lummus Company, international in scope and headquartered in New York, were expert in the design of distillation processes.<sup>57</sup> The 400-area design benefited from an agreement between the Girdler Corporation, which had designed the Dana Plant, and the Lummus Company for the exchange of technological information gained from the Dana Plant that could be applied at SRP.<sup>58</sup>

Blaw-Knox Company - Design of process buildings and equipment required in 200 area facilities, general area facilities (600 area) related to 200 area processes.

Gibbs & Hill, Inc. - Design of steam, water, and electrical facilities for process areas and overall plant. This engineering firm based in New York was subsumed by Dravo Corp of Pittsburgh in 1965 then later sold to Hill International, a New Jersey based firm.

Voorhees, Walker, Foley & Smith - This New York architectural/engineering firm was responsible for the design for all "service" buildings including laboratories and general facilities including roads, walks, fences, and parking areas; the manufacturing buildings in the 300 area; laboratories; some design work for 200 areas and overall site clearance at SRP. It was also responsible for Du Pont's Experimental Station in Wilmington, the MED laboratories at Columbia University and Argonne National Laboratory.<sup>59</sup>

New York Shipbuilding - This firm was responsible for fabricating the five reactor vessels that were transported by barge to the South Carolina site. Known as the NYX Program, this effort produced the cover plate of the reactor vessels known as the "plenum" (a laminated steel plate 19 feet in diameter, four feet thick, weighing about 100 tons, and drilled with 500-4-inch tubes), the reactor vessels, and the primary piping.<sup>60</sup> Organized in 1899, New York Shipbuilding was located on the banks of the Delaware River in South Camden, New Jersey. The firm brought its experience in the fabrication of heavy industrial equipment and machinery to the task. A company history notes that the firm had taken on projects as "a public service where the facilities of the Yard provided the only available means for constructing unusual items. Its location on tidal waters, with weight handling equipment up to 300 tons, makes it possible to load assemblies which may be beyond the size or weight limitations for shipment by rail."<sup>61</sup> These qualities were probably well known to Du Pont who also had a plant in the Camden area.

### Unfolding Scope of Work and Flexible Design

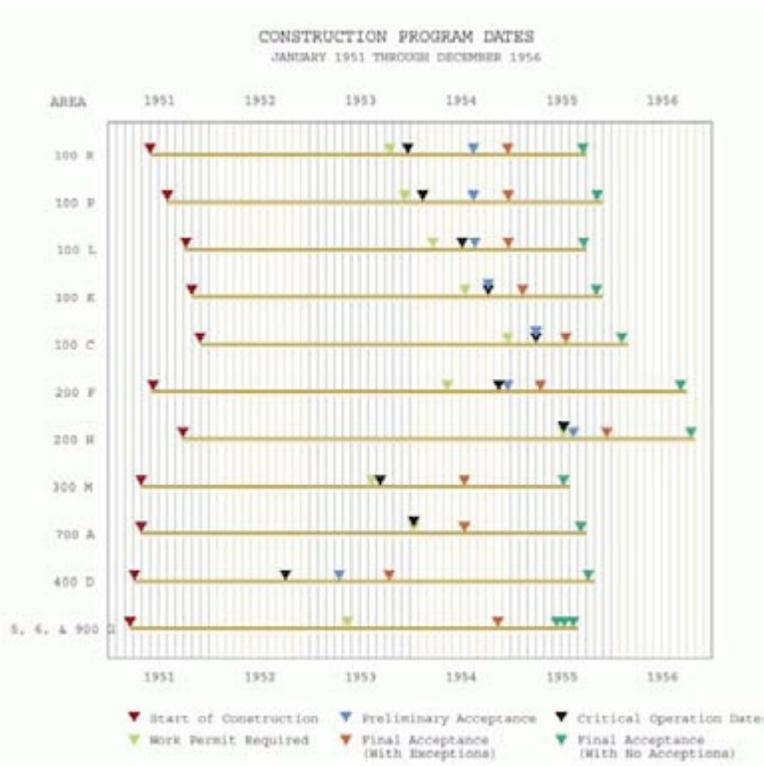
By Hanford standards, the 38 months from start of construction to operation for C reactor at Savannah River was quite slow. However, by the standards of a later generation of nuclear engineers, such a pace would appear incredibly rapid. The placing of R reactor in operation in December 1953, when the conceptual design had only been sketched out in December 1950, seemed to later nuclear specialists a remarkable achievement in engineering and management.<sup>62</sup>

The scale, shape, and funding of the Savannah River Project and the mix of plutonium, tritium, and other radioisotopes to be produced in its reactors was determined by the AEC. The schedule was set by world events. Du Pont’s design team, in association with their primary subcontractors, was responsible for translating the larger conceptual design outline by the AEC into reality within an atmosphere of “urgency and commitment.”<sup>63</sup> Du Pont designers accomplished their goals using a “flexible design” approach. This approach operated at two levels: the first entailed postponing design decisions until the best design could be determined by research or through consultation, and the second was to build in the potential for future design options should AEC policy change.

In the first scenario, Du Pont designers based some design decisions on their experience from previous atomic energy plant construction projects and from scientific research completed at the AEC’s national laboratories. This allowed them to move forward with production in some areas while alternative design choices were researched for others. In the second scenario, postponement of design was necessary as part of the current and future client-contractor relationship. AEC directives, based on Department of Defense guidance on what product or product mix was needed for its weapons program, directly translated into design decisions. Du Pont recognized this as an integral feature of their contract and responded with aplomb to an evolving scope of work. Their ability to do so was characteristic of the firm’s management that had an internal set of departmental checks and balances and well-honed procurement strategies.<sup>64</sup>

#### SRP Operations, 1955 - 1989

As an integral part of the nuclear weapons production complex, SRP’s primary mission has been first to produce tritium, and second to produce plutonium and other special materials as directed by DOE and its precursor organizations.<sup>65</sup> Its role was not one that can



Bar Graph showing the construction schedule and the milestones reached. Source: Engineering Department, E. I. Du Pont de Nemours & Co., Savannah River Plant Construction History, Volume I, DPES 1403, 1957.

be described as one step along a linear process, but rather as one of the hubs of material movement through the complex. Table 3 shows how the site was integrated into the overall nuclear weapons complex and the direction of material flow that established the relationship.

<u>Other Sites Within Complex</u>	<u>Direction of material flow</u>	<u>SRP Area</u>	<u>Type of Material</u>
FMPC and Weldon	To	300 Area	<b>Raw Materials:</b> natural and low enriched uranium for fuel and target manufacture
Oak Ridge Site Y-12 Plant	To	300 Area	<b>Isotope enrichment:</b> highly enriched uranium for fuel and target manufacture
Oak Ridge Site Y-12 Plant	To	300 Area	<b>Isotope enrichment:</b> Lithium for target manufacture
Oak Ridge Site Y-12 Plant	From	400 Area	<b>Isotope enrichment:</b> Heavy Water for deuterium production and deuterium gas
Dana Plant	To	100 Area	<b>Isotope enrichment:</b> Heavy Water for moderator and coolant
FMPC and Reactive Metals, Inc.	From	300 Area	<b>Fuel and Target Fabrication:</b> depleted uranium for fuel
Weldon Spring Plant, FMPC, Oak Ridge Site K-25 Plant, and Paducah Gaseous Diffusion Plant	From	200 Areas	<b>Separations (for raw materials recycle):</b> low enriched uranium for recycle
Oak Ridge Site Y-12 Plant	From	200 Areas	<b>Separations (for raw materials recycle):</b> highly enriched uranium for recycle
Rocky Flats	From	200 Areas	<b>Separations:</b> plutonium metal buttons for pit production
Mound Plant	To	200 H Area	<b>Separations/component manufacture:</b> recovered tritium for purification and reuse
Pantex Plant and Iowa Army Ammunition Plant	From	200 H Area	<b>Separations/component manufacture:</b> filled tritium reservoirs ready for assembly

Source: USDOE Office of Environmental Management, *Linking Legacies: Connecting the Cold War Nuclear Weapons Production Processes to their Environmental Consequences* (Washington, DC: USDOE Office of Strategic Planning and Analysis, 1997), 18-19, 154-155.

### Heavy Water Production and Rework

The Heavy Water plant at SRP (the D Area) used the Girdler Sulfide (GS) process of hydrogen sulfide-water exchange. This portion of the plant, completed in 1952, included 144 process towers ranging from 6.5 to 12

feet in diameter, each 120 feet tall.<sup>66</sup> Between 1952 and 1957, the D Area plant and the heavy water plant at Dana, Indiana, supplied most of the heavy water for the nuclear weapons production complex. A sufficient stockpile of heavy water had been accumulated by 1957 to allow the closure of Dana and of two-thirds of the Savannah River units. The remaining units continued to operate until 1982, primarily to reconcentrate heavy water that became diluted during reactor operations. During its 30 years of operation, D Area produced over 6,000 tons of heavy water.<sup>67</sup>

In the spring of 1953 a small plant was constructed in D Area to produce deuterium gas from heavy water by electrolysis. Some of this deuterium was used at Savannah River in the Tritium facility (tritium reservoirs were actually filled with a mixture of tritium and deuterium), and some was sent to the Oak Ridge Site to be converted to the lithium deuteride used in the secondary assemblies of thermonuclear weapons. A second, larger deuterium plant was constructed in D Area in 1954.<sup>68</sup>

### Fuel and Target Fabrication

The manufacture of early reactor fuel elements, or slugs, was fairly straightforward. Although there had been problems in the early fabrication process at Hanford, the lessons learned there allowed SRP production in the M Area to proceed with relatively few problems. The slugs were solid natural uranium rods about one inch in diameter and eight inches long, clad in aluminum. The uranium rods were fabricated by the FMPC and shipped to Savannah River. The metallurgical structure of the uranium rods was adjusted (first at Savannah River, later at FMPC prior to shipment); the slugs were then sealed in aluminum.

Lithium target slugs were also needed for the production of tritium, and for use as control rods in the reactors. Lithium was sent from the Oak Ridge Site to Savannah River Building 320-M, where it was alloyed with aluminum, cast into billets, extruded to the proper diameter, cut to the required length, and canned in aluminum. The lithium-aluminum slugs were also encased in aluminum sheaths, called raincoats. At Savannah River, tritium was initially produced as a reactor byproduct in the lithium-aluminum control rods. As AEC requirements for tritium increased, reactor elements specifically designed for tritium production were needed. Driver, or fuel, elements of highly enriched uranium were used to provide the neutrons for irradiating the lithium-aluminum target elements. Enriched uranium drivers were extruded in 320-M until 1957, after which they were produced in the newly constructed 321-M, built specifically for this process.<sup>69</sup>

The M Area at Savannah River continued to produce most of its own fuel and target assemblies until the end of the Cold War. Revisions and upgrades were made to the facilities, as needed, one of the most important being the change from solid slugs to tubular elements. The production of solid slugs ended late in 1957. Production in the M Area increased and decreased with the needs of the reactors. The last large increase was in 1983, when the operations in 321-M went to 24 hours a day. Operations fell off as the reactors closed, and for the most part have ceased altogether since 1989, when the last reactor was taken off line.<sup>70</sup> This report provides a more detailed account of SRP's 300/M Area's genesis and operations history in the following chapters.

## Reactor Operations

There were five production reactors operating at the Savannah River Plant during the Cold War, identified as C, K, L, P, and R reactors. The first SRP reactor to go online was the R reactor, which was tested for integrity and operability during the fall of 1953 and brought to criticality in December. The first few months of operation were problematic because instruments triggered frequent automatic power reductions and “scrams,” or unscheduled emergency shutdowns. Improvements to the instrumentation and signal systems mitigated these problems, and the number of scrams, one a day in February 1954, fell to an average of one in three days in May. P reactor was the second to go critical, the event occurring on February 20, 1954. The first irradiated fuel was discharged from R reactor the following June, and all five reactors were operating by the end of March 1955.<sup>71</sup>

Changes were quickly made to both how the reactors operated and to the reactors themselves. Although Savannah River was originally intended as a tritium production site, the lithium-aluminum slugs from which tritium was produced were at first used only as control rods, and tritium was produced as essentially a byproduct of plutonium production. However, AEC requirements for tritium production had increased by 1955, and that year the reactors were loaded in configurations specifically meant to produce tritium. As operators found they could increase the power levels at which the reactors operated, they began adding extra heat exchangers to eliminate the increased heat. C reactor had 12 heat exchangers, but the other four reactors only had six, a necessary shortcoming due to limited supplies of heavy water and vendor production capabilities during the construction period. The number of heat exchangers was increased to 12 on all reactors in 1956, and the original power output of 378 megawatts was increased to 2,250 megawatts.<sup>72</sup> A megawatt, as used in reference to production reactors, is not a measure of electrical generation but of thermal output, a convenient measure of the operation of a reactor.

To further increase the capabilities of the cooling system, a large retention lake was created. Heavy water was used to remove heat from the reactors, and light water from the Savannah River was used to remove heat from the heavy water. The increase in the amount of heat being removed via the heavy water meant a concurrent increase needed to be made in the amount of heat being removed by the light water. Unlike the heavy water, the light water was returned to the river, so a means of dissipating its heat before returning the light water to the environment was necessary. The 2,600-acre P and R (PAR) Pond was constructed for this purpose, and was integrated into the cooling system in 1958. All the cooling water from R reactor then was routed to Par Pond, and a portion of P reactor water was sent out via Par Pond. The new reservoir not only served as a means of cooling water, it also created an additional source of cooling water for P and R reactors, which produced savings in pumping costs. Since they would then be drawing less water from the Savannah River, more would be available for the other three reactors. This and further improvements in the light water circulating system allowed C reactor to be brought to a power level of 2,575 megawatts in 1960, and to eventually reach its all-time peak of 2,915 in 1967.<sup>73</sup>

Another major change in reactor operations came with the use of computers. Computers were first used to monitor the 3,600 reactor process sensors on an experimental basis in K reactor beginning in 1964. The experiment was successful, and the system was added to the three other then-operating reactors (R reactor had been placed on standby in 1964) by the end of 1966. In 1970, a closed loop control system began trial operation at K reactor.

Computers were used to assess information from the sensors, and to make adjustments to groups of control rods based on that information. Using computers to do this was another means of optimizing reactor performance. In the late 1970s, new computer systems were installed to provide safety functions and to monitor and add additional control over reactor operations.<sup>74</sup>

By 1970, the heyday of reactor operations had passed. R reactor was shut down in 1964 due to a lack of demand for reactor-produced products, and L reactor was placed on standby status in 1968 for the same reason. C, K, and P reactors continued to produce tritium, plutonium, and other isotopic elements as directed by the AEC in pursuit of both military and non-military programs.

### Separations

Operations at the Savannah River Plant included two main types of separations: combined plutonium and uranium extraction, and tritium extraction. The former was conducted primarily in the canyons in F and H areas. The F Canyon went into operation in November 1954, and the H Canyon was online the following July. In these two buildings, the fuel elements that came from the reactors were dissolved in acid to separate the uranium and plutonium from waste fission products by chemical extraction in solution. Tritium separations took place in two much smaller areas. Slugs irradiated to produce tritium were initially sent to a building in the F Area, which started operating in October 1955, where the slugs were melted, instead of dissolved, to release the gaseous tritium. After melting, the tritium was purified by a process known as thermal diffusion. Tritium extraction was moved to its current location in H Area a few years later.<sup>75</sup>

The two canyons were originally designed to operate using the Purex process by remote operation and maintenance—which meant that the process areas were not designed to be entered by personnel on a routine basis. During the first year of operation, the F Canyon attained its designed throughput level of three metric tons of uranium per day. Modifications to the H Canyon by applying lessons from early operations in F Canyon allowed H Area operations to see a throughput of seven tons per day.<sup>76</sup>

In early 1957, the F Area canyon was closed down so that substantially larger equipment could be installed to increase throughput, and so that a new facility to convert the plutonium to metal could be built on the canyon roof. This would more than double the capacity of the canyon. The modifications took two years to complete, and the F Canyon went back into operations in March 1959, with a capacity to process 14 tons of uranium each day.<sup>77</sup> As soon as F Area was back in operation, H Area was shut down for conversion to a modified Purex process designed to safely recover enriched uranium from target elements then beginning to be used in the SRP reactors, a change that took only three months. H Canyon was back in operation by June.<sup>78</sup> Many more minor modifications of the canyons followed over the years to allow products other than uranium and plutonium to be recovered, but the fundamental processes for extracting plutonium and uranium remained essentially the same throughout the Cold War.

The first tritium facility was located in Building 232-F. A 232 building was also constructed in the H Area, but it was not completed during the initial phase of construction. The H Area tritium building was outfitted for production in 1956, and by the end of the year two lines were operating. Tritium was originally shipped

elsewhere for placement in the reservoirs, but by 1957 this was completed in the Reservoir Handling Building. In August of the following year, tritium began being recycled in this facility as well. Tritium processing capacity in the H Area facilities was doubled in 1958, and the F area 232 facility was closed that autumn. A new facility, the Replacement Tritium Facility, went into operation in 1993, and it continues to perform the tritium mission today.<sup>79</sup>

### Waste Management

In general, the waste facilities at Savannah River were modeled on those at Hanford but modified somewhat since the radioactivity of the high-level wastes would be greater than those at Hanford. The original tanks each had a capacity of 750,000 gallons, were supported by internal columns, set on top of a steel pan to catch any leaks, and encased in concrete. Separate tanks were provided for high- and low-level wastes, and the high-level units were provided with cooling coils to remove heat generated during the decay of the wastes (cooling coils were added to all these tanks in 1955). Waste evaporation facilities were also provided as a means of reducing waste volume.<sup>80</sup>

Eight such tanks were originally built in the F Area, and four in the H Area (with space for four additional tanks set aside), each buried under at least 9 feet of soil. Four more tanks were approved for H Area in 1954, due to expected increases in the throughput of H Canyon. These four tanks were larger, each having a capacity of 1.07 million gallons, but other details of design were essentially the same as that of the original 12 tanks. They were constructed in 1955 and 1956. By June 1955, the first high-level waste tank was already full, prompting efforts to reduce the volume of waste sent to storage.<sup>81</sup>

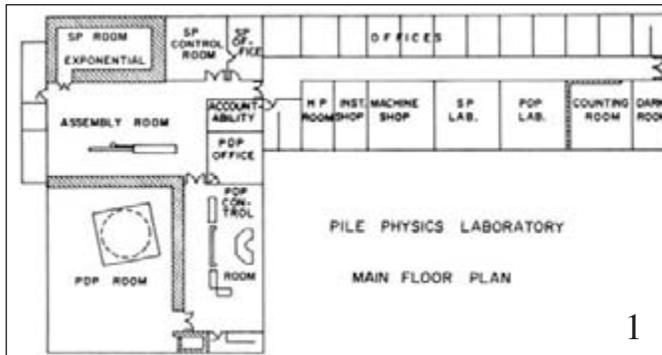
Four single-wall tanks for low-heat high-level wastes were constructed in the F Area in 1958, and four in the H Area in 1962. These tanks have caused numerous problems due to leakage through fine cracks caused by the reactions of the solutions stored there with the materials in the tank walls. However, only one of the original 12 tanks has leaked substantially. Four others have deposits on the outside of the tank walls that may indicate leakage, but no leaks have been found. An additional 27 tanks, each with a capacity of 1.3 million gallons, have been constructed since 1962. These are all similar in design to the initial tanks, except the catch pans extend the full height of the tanks, rather than only five feet, as with the initial design.<sup>82</sup>

Two burial grounds serve as the disposal site for solid wastes. The original burial ground occupied about 76 acres and was used from 1953 until 1972. The second, larger burial ground has been used since 1972; it covers approximately 119 acres. Solid low-level waste from all plant areas were buried there, with special areas set aside for items with higher levels of radiation or with plutonium fission products. The TRU solid wastes were buried in designated sections of the burial ground early on but, by the early 1980s, they were being stored on concrete pads in containers that allowed for later retrieval.<sup>83</sup>

### Research, Development, and Testing

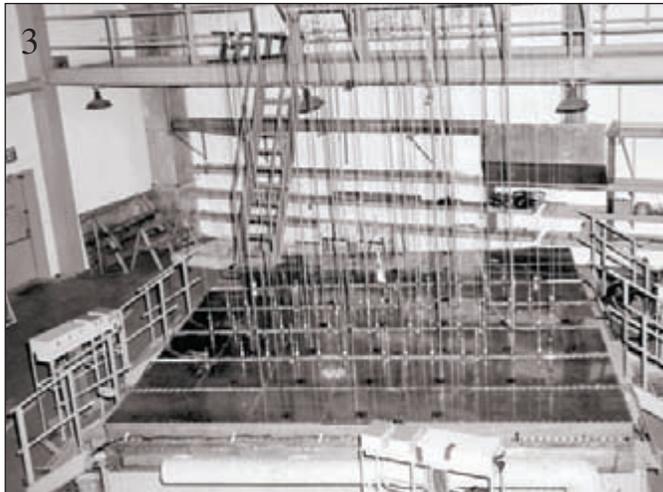
The scientists and researchers at the Savannah River Laboratory (SRL) were responsible for research and improvements in process design in support of SRP's operations. From the beginning, it was noted that neither

## SAVANNAH RIVER'S TEST REACTORS

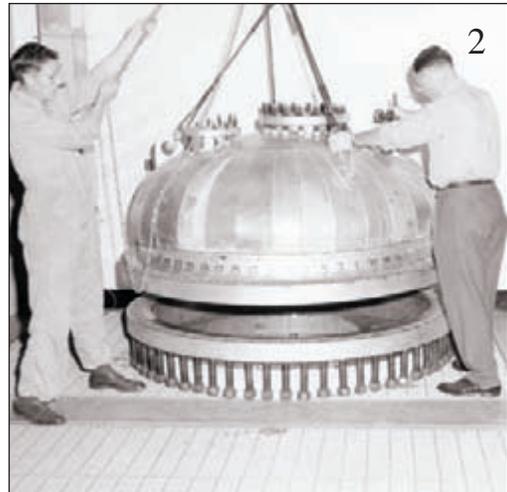


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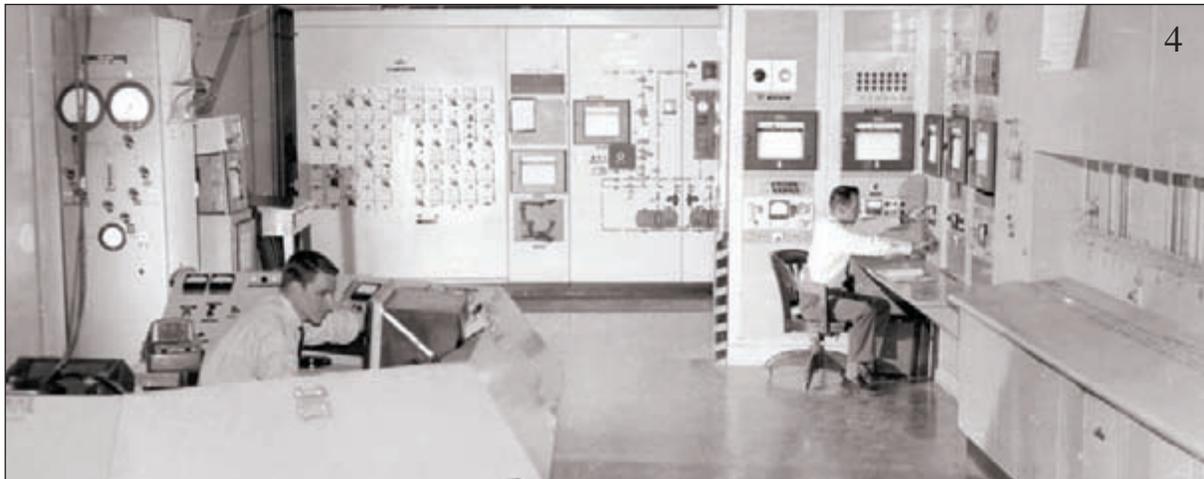
1. Pile Physics Laboratory Floor Plan. This facility housed three test reactors used by SRL researchers. The reactors were placed under the high-hat area of the building. Courtesy of SRS Archives, negative DPSTF-83. 2. Pressurized Subcritical Experiment (SE) test reactor in Pile Physics Laboratory that was used to measure nuclear parameters at high pressures and high temperatures. When built, it was the first of its kind. Courtesy of SRS Archives. The Standard Pile (SP) was designed and constructed by the General Electric Company and was similar to the Thermal Test Reactor at Knolls Atomic Power Laboratory. (Not shown). 3. Fuel elements were placed in the Process Development Pile (PDP), a zero-power test reactor used for physics research. Courtesy of SRS Archives, negatives DPSTF 1-2613, 1-2536. 4. PDP control room. Courtesy of SRS Archives, negative DPSPF-8929-13.



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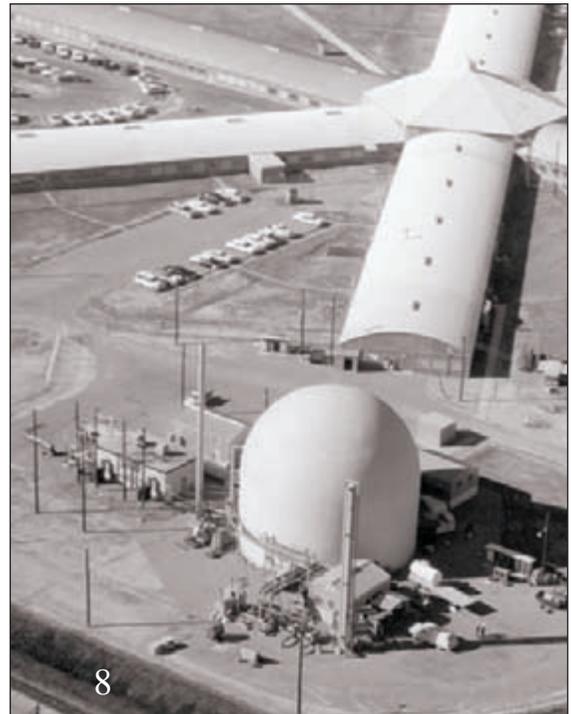
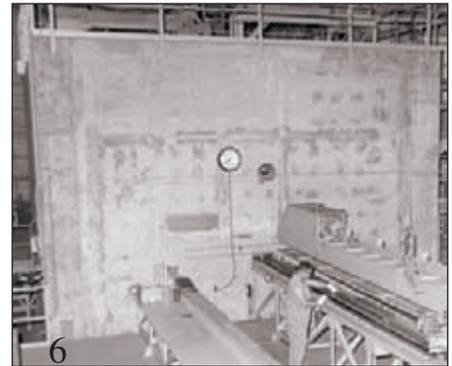


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## PEOPLE, RESEARCH AND DEVELOPMENT



5. Graphite Test Pile Control Room in 305-M. Courtesy of SRS Archives, negative 2023. 6. Face of Graphite Test Pile, Courtesy of SRS Archives, negative 38887-1. 7. Interior of Heavy Water Components Test Reactor. Courtesy of SRS Archives, negative DPSTF-6027. 8. Aerial of Heavy Water Components Test Reactor (HWCTR). This test reactor facility was decommissioned in 1997. Courtesy of SRS Archives, negative 7885-G.



heavy-water moderated reactors, nor the Purex process, had ever been operated on an industrial scale.<sup>84</sup> Also, the versatility of the reactors called for the development of new fuel and target elements. The need to explore the safety and process issues involved called for the installation of laboratory facilities that were fully equipped to allow research and experimentation on a laboratory or micro scale of the processes that were writ large in the process buildings. Consequently, the general laboratory area that was established in A Area was fitted out with sand filter systems and waste treatment facilities. The main research facilities were: the main laboratory; 777-M (later 777-10A), an experimental physics laboratory; process pilot plant facilities CMX and TNX (also referred to as semiworks); 735-A, the Health Physics Laboratory; and 723-A, the Equipment Engineering laboratory.

SRL, the main laboratory, was the focus of separations technology studies, metallurgical research and development, heat transfer studies, and radiation monitoring. Its "High Level Caves" allowed chemical and metallurgical equipment studies on highly radioactive materials behind heavy shielding windows and the Isotopes Process Development Laboratory allowed radionuclides to be encapsulated for use as targets.<sup>85</sup> After 1983, the testing of new fuel and target elements was moved from CMX to SRL. The TNX Semiworks Facility, a pilot plant, was equipped with instrumentation and stainless steel equipment for "cold" processing for chemical engineering studies on a larger scale afforded by the main laboratory facilities.

777-M, later designated 777-10A, the Physics Laboratory, contained three test reactors: the Process Development Pile, the Standard Pile, and the Subcritical Experiment. These test reactors allowed scientists to provide experimental measurements needed to test reactor charge design. While computers would eliminate the need for these test reactors in the 1980s, they were integral to the safe and successful operation of SRP's five reactors, as reactor charges were first tried out in the laboratory environment prior to their use in reactor operation. The reactor designers who used the test reactors in 777-10A used slide rules, mathematical tables, and desk top calculators to make the calculations that would later be generated by computers.

In addition to the central mission of supporting plant operations, a second laboratory system was established at SRP devoted to environmental studies. Savannah River Ecology Laboratory (SREL) was first housed in the Forest Service area but was given a new building in 1977 in A Area where it is surrounded by a complement of environmental laboratory facilities that range from duck pens to greenhouses. SREL and a consortium of other research programs conducted by the Savannah River Forest Station (SRFS), Savannah River Archaeological Research Program (SRARP) and Du Pont conduct research on disparate ecological topics that range from reptile studies, aquatic insects, restoration of degraded habitats, reintroduction of endangered species, and investigations into the Site's cultural history. SRS was designated as the first National Environmental Research Park (NERP) in 1972 as a result of the National Environmental Policy Act (NEPA), the Energy Reorganization Act and the Non Nuclear Energy Research and Development Act. Under these acts, the Site area became an outdoor laboratory set aside for national environmental goals in ecological research, research into the effects of nuclear energy on the environment, and finally, the disposition of this area is reportable to the public.

## DEVELOPMENT OF PEACEFUL USE OF ATOMIC ENERGY, AND ITS IMPACT ON SRP

The tug-of-war between military and non-military applications of atomic energy was present at the inception of the AEC. Senator Brien McMahon of Connecticut championed civilian control over atomic power, and his bill, which became the Atomic Energy Act of 1946, barely beat out others that championed direct Army control.<sup>86</sup> Congress passed the McMahon Bill in July, and Truman signed it into law the following month. According to this act, the AEC was to become effective December 31, 1946/January 1, 1947.

After advice or directives had filtered through the Commission, the Office of the General Manager carried out the directives, with work divided into various divisions, such as Production, Raw Materials, Military Application, Research, Engineering, Biology and Medicine, and Administrative Operations.<sup>87</sup> Even though the AEC's main mission was defense-related (peaceful use of the atom was not even a formal part of the Atomic Energy Act of 1946), civilian control meant that there was always a push at the AEC to justify atomic energy use for non-military purposes.

The early leadership of the AEC certainly demonstrated this interest in the non-defense mission. David Lilienthal, appointed as the first chairman of the AEC by Truman in October 1946, was himself a strong proponent of the peaceful use of atomic energy, taking his case to the public in a number of articles that tried to correct the popular perception that nuclear energy was just for bombs.<sup>88</sup> Among the peaceful uses of the atom listed by Lilienthal were the control of disease, new knowledge of plants and the workings of the natural world, and even incredibly cheap electricity provided by nuclear power plants.<sup>89</sup>

During the Korean War, 1950-1953, little was heard about the peaceful use of the atom. With the close of that conflict, however, President Eisenhower reopened this potential with his "Atoms for Peace" address at the United Nations on December 8, 1953.<sup>90</sup> In direct response to this initiative, Congress passed a new Atomic Energy Act in 1954 that essentially amended the original act to allow for international cooperation in the development of atomic energy and in the civilian use of atomic energy. This allowed domestic utility companies to build and operate nuclear power plants.<sup>91</sup> The 1954 Atomic Energy Act not only broadened the scope of the AEC, but also allowed nuclear energy to be used outside of its purview. While peaceful uses of the atom had always been an interest of the AEC, it was now an official part of its charter.<sup>92</sup>

Purely scientific studies, like the neutrino research conducted at SRP in 1955-1956, were just the beginning of the non-defense mission conducted at AEC facilities. In addition to the Oak Ridge School of Reactor Technology, established in 1950, the AEC sponsored a five-year reactor development program in the mid-1950s, designed to test five experimental reactors for potential use.<sup>93</sup> Out of this work came two broad agendas: the breeder reactor program, which was largely for the Navy, which was keenly interested in nuclear power for ships and submarines; and power reactor research for civilian use.

The use of nuclear power for the production of electricity was first done in December 1951 at the National Reactor Testing Station (later, the Idaho National Engineering Laboratory). In 1955, this capability was expanded to

Arco, Idaho, the first U.S. town to be powered by nuclear energy.<sup>94</sup> The development of commercial power reactors soon spread to selected spots throughout the country, using reactor types that varied from the heavy-water cooled and moderated variety found at SRP and favored by the AEC, to the light-water reactors favored by the Navy. Other reactors, like Hanford's N-Reactor, were dual purpose, capable of both nuclear materials production and power.

The AEC favored the development of heavy-water power reactors, and the SRP was closely involved in the AEC plans to provide this technology to commercial utilities throughout the country. By the late 1950s, heavy-water power reactor studies were commonly produced at the Savannah River Laboratory, and these studies culminated in the design and construction of the Heavy Water Components Test Reactor (HWCTR), built and operated at SRP in the early 1960s.<sup>95</sup> During this same period, and drawing on technical data obtained from HWCTR, the Carolinas-Virginia Tube Reactor, near Columbia, South Carolina, became the first heavy-water moderated power reactor in the U.S.<sup>96</sup>

Despite AEC efforts to push heavy-water power reactors, the example of HWCTR and the Carolinas-Virginia Tube Reactor was not generally emulated in the United States (HWCTR itself was closed down in 1964).<sup>97</sup> As early as 1962 U.S. utility companies showed a clear preference for light-water reactors.<sup>98</sup> These reactors, using pressurized light water, were based on research that came out of the U.S. Navy's reactors program, especially the Navy's light-water reactor at Shippingport. Ironically, the AEC "Atoms for Peace" program, which provided partially enriched uranium to commercial reactors, worked against the AEC heavy-water reactor program: heavy-water reactors might have been more popular if utility companies had been forced to use natural uranium.<sup>99</sup>

Speaking in 1963, Lilienthal described Eisenhower's "Atoms for Peace" initiative as "still alive, but in a wheelchair."<sup>100</sup> While almost surely in reference to the international aspect of that initiative, Lilienthal's comment could be said to apply to the AEC's program to spread heavy-water power reactor technology to U.S. utility companies. Despite considerable research and achievements, the program simply did not progress in the direction intended.

With the reduction of the AEC's military mission in 1964, the stage was set for another series of programs to further develop the peaceful use of the atom. These new initiatives were two-fold: provide isotopic heat sources for the U.S. space program, then becoming a major national concern; and contribute to the transplutonium programs that were pushed by Glenn Seaborg, one of the discoverers of plutonium and chairman of the AEC from 1961 to 1971.

Among the isotopic heat sources produced for the space program was cobalt-60, desirable because it did not produce a decay gas.<sup>101</sup> Another isotopic heat source requested of the AEC was curium, and the production of this material dovetailed with the transplutonium program.<sup>102</sup>

The heavy-water reactors at SRP were pivotal to the transplutonium campaigns, which began with the production of curium during the Curium I program (May-December 1964). The successful attempts to produce curium and other heavier nuclides led to a succession of programs conducted at SRP and coordinated throughout AEC facilities nationwide. These programs included the High Neutron Flux program, both at SRP and at Oak Ridge,

where the High Flux Isotope Reactor (HFIR) began operation in 1965.<sup>103</sup> Curium II (1965-1967) completed the required production of curium, and provided a start for the most ambitious of the transplutonium campaigns: the production of californium. The Californium I program (1969-1970) was designed to produce enough californium to make the isotope available to industry and private sector interests.

The production of californium went hand-in-hand with the Californium Loan Program, sponsored by the AEC to help create a potential industrial and medical market for this powerful neutron source.<sup>104</sup> Despite the best of intentions, however, most of this work was in vain. Even though samples of californium were distributed to willing participants throughout the country and elsewhere in the 1970s, no viable market developed for what was still an expensive isotope with a relatively limited application.

The problems inherent in the Californium Loan Program were ones that plagued other potential applications of atomic energy for non-military use: the expense was simply more than the limited market would bear. The transplutonium programs, while wildly successful as scientific endeavors, failed to take up the slack left by the reduction in the defense mission. In the case of SRP, the production reactors were just too expensive to maintain and operate for the production of non-defense nuclear materials.

When the defense mission went into eclipse in the late 1980s, the non-defense mission, especially that for production reactors, went into decline as well. The close of the Cold War in 1989 solidified the forecast for Savannah River and the other production sites. The rise of environmentalism in the 1970s had already made inroads into nuclear progress, changing American attitudes about the safety of nuclear production plants and nuclear power plants. The promise of nuclear energy was increasingly called into question and new regulators and environmental regulations were placed into effect. While the ramp up of military might under Reagan characterized the start of the decade, by its close, world affairs and changing public opinion created new missions related to environmental clean-up and restoration rather than nuclear materials production.

## ENVIRONMENTALISM, EXPANSION, AND CHANGE AT SAVANNAH RIVER

At the end of the Carter Administration and throughout the Reagan years (1980-1988), there was a resurgence in the production of nuclear weapons materials. This reaffirmation of the nuclear weapons complex was opposed by the environmental movement and then halted by the end of the Cold War. All of this led to conflicting changes at Savannah River Plant, especially in the 1980s. The decade opened with new requirements set by the Department of Defense for plutonium and tritium that directly translated into physical change for the plant. New construction occurred in the process and administration areas to house new programs and personnel, worn facilities were repaired, and technical upgrades were made to operating systems and equipment. Updated security provisions and other physical changes were made with the installation of Wackenhut Services Inc. as the on-site security force.

While SRP expansion was gaining momentum, the environmental movement was also becoming a force that ultimately changed the nature of how the expansion would take place. The accident at Three Mile Island in 1979 drew national attention to the nuclear power industry and reactor safety. The environmental movement hastened change but it was the end of the Cold War in 1989 that shaped new missions for the Savannah River Site.

### Rise of Environmentalism

In December of 1974, the Environmental Protection Agency issued the first sanitary NPDES permit for the Savannah River.<sup>105</sup> While this was largely pro forma, it was a harbinger of things to come. In subsequent years, there would be an increase in environmental regulation on federal lands, and Savannah River was not exempt from this trend. In 1976, the Resource Conservation and Recovery Act (RCRA) gave the EPA authority to enforce environmental laws on all Department of Energy weapons-production sites. As a result, regulatory agencies began to weigh in on the previously “closed” controversy over the relative merits of confinement and containment at nuclear reactors, as well as the need for towers to cool reactor effluent water, a feature that was already standard for commercial power reactors.

Despite a promising collaboration in the early 1970s, environmental regulation and the nuclear community did not have the same agenda, and this became clear during the mid- to late-1970s. Environmental regulators soon moved beyond a balanced concern for the environment and the search for new energy sources, and began to micromanage commercial and DOE facilities solely for the benefit of the environment. The nuclear community, long sustained by public awe of atomic power, now began to find itself under attack by a public that increasingly feared the atom and its residual effects. By the late 1970s, the average environmentalist was antinuclear and environmental regulators were responsive to that shift.

Carter, an “environmental president,” was the first to promote alternative sources of energy, such as solar and wind power. The exploration of such avenues was in fact one of the main reasons for the establishment of the Department of Energy in 1977. This exploration did not extend to the nuclear industry. In addition to banning the reprocessing of spent nuclear fuels for commercial reactors, Carter put a stop to the breeder-reactor demonstration program started by Nixon.

In the early 1980s, President Reagan would attempt to revive both the commercial reprocessing of spent fuels and the breeder reactor program, but by this time interest had flagged both in Congress and within the U.S. commercial nuclear industry. The demonstrated abundance of natural uranium certainly played a role in this shift of opinion, but the biggest change would be the accident at Three Mile Island. Even though it was the worst accident to befall the U.S. nuclear industry, its most disastrous impact was in public relations.<sup>106</sup>

The impact within the industry was great. Many of the energy concerns and conservation programs conceived in the early 1970s were simply abandoned by the late 1970s and early 1980s. Due to environmental regulations and a lessening demand for nuclear energy that was apparent even in 1979, there was less concern about the uranium supply or the discovery of new uranium sources. This spelled the end of projects like NURE, and effectively put an end to any real demand for the reprocessing of spent nuclear fuels for commercial reactors.

Three Mile Island also had an impact on the nation's production reactors. Up to that point, reactor safety had concentrated on the prevention of major accidents, with an acceptance of certain low-level risks as a requirement of the job. In the wake of Three Mile Island, however, more thought was given to low-probability accidents, and to ways of reducing reactor power levels as well as levels of radioactivity. With this new emphasis, "Loss of Coolant Accidents" (LOCA) became a major concern of the 1980s.<sup>107</sup> With LOCA raised to greater significance, there was a corresponding rise in the importance of Emergency Cooling Systems or ECS. The idea behind the Emergency Cooling System was that even after shutdown, the ECS could still supply cooling water to a reactor in the event of an emergency. Throughout the nuclear industry, and certainly at Savannah River, Emergency Cooling Systems were added to reactors or were augmented in the years after 1979.<sup>108</sup>

At the other end of the nuclear process, Three Mile Island also focused attention on the problem of radioactive waste, a dilemma that had never been permanently resolved. There were two types of radioactive waste, low-level and high-level, and both had their unique problems and potential solutions. The Low-Level Radioactive Waste Policy Act of 1980 made every state responsible for the low-level waste produced within its borders. Even though the solution to most low-level waste involved burial, progress in implementing this law was so slow that Congress was forced to amend the act to give several states more time to comply.<sup>109</sup>

The problems associated with high-level waste, especially those of the defense industry, were greater and more intractable. Here, simple burial was not adequate, even though the idea of "geological disposal" of high-level waste had been proposed in underground salt deposits and at Yucca Mountain, Nevada, since at least 1957. Storage in high-level radioactive waste tanks was the preferred method of disposal, but this was recognized to be a temporary solution, and never more so than when the first serious leaks began to compromise the tanks in the early 1970s.<sup>110</sup> By the end of the decade, it was acknowledged that there would have to be some sort of "Defense Waste Processing Facility" to provide a more permanent solution to the problems of storage.

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, also known as the "Superfund" legislation, helped provide the resources to clean up radioactive waste sites around the country. The money came with strings attached. The EPA and the states under authority delegated by the EPA, were given more authority to regulate DOE weapons production sites. The Nuclear Waste Policy Act of 1982, which President Reagan signed into law in January 1983, followed this law two years later. Robert Morgan, manager of Savannah River Operations Office (SROO) between 1980 and 1988, played a significant role in carrying out this act, which required the Department of Energy to establish a long-term site for the permanent disposal of the waste generated by nuclear power plants.

#### Reactor Upgrades, L-Restart, 700 Area Expansion, and Close of Heavy Water Facilities

Only four of the nation's production reactors were in operation in 1980: SRP's P, K, and C and Hanford's N reactor. Plutonium irradiated in N reactor had a high concentration of plutonium-240 that was unsuitable for weapons grade material. This shortcoming could be corrected by blending it with plutonium that had a lower concentration of plutonium-240 and SRP was directed to produce the proper plutonium for blending. A program to recover scrap plutonium at Rocky Flats in particular also had ramifications for SRP Operations. In order to

comply with the change in product needs, SRP was compelled to upgrade and modernize its three operating reactors to allow them to attain higher power levels within shorter cycles. In 1980, one assessment cited the following problems: one-quarter of the reactor heat exchangers were irreparable due to wear and aging; plant facilities had obsolete and worn out instruments and controls, not only in the reactors but in other plant areas as well; that the needed parts could seldom be replaced in kind; and finally there were too few engineers available to design modern equivalents.

To begin to refurbish the Site's facilities, a five-year Restoration Program was established and funded at \$350 million dollars, which was to be dovetailed with a \$300 million dollar Productivity Retention Program by Du Pont. The Restoration Program did not include capital funds needed for new construction such as the Defense Waste Processing Facility (DWPF) discussed below but was the source of funding for L-restart and other upgrades.

By 1983, SRP's engineers were successful in this endeavor as the reactors reached the needed power levels, exceeding expectations. In addition, Du Pont was directed in 1981 to reactivate L reactor, a project that, when completed in 1984, brought L reactor to a safety and dependability level comparable to that of the three reactors that had



*The L Reactor Startup Team was the first management group to be placed under Du Pont's "program management" organizational philosophy. The program management structure was applied plant-wide in 1982. Courtesy of SRS Archives, negative 34872-3.*

remained in operation and had been continually upgraded. Employees in the 300 Area worked a seven-day workweek to keep up with the pace the higher power level in the reactors warranted and in anticipation of L reactor startup.<sup>111</sup> This was a major initiative budgeted at \$214 million, employing a peak workforce of 800 for the renovation efforts, and projected to employ an operating workforce of 400 to run the reactor. It was also the first time that a reactor on standby had ever been refurbished and restarted after being out of service for more than a decade. The reactor was refurbished with new heat exchangers, replacement piping, removal of aluminum-nitrate from the reactor tank and nozzles, and the addition of safety upgrades. The challenges for the Restart Program stemmed from environmental rather than technological challenges.

DOE had completed an internal study of all associated environmental issues involved with the restart program, but chose not to follow the Environmental Impact Statement (EIS) procedure that provides for public hearings. This choice, characteristic of an agency committed to the "need to know" ethic, led to great controversy as local and national environmental groups called for action. Senator Strom Thurmond held local hearings in response as part of the Armed Service Committee's responsibilities that demonstrated the controversy production reactors could evoke by the 1980s.<sup>112</sup> By the close of 1983, it was recognized a lake would have to be constructed, not to impound cooling water, but to cool effluent water leaving the reactor before it would enter the Savannah River Swamp. L Reactor was finally re-started in 1985. It operated less than three years before it was shut down again. During its period of operation, its output was often constrained by the environmental requirement to limit the temperature in L Lake to 90 degrees F in the summer months.



“When we started using these reactors down here, the commercial nuclear business hadn’t been invented yet. We had five reactors going—and commercial power reactors were just a gleam in the scientist’s eye. So everything we did was pioneering—there was no real road map for us.”

- Gerry Merz

Source: “Reacting to Change,” *The Augusta Chronicle*, November 6, 2000.

(Above) Aerial View of P Reactor, 1989. Courtesy of SRS Archives, negative 89-2074-7

(Right) Detailed Aerial View of P Reactor.



(Below) At the close of the decade all five of Savannah River’s reactors were shut down. P Reactor had earned the designation of “World’s Safest Production Reactor” with its impeccable safety record spanning almost three decades.



The process areas were not the only focus of upgrades and new construction in the 1980s. The main Administration area was expanded under a long-range building program that aimed at replacing trailers with administrative facilities.<sup>113</sup> Between 1980 and 1989, nine buildings were added to the Upper 700 Area to ameliorate working conditions. Others were also added to F and H areas. The design and building materials used in this construction was based on obtaining the most space for the available money. The buildings were considered “Local Practice Commercial Standard Office Buildings” and were let to bid as “Design-Build” projects.

Another change in the 1980s was the closure of the last of the Heavy Water production units in 1982. The area was in operation for slightly over 29 years, and had produced a sufficient amount for the needs of the Site’s three operating reactors. Heavy water produced at SRP was sold to foreign countries and domestic consumers for a variety of uses and it, along with timber, was a revenue producer for SRP. For example, the AEC negotiated the sale of 450 tons of heavy water valued at \$42 million dollars in 1969.<sup>114</sup> Over 6,000 tons were produced during D Area’s years of operation.<sup>115</sup>

#### Defense Waste Processing Facility (DWPF) and Naval Fuels Program

Two additional programs were also started in the 1980s concurrent with the restoration program further exacerbating financial and manpower deficiencies. The DWPF got underway as did the Naval Fuels Program.

The long term problem of defense wastes was tackled in the early 1970s when scientists began to research for a solid waste form and a process by which defense wastes could be converted and stored in that form. Glass was selected after much research. The

converted waste once vitrified would be encased in stainless steel canisters for permanent storage. Radioactive materials in the waste tanks were separated from nonradioactive materials through chemical separation processes that allowed the remaining sludge of radioactive materials to be sent to the DWPF Building, a monumental reinforced concrete building about 360 feet in length, 115 feet in width and 90 feet in height, for vitrification. Modeled after the canyons, most of the process work that occurs in this facility is conducted remotely behind heavy shielding. The salt that remains after the separation process is dissolved in water, cesium-137 and strontium-90 are precipitated and filtered then sent over to DWPF as a slurry for vitrification. The remainder, a salt solution,



*Aerial View of DWPF Building 1977. Courtesy of SRS Archives, Negative 97-1527-1.*

is hardened into a cement-like substance by mixing it with fly ash, furnace slag, and Portland cement. The final product called “saltstone” is placed in long concrete enclosures in Z Area. Construction began in 1984 but would be hampered by a lack of funding. The facility was complete in 1989 and actual vitrification began in 1996.<sup>116</sup>

The Naval Fuels program was aimed at converting uranium feedstock into useable fuel in support of the Navy’s nuclear propulsion program. Facility 247-F housed the processes involved in this conversion; it was constructed and deactivated before it went into operation.

The scale of the needed repairs and the new construction engendered by the Naval Fuels and the DWPF facilities was prodigious. Moreover, the timing was awkward. In historian Bebbington’s words, all of these programs were coincident with the first generation of SRP employees reaching retirement age, compelling Du Pont to hire and train a new workforce that was in size and in scope comparable to that of 1950. The major departure in the 1980s from the 1950s was the hiring of outside contractors to fill the needed gaps in the Du Pont team.

A second large change in staffing came about in 1984 when DOE requested that a specialized security force be designated for plant protection that would be able to respond to the changing world order. Prior to 1984, Du Pont handled site security. The Du Pont security force was disbanded and security of the plant was transferred to Wackenhut Services, Inc. in 1984. At this time, physical barriers protecting restricted areas were enhanced and security measures were updated.<sup>117</sup>

### Reactor Shutdowns and Du Pont’s Departure

In 1986, a coolant system assessment indicated a situation could arise in which insufficient amounts of cooling water would be available to the reactors in an emergency situation. The power levels of the reactors were decreased by 25 percent in November of that year. Then, in early 1987, a special panel of the National Academy of Science set maximum reactor power levels to about 50 percent of normal full-power operations.

By this time, Du Pont was clearly interested in pulling out of the atomic energy business. In October 1987, Du Pont formally announced that it would not seek to renew its contract with the Department of Energy, scheduled to expire in early 1989. The rationale for their departure was first that the government no longer appeared willing to guarantee the work and that Du Pont was no longer uniquely qualified to do it. Following almost immediately, there were safety hearings before a House subcommittee.<sup>118</sup> Since the mid 1980s, DOE and its contractors had been under examination in Congress for allegations of poor safety practices at federal nuclear facilities. In hearings before the Subcommittee on Oversight and Investigations of the House Committee on Energy and Commerce, Savannah River was noted for its poor fire prevention procedures. Congress wanted sprinkler systems installed in the reactor buildings, and this was a government expenditure that SROO and Du Pont management had resisted for the simple reason that the all-concrete reactor buildings could not burn.

The concern over fire prevention was eclipsed by a news story reported on the front page of *The New York Times* in 1988. A report, “SRP Reactor Incidents of Greatest Significance” compiled three years before, which detailed and categorized 30 significant incidents in the history of the five Savannah River reactors, was released to the

public. Most of the incidents in the 1985 report had been summarized in an earlier ERDA document. An internal memorandum initially, the report's purpose was to show that the serious reactor incidents at the Savannah River Plant were largely confined to the early years of operation, and that the safety precautions of later decades had greatly reduced the incidence of error. The 1988 report was released in an effort to show that nuclear work was in fact becoming safer. This was not how the information was received, and the national media immediately interpreted 30 "incidents" as "accidents." The outcry over the disclosure led to further congressional hearings over perceived problems at Savannah River. Media attention reached a peak in late 1988.

Responding to ever-tougher safety regulations and a relatively large stockpile of nuclear materials, the Department of Energy shutdown the three remaining reactors, P, K, and L in 1988. The fact that the Savannah River reactors had all been shut down was almost lost in the public debate. Although this shut down was initially intended to be temporary, it soon became permanent. In March 1987, administrative limits were placed on the power levels at K, L, and P reactors due to lingering uncertainties over the Emergency Cooling System (ECS). The following year, all three were shut down due to continuing concerns over the ECS, as well as the possibility of a "loss of pumping accident" or a "loss of coolant accident." K reactor was the first to go, in April 1988, followed in rapid succession by L in June and P in August. The ripple effect of these shutdowns passed through other areas of Savannah River as well. The production of fuel tubes ceased in Building 321-M that same year.

When Westinghouse assumed Du Pont's mantle in April 1989, all the reactors were shut down, and the U.S. had ceased the production of weapons-grade fissionable material altogether. The Site was officially included on the National Priority List and became regulated by the Environmental Protection Agency. In the same year, the Department of Energy formally announced that its primary mission had changed from weapons production to a comprehensive program of environmental compliance and cleanup. In a signal that it was making a break with the past, the facility's name was changed from the Savannah River Plant to the Savannah River Site.

Later attempts to use the reactors for further production were half-hearted. Even though L Reactor was selected as a backup for tritium production (1990), and K Reactor was restarted for power ascension tests (1992), the Department of Energy ordered both reactors shutdown with no capacity for restart in 1993.<sup>119</sup> While the work of nuclear processing continues in the Separations Areas and other places on-site, the SRS reactors themselves are now used to warehouse discarded radioactive materials.

### End of Cold War

The controversy over "Star Wars," not to mention conflicts in Afghanistan and Nicaragua, kept the Cold War fairly warm in the early 1980s. There was also a confrontation over missile deployment in Europe. It was in this context that the L Reactor Restart program was initiated and completed. By the mid-1980s, however, Soviet society was beginning what would turn out to be a permanent thaw. Yury Andropov, Brezhnev's successor, died in 1984 after only a couple of years in power, and was eventually succeeded by Mikhail Gorbachev in 1985. Within a year, Gorbachev became the first Soviet leader to openly admit the weakness of his country's planned economy. More remarkably, he was the first Soviet leader to admit that elements of the old Communist doctrine were wrong or, at

the best, outdated.<sup>120</sup> By the late 1980s, Gorbachev was well into the programs now associated with his name: *glasnost* (openness) and *perestroika* (economic and political restructuring of the old Soviet system).

The nuclear accident at Chernobyl played a role in this development. After first denying the accident, Soviet authorities soon made a complete turn-around, with relatively open disclosure of the problem and solicitations for foreign assistance. The approach to Chernobyl paved the way for new approaches to other problems. In December of 1987, the U.S. and Soviet authorities signed an agreement to eliminate all land-based intermediate range nuclear missiles from Europe. More was to follow in almost dizzying succession. In the fall of 1989, the Berlin Wall, symbol of the Cold War in Europe, was dismantled, permitting a rapid reunification of Germany. Communist regimes collapsed throughout Eastern Europe. Within two years, in 1991, the Soviet Union itself would collapse, leaving the former giant split into its various constituent republics. Gorbachev, now jobless, was forced to bow out to Boris Yeltsin, the president of Russia.

In the decade that followed, there would be additional problems with Russia as its economy continued downward, but there would no longer be the threat of an ideologically fueled nuclear war between the two great superpowers of the Second World War. Now it was the time to take stock of the vast nuclear arsenals in both countries, and initiate a general clean up of forty years of nuclear production. Savannah River Site, under the aegis of the Westinghouse Savannah River Company, was already poised to head in that direction.

The purpose of this chapter was to present a contextual overview of Savannah River Site's Cold War history, from a national and site-wide perspective, with the goal of providing background for the succeeding narrative. The following chapters deal primarily with the history of A Area and the various functions that were housed in that area.

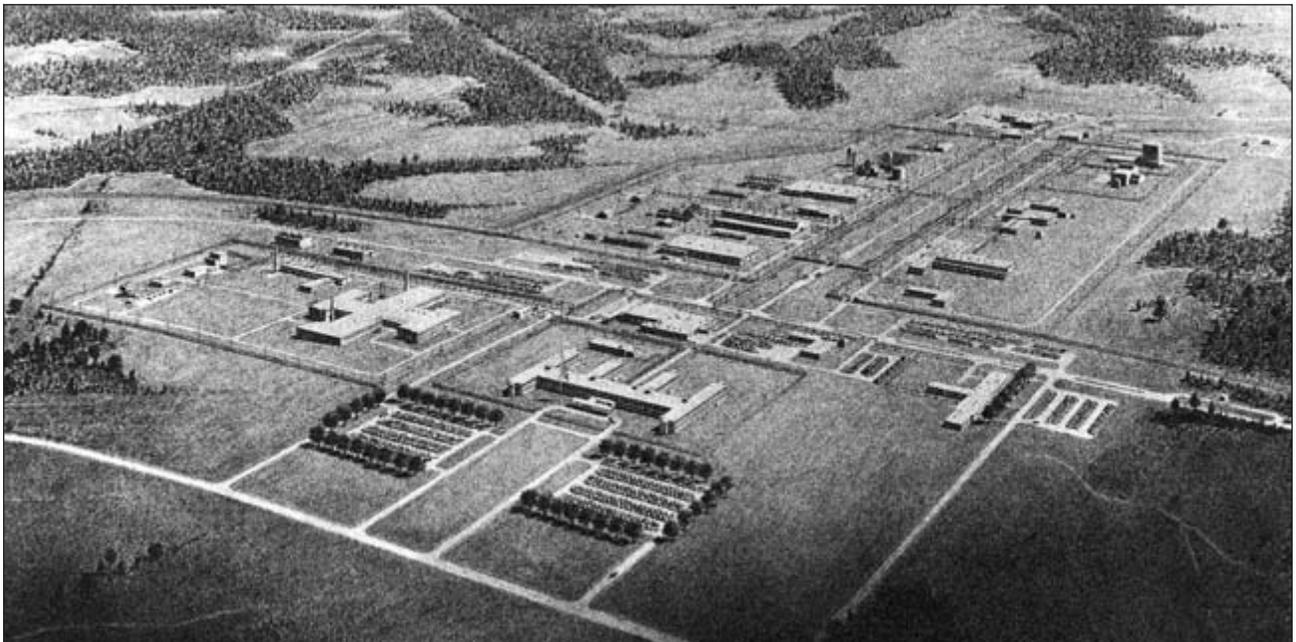


### III. 700/A CONSTRUCTION

While the majority of other building areas in the Savannah River Site (SRP) complex were constructed for a singular purpose, be it the production of heavy water, tritium, or the management of nuclear waste, 700/A Area was built to house a variety of activities. As the base of operations for site management and research and development, not to mention the array of supportive functions necessary in the success of SRP's operation, 700/A Area's significance cannot be understated. It was here that the "big" decisions originated, that groundbreaking scientific discoveries were made, that emergencies were managed, and that the largest concentration of manpower on the plant was based. The Main Administration Building (703-A) alone would provide workspace for over 1,000 employees, including all Atomic Energy Commission personnel on site, as well as the top brass of Du Pont plant management. Thousands more workers filled specialized positions in technical laboratories, maintenance shops, general stores, health physics, medical, employment, communications, patrol, or safety and fire protection. It was "a small city within itself; it was phenomenal. This was the brain center of the site, everything that was required was right here."<sup>1</sup>

#### 700/A AREA DESIGN AND LAYOUT

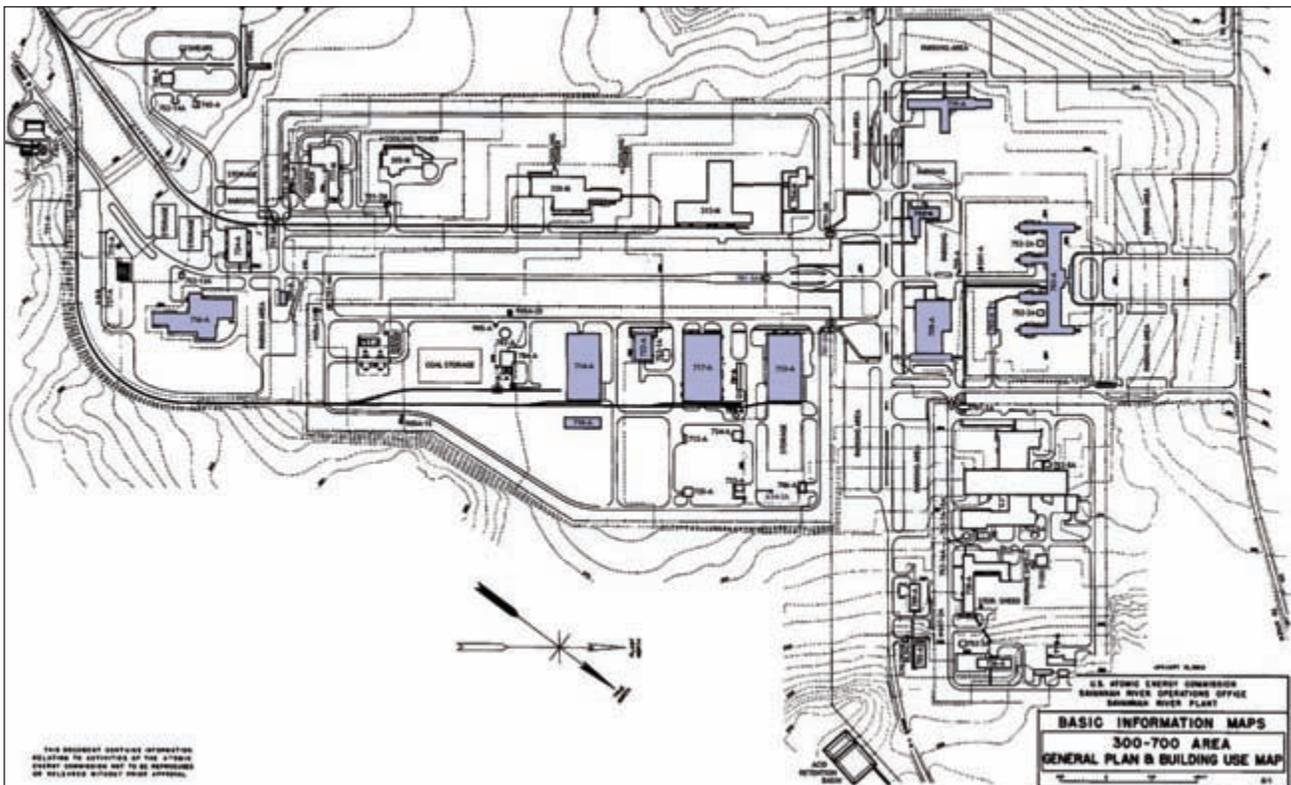
Originally, the 700/A Area was conceived as a separate group of buildings, physically removed from all process operations, in which all plant-wide administration, service and storage facilities would be located. However, shortly after the plant announcement it was decided to combine the fuel and target area, or 300/M Area, with the administration area in one common location in order to benefit from the financial advantage of shared power



*Architectural Rendering of the Combined 300/700 Area by Architects Voorhees Walker Foley & Smith, ca. 1951.*

and service facilities.<sup>2</sup> A. J. McCullin's diary shows that the conceptual joining of the two areas was established early in December of 1950, though working out the many concerns to make this a reality took three additional months of effort.

Early logic placed the 700/A Area at the intersection of Highway 19 from Aiken and then Highway 781 from Augusta, which corresponds to the current entry to SRS at Highway 19 at Barricade 2. This locale changed when design criteria specified that 700/A area should be equidistant from Augusta and Aiken in order to accommodate the workforce of the administration area, which comprised a large majority of the manpower necessary to operate the plant. Safety, a second design criterion, also played a role in determining the eventual location. Operations specified that the administration area be located approximately five miles away from the nearest 100 (reactor) Area as a safety precaution. The decision to combine the 300 and 700 Areas further complicated matters. Due to the existence of 305-M, a major facility within the fuel and target area which would house a graphite test pile, or reactor, additional safety criteria required that the area be located 2 miles from the plant boundary.<sup>3</sup> Unlimited expansion within the specified boundary limits was another factor that ultimately determined that the site of the combined 300/700 Area should be near the plant property line in the northwest sector of the property.<sup>4</sup> Because the selection of this location was tied to property acquisition, the plant boundary was still fluid in early 1951; however, the siting and layout of the 300/700 Area was given final approval on March 13, 1951, McCullin noting in his diary, "we are now ready to do some real work in this area."<sup>5</sup>

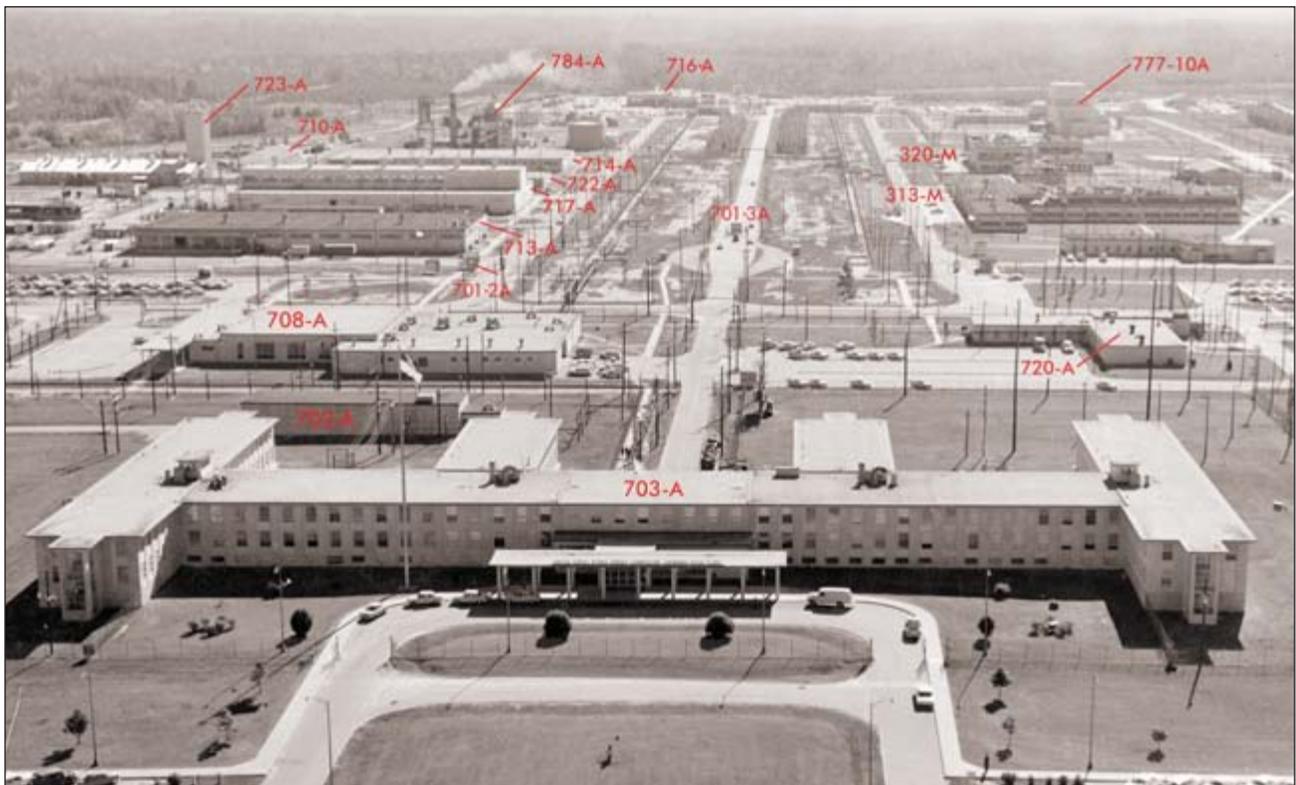


300/700 Area Map, January 1956 (700/A Area buildings eligible for the National Register of Historic Places shown in purple).

The site selected was an agricultural field south of Green Pond Church acquired from Evan Williams, along with the adjacent Williamson tract. The site was leveled and, for the most part, all vegetation was removed. 700/A Area was positioned one mile south of the northern perimeter, in the northwest section of the site along Road 1, a five-mile stretch running east to west from Hwy 125 to Hwy 19. The closest process facility, F Area, lay within 4.5 miles. These distances indicate that the preferred safety distances were not fully met in the layout but came close, particularly with the process building safety distance parameter. The halving of the 2-mile preferred distance to the perimeter was possibly predicated on acquisition concerns and the need to establish this important area simultaneous with the determination of a site boundary.

Construction of the 300/700 Area began on May 28, 1951 as part of Project 8980, Du Pont's internal project number for the Savannah River Plant. The area was laid out in a crisp, almost military arrangement, roughly U-shaped with the bottom of the "U" facing north. Roads A-1 and D, along with their parallel steam and power lines, divided the area into three rectangular sections.

The 700/A Area occupied both the northern base and eastern leg of the "U," which are referred to correspondingly as Upper and Lower 700, and within which there are three fence-enclosed groups defined by functional category – administration, technical, and service and storage. The layout of 700/A remained virtually unchanged until the early 1980s



1955 view of 300/700 Area, Main Administration Building (703-A) in foreground.

Upper 700 was oriented on an east-west axis, bordered to the north by Road 1 and to the south by Road A-1. It contained structures associated with site-wide administrative operations as well as technical research facilities; its plan was clearly defined by these discrete functions. Two buildings, the Main Administration Building and the Main Technical Laboratory served as the dual centerpieces from which all purpose-related buildings radiated.

The administrative component of Upper 700 occupied the western half of the rectangle and originally consisted of five buildings: 702-A (Telephone Building), 703-A (Main Administration Building), 708-A (Cafeteria), 719-A (Medical/Employment Building), and 720-A (Patrol Headquarters). Of the five, only 702-A and 703-A were located "within the fence."

The research component of Upper 700 was situated in the eastern half of the rectangle with the Technical Laboratory occupying a significant portion of the area. Four other buildings are original to that section as well, including: 735-A (Health Physics Headquarters Building), 736-A (Health Physics Calibration Building), 785-A (Cooling Tower), and 789-A (Refrigeration Building). This area and its buildings are not functionally related to SRP administration and will be treated in the subsequent thematic studies dealing with research and development or site infrastructure.

View from Roof of Main Administration Building (703-A) of "Augusta" Parking Lot, 1957.



Because Upper 700 housed so many employees who would be on-site during office hours, two large parking areas were constructed on the frontage of the area along Road 1. The lots were named “Augusta” and “Aiken,” which corresponded to the geography of their situation, “Augusta” to the west in front of the Main Administration Building and “Aiken” to the east in front of the Main Technical Laboratory. The lot names are also suggestive of the sociological relationship between the residents of the two principal towns where SRP employees made their homes.

The Lower 700 enclosure was bounded to the north by Road A-1 and to the west by Road D, which bisects the 700/300-Area and terminated at its intersection with Road A-1 behind the Administration Building. Buildings in this area were arranged on a north-south axis perpendicular to Upper 700 and served as support facilities for the 300/700 Area and in some cases for the entire site. Buildings original to this area included: 614-1A (General Monitoring Building), 706-A (Field Office), 709-A (Safety and Fire Protection), 710-A (Electric Lineman’s Headquarters), 711-A (Steel and Pipe Storage), 712-A (Lumber Storage), 713-A (Central Stores), 714-A (Spare Machinery Storage), 715-A (Gasoline Station), 716-A (Automotive Repair Shop), 717-A (Maintenance Central Shop), 722-A (Instrument Shop), 724-A (Labor Office, Tool Storage, Rigger’s Loft), 725-A (Paint Shop), 733-A (Flammable Storage), 734-A (Compressed Gases Storage), 740-A (Salvage and Reclamation Building), 743-A (Sandblasting), 782-A (Reservoir), 784-A (Boiler House). Additionally several guardhouses were built in the area as components of Project 8980, including 701-2A and 701-3A, which were located at the northern entrance of Lower 700 on Road A-1. Over the next three decades, Lower 700 experienced little change. A handful of buildings were added to the original layout as needed, mostly small structures with the exception of 723-A, a large engineering facility erected to the rear of 722-A in 1956.

Occupying a space in the far northeastern corner of Lower 700 is the Savannah River Ecology Laboratory (SREL), a research unit of The University of Georgia, funded primarily by the Department of Energy Office of Biological and Environmental Research. SREL was founded in 1951 with the announcement of the plant opening; however, the current facilities were built out from the late 1970s to early 1980s. The facility consists of a large irregular-plan, brick research laboratory with several satellite laboratories and support structures surrounding the main building.

A sub-station, located at the approximate geographic center of Lower 700, supplied power to the 300/700 areas. A-Area’s boiler house (784-A), located just south of the power station, supplied steam for heating while pumping facilities, located in the same facility, fed underground lines to supply water for general and domestic services and fire protection to the 300/700 Area. Chilled water for air conditioning was provided by refrigeration equipment located in 789-A. “The use of air-conditioning in the Savannah River Project will fall generally under two headings. One will be mandatory air-conditioning for process reasons, and the second will be for providing optimum working conditions which result in high employee morale and improved productivity.”<sup>6</sup>

At the southern end of Lower 700, a small sewage treatment complex was constructed to dispose of 700 Area sewage. Original but now abandoned elements include the sewage station (607-1A), consisting of two above ground tanks used to hold sedimentation and two small metal panel support buildings, as well as 607-2A (sewage lift station) and 607-3A (comminutor). The A Area railway system, with spurs to the coal storage yard, boiler

house and primary storage buildings, consisted of approximately 3000 feet of track running through the center of Lower 700, parallel to Road D, and terminating at Central Stores (713-A).

Table 4 lists all of the buildings that were components of the 1950s 700/A Area layout; however, not all of these structures will be treated in this thematic study. This study treats only those buildings related to the administration of the site that were extant and eligible for listing in the NRHP as contributing resources to the Savannah River Site Cold War Historic District at the beginning of this documentation effort. Those buildings in Table 4 that are NRHP eligible, but related to Research or Infrastructure, will be treated in subsequent thematic studies. The remaining structures in Table 4 were deemed ineligible due to alteration or may not have been extant at the time of evaluation.

**Table 4. Original 700 Area Facilities.**

Building. No.	Name	Designer(s)	Project No.
607-1A	Sewage Treatment Plant	VWF&S	8980
607-2A	Sewage Lift Station	VWF&S	8980
607-3A	Comminutor	VWF&S	8980
614-1A	General Monitoring Building	VWF&S	8980
701-1A, 2A, 3A, 4A	Gate House	VWF&S	8980
702-A	Telephone Building	VWF&S	8980
703-A	Administration Building	VWF&S	8980
705-A	Motor Pool Office	VWF&S	8980
706-A	Field Office	(T.C.8314-M)	
708-A	Cafeteria	VWF&S	8980
709-A	Safety and Fire Protection	VWF&S	8980
710-A	Electric Linemen's Headquarters	(T.C. 8320-M)	
711-A	Steel and Pipe Storage	VWF&S	8980
712-A	Lumber Storage	VWF&S	8980
713-A	Central Stores	VWF&S	8980
714-A	Spare Machinery Storage	VWF&S	8980
715-A	Gasoline Station	VWF&S	8980
716-A	Automotive Repair Shop	VWF&S	8980
717-A	Maintenance Central Shop	VWF&S	8980
718-A	Mechanics Hand Tools	VWF&S	8980
719-A	Medical and Employment Building	VWF&S	8980
720-A	Patrol Headquarters	VWF&S	8980
722-A	Instrument shop	VWF&S	8980
724-A	Labor Office, Tool Storage, Rigger's Loft	VWF&S	8980
725-A	Paint Shop	VWF&S	8980
727-A	Transformer Storage	VWF&S	8980
728-A	General Storage Building	(T.C.8300-M)	
729-A	Propane Storage	VWF&S	8980

Building. No.	Name	Designer(s)	Project No.
733-A	Flammable Storage House		8980
734-A	Compressed Gases Storage		8980
735-A	Health Physics Headquarters Building	VWF&S	8980
736-A	Health Physics Calibration Building	VWF&S	8980
740-A	Salvage and Reclamation Building	VWF&S	8980
741-A	Salvage Yard		
743-A	Sand Blasting	VWF&S	8980
751-A	Primary Substation	Gibbs & Hill	8980
752-A	Secondary Substation	Gibbs & Hill	8980
	Main Technical Laboratory, SRNL	VWF&S	8980
776-A	Waste Concentration Building		
782-A	Reservoir	Gibbs & Hill	8980
784-A	Boiler House	Gibbs & Hill	8980
785-A	Cooling Tower	Gibbs & Hill	8980
789-A	Refrigeration Building	Gibbs & Hill	8980

(Source: Engineering Department, Du Pont 1957).



Aerial View of 300/700 Area, ca. 1990.

Beginning in 1980 with the initiation of a five-year Restoration Program, budgeted at approximately \$350,000,000.00, a considerable amount of new construction was undertaken in the administrative section of Upper 700. The most obvious change was to the Road 1 frontage of the area where three buildings (703-41A, 703-42A, 703-46A) were constructed obscuring the façade of main administration building, up until that point the frontispiece of SRP. Other buildings were scattered around the area according to functional need with little regard to design or aesthetic. The majority of later buildings are box-like, rectangular in plan and are either brick constructions or utilize an exterior finish insulation system. The final blow to VWF&S's original design plan came during the 1990s with the placement of modular office buildings interspersed among the permanent structures. Lower 700, however, experienced minimal impact from the 1980s Restoration Program with a few small-scale buildings constructed, for the most part in similar alignment with the original Project 8980 buildings.

## CONSTRUCTION PARAMETERS

At an early date the Atomic Energy Commission informed the Du Pont Company of its preference for Spartan simplicity in building design. This policy required Du Pont and its subcontractors to design facilities with maximum economy consistent with functional requirements and to standardize designs and specifications for buildings and associated facilities to achieve uniformity.<sup>7</sup> VWF&S, headquartered at 101 Park Avenue, New York City, was chosen as the plant's Architectural & Engineering firm for its experience in industrial architecture particularly laboratory design and possibly for its work in the early 1940s when they renovated Columbia University's laboratories for atomic energy research. Perry Coke Smith was the firm's lead architect on the SRP project.<sup>8</sup>

### Blastproof Construction



Meetings between Du Pont, the AEC and other sub-consultants were ongoing in November and December of 1950. Drexel Institute of Technology's Professor H. L. Bowman and Du Pont engineers tackled the building criteria needed to protect the proposed facilities from atomic blast and to allow it either wholly or in part to operate in the face of such an attack. Three types of construction were developed and this classification system was codified and placed into a supplement to the Uniform Building Code published in January 1, 1946 that was adopted for plant construction use.

Class I buildings were described as massive, reinforced concrete, monolithic structures with a static live load of 1000 lbs per square foot.<sup>9</sup> Their exterior walls and roof were to be poured, reinforced concrete with a supporting frame of reinforced concrete or structural steel. Critical process buildings were to be constructed of blast proof materials throughout. Reinforced concrete construction was selected for its ability to take stress, the

protection it affords from alpha and gamma rays and intense heat, and the speed and economy it would lend to construction.

Class II buildings were considered to be of friable construction with a structural frame of reinforced concrete or structural steel and expendable wall materials. If bombed, the structural frame remained intact while the exterior walls were considered expendable. Fifty percent of a building's exterior wall area had to be covered with friable materials to suit this class of construction. Roofs were poured concrete and designed for a live load of 150 pounds per square foot; all floors were of poured reinforced concrete. If equipment or areas in these buildings required further protection concrete blast-resistant walls were added or floor levels were placed below grade.

Extensive tests were undertaken at Sandia National Laboratory in New Mexico to identify possible friable wall materials by exposing the candidate materials to TNT explosions that simulated atomic bomb blasts. After analysis, Transite™, a short fiber, cement-asbestos siding material, was chosen because it broke into small pieces on impact.<sup>10</sup>

Transite™ was sold in the form of flat and corrugated sheets made of asbestos-reinforced cement.<sup>11</sup> As an exterior sheathing it reduced the load bearing factor considerably from 120 to 20 pounds per square foot when compared to masonry walls and it was further desirable as it did not rot, rust, burn and was impervious to insects and rodents.<sup>12</sup> Advertised as smart, modern, and economical in period advertisements, Transite™ boards became the primary building material for exterior wall sheathing between 1950 and 1956 at SRP. The presence of the smooth, natural cement color exterior board is the hallmark of the Site's first generation of buildings for this class of construction.

Class III construction was considered normal construction carried out under the building code. All service buildings, shops, and change houses were considered expendable. This category included a plethora of prefabricated metal buildings manufactured by Butler, Hudson, Mesker, and other firms.

Examples of Class I, II, & III constructions can all be found in 700/A Area. Three buildings, 702-A, 703-A, and 720-A, each had areas that employed Class I construction technique for critical areas such as shelters, control rooms, or communication facilities.

**CORRUGATED TRANSITE** ... for Curtain Walls

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**Asbestos Corrugated Transite reduces load-bearing factor 83% on new power plant addition! Transite sheets give attractive, streamlined appearance... and they can't rot, rust, or burn.**

• Here's a case in which a unique form of asbestos wall construction solved a tough building problem. The addition planned was to be almost twice the height of the original building, yet when the new joined, existing foundations were to be used. This meant that the new bearing wall with all its extra height should weigh no more than the old wall.

After careful study, it was decided to use the Johns-Manville Industrial Curtain Wall, a system of dry wall construction which combines J.M. Corrugated Asbestos Transite with J.M. Transite (insulating board) laid with fibboard.

This type of construction, compared with solid masonry, reduced the load-bearing factor from 120 to 20 pounds per square foot! It also provided fire protection, insulation, and permitted the use of less extensive jolings and foundations for the rest of the building.

Architects and engineers are constantly discovering new uses for J.M. Corrugated Asbestos Transite, one of the least of which is its surprisingly effective function in attractive, modern design.

Send for new brochures which may help you on your next project. Johns-Manville, Dept. 299, New York 16, N.Y.

**HORIZONTAL JOINT SECTION**

Labels in diagram: TRANSITE CORRUGATED TRANSITE, HORIZONTAL JOINT BATTERY, LEAD HEAD BOLT.

**EASY TO BOLT TO STEEL**   **EASY TO SAW**   **EASY TO DRILL**   **EASY TO NAIL TO WOOD**

**Johns-Manville** *Asbestos* **CORRUGATED TRANSITE**

*Magazine Advertisement Touting the Advantages of Building with Corrugated Transite™, ca. 1950.*

### Standardized Construction in a Unique Industrial Context

As noted, facility designers sought to standardize design as a cost saving measure, to promote uniformity, and to aid the construction force in adhering to a tight construction schedule. Building types allowed replication and as most of the building areas were to be self-sufficient, this potential was essential. The reactor areas are a good example of this standardization.

Between 1950 and 1956, Du Pont and VWF&S created a repertoire of types, mostly in the service or support categories, that could be duplicated when and where needed. In terms of the design process, Du Pont's design division gathered design data and that data were transferred to VWF&S for resolution into a building or facility. Consultation between the architectural firm, the Wilmington Office, and the on-site engineers was undertaken via teletypes, telephones, and face-to-face meetings. Power-related and water treatment facility types were handled by Gibbs and Hill. The use of Class II construction also played into standardized construction. Transite™ walls offered unlimited potential for door openings and fenestration so that standard building types could be easily altered to suit new needs.

The numbering applied reflected the building types and their function to a large degree. The 700 building series, for example, referred to facilities associated with administration and support functions. In this series, buildings duplicated often such as gatehouses were all referred to as 701 buildings; a suffix such as the -5A in 701-5A indicated its geography and the number of gatehouses in a building area. This numbering system allowed for expansion should more of a given building type is needed. With the exception of the 700 and 600 buildings, the hundreds place in each buildings' three digit number indicated a process area. The remaining places in the numerical label indicated a building's function. Thus, a powerhouse in a 100 Area was 184-R, a cooling tower 185-R. The same building types in the 700 Area would have been labeled 784-A and 785-A.

### Functional Design

SRP encapsulated a multi-purpose factory system that produced more than one product. Despite its unique mission and the safety, security, and environmental issues it imposed, the layout of individual building areas and their architecture had their roots in American industrial architecture and factory design. Industrial architects in the first half of the twentieth century adhered to the tenet that form should follow function, espoused by modernist Le Corbusier. Reinforced concrete became the preferred building material for factories and industrial architects such as Albert Kahn championed the need for the integration of specialists such as process engineers in the development of well-designed factories. Buildings constructed within this functional vocabulary were enclosed by smooth planes, featured industrial materials, and eschewed decoration.<sup>13</sup>

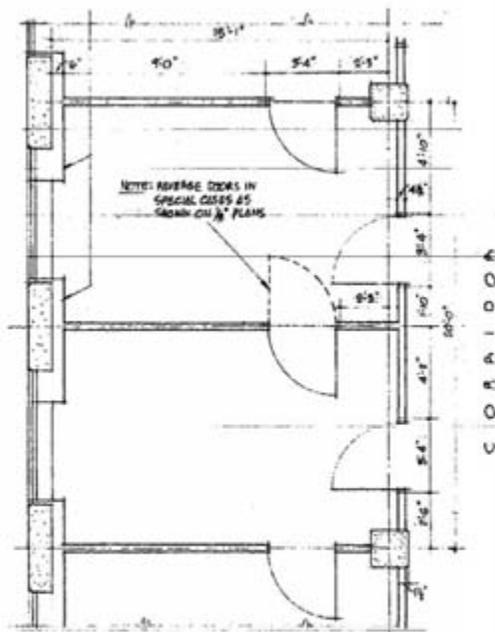
By World War II, a factory type had emerged that was a mechanical unit for the production of goods. It typically had a steel superstructure, a flat roof, and panel walls. Its interior was an open bay characterized by uninterrupted floor space with support and personnel related use areas on a mezzanine level, penthouses, or in wings. Single story in height, windowless, and boxlike, the factory building typically had suspended walkways that connected

to mezzanines where restrooms were located. The walkways allowed non-manufacturing employees and visitors entry without disturbing the work process. Conveyors, winches, and other handling mechanisms were also suspended to keep the floor clear.<sup>14</sup>

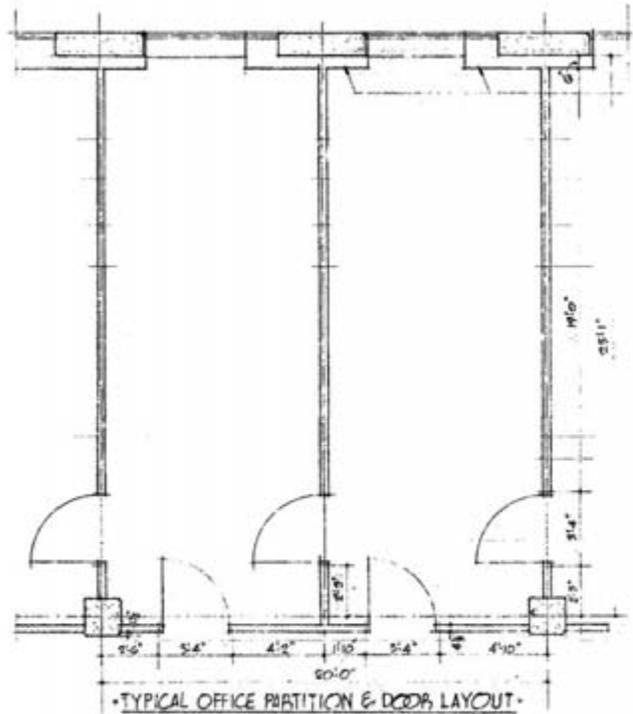
Successful industrial architecture provided for the efficient movement of materials through a production process and enabled employees to perform their work efficiently: “from parking space, to changing room, to machine station to cafeteria and back.”<sup>15</sup> This called for analyses of the flow of materials to determine equipment layout and its consequences for the building envelope. Design would begin with the process line, move to the support and storage facilities, and end at the parking lot. Should a shift system of work be employed, the number of parking spaces needed for efficient flow of personnel was doubled. Materials handling and personnel flow were charted as architects and engineers grappled with the best “flexible” design to allow for changes in process that may cause change in necessary manufacturing equipment and/or its arrangement and for future factory expansion. “Flexibility” was the key design guideline.

The use of “functional design” was second nature to Voorhees, Walker, Foley & Smith (VWF&S), a leader in industrial design for laboratories. VWF&S had an impressive number of projects such as the Murray Hill Bell Telephone Building that included a cyclotron building at Columbia University and Argonne National Laboratory in the atomic energy field. Its credits in 1954 included laboratories and factory facilities for NY Telephone, Ford, GE, IBM, R.H. Macy, Proctor & Gamble, General Foods and others.

*Drawing Detail Showing Typical Office Modules for Main Administration Building, (Drawing W155220, Savannah River Site, Project 8980, Voorhees Walker Foley & Smith)*



• TYPICAL OFFICE PARTITION & DOOR LAYOUT •  
 • TYPE 'A' MODULE - 1ST & 2ND FLOORS •  
 SCALE: 1/4" = 1'-0"



• TYPICAL OFFICE PARTITION & DOOR LAYOUT •  
 • TYPE 'B' MODULE - 1ST & 2ND FLOORS •  
 SCALE: 1/4" = 1'-0"



The New York firm was also responsible for the site plan and design of Du Pont's Experimental Station in Wilmington, Delaware, described as a "campus of six modern laboratory establishments" and an additional campus for Du Pont's rural headquarters at Milford Crossroads near Newark, Delaware. The laboratory complex was designed using the flexible-modular concept: "VWF&S studied the particular requirements of each of the six participating (Du Pont) departments, then 'added up the modules' in every instance and juggled them around and around - rather like children's blocks- until they all slipped into the one best possible combination for each case."<sup>16</sup>

For Du Pont's rural headquarters project, VWF&S, under the guidance of senior partner, Perry Coke Smith, designed immense H-shaped buildings that pivoted on a "space unit" design. This design hinged on a unit of space - a floor of a wing - that could be subdivided in whatever manner the client needed. Given this experience with specialized building types and a functional modular approach and their corporate experience with Du Pont, VWF&S was an easy choice as Project 8980's subcontractor for architectural and engineering.

The first generation of buildings at SRP was simply designed using the functional ethic described above. The AEC's specification that the project's buildings be spartan in their design was a done deal given the climate of American post-war industrial architecture. The choice of building materials, reinforced concrete and Transite™ paneling, were mandated by the building code. Articulated in reinforced concrete or steel frame with Transite™ panels, the majority are beige or gray boxes built for maximum flexibility and for government service. Their uniformity in color, their number and size, and their geometric forms create a harmonious grouping of buildings within an ordered industrial landscape where form reverberates function. This functional perspective is further emphasized by the placing of the Site utilities aboveground so that massive pipes parallel roads or arch over them. Economically motivated, this design feature has strong visual impact.

As-built drawings show that the architects developed "typical modules" for each building's elevations when possible. Using structural columns, reinforced concrete, and Transite™ panels in which windows could be placed as their main vocabulary, the architects repeated the typical exterior module as many times as necessary to create an envelope for the space required. This approach plus the use of neutral colors produced the desired effect - a rhythmic feel to the buildings and symmetry that contributed to their anonymous and functional character.

## 700/A AREA NRHP ELIGIBLE BUILDINGS

700/A Area was built out between 1951 and 1955 as part of Du Pont Project 8980. The following section treats the construction of SRS Cold War Historic District NRHP-eligible buildings in 700/A Area, their purpose and architectural description as-built.<sup>17</sup>

**Table 5. National Register Eligible Facilities Associated with Administration, Safety, Security, or Support**

Building. No.	State Survey Number	Common/Historic Name	Completion Date	Status	
				Individually Eligible	Contributes to District
614-1A	R/03/2308	General Monitoring Building	1953		X
701-2A	R/03/2312	Gate House	1952		X
701-3A	R/03/2313	Gate House	1953		X
702-A	R/03/2315	Telephone Building	1953		X
703-A	R/03/2323	Administration Building	1953	X	X
708-A	R/03/2326	Cafeteria	1951		X
709-A	R/03/2327	Safety and Fire Protection	1953		X
710-A	R/03/2328	Source Calibrations/Electric Lineman's Headquarters	1953		X
713-A	R/03/2334	Stores	1953		X
714-A	R/03/2335	Materials Access Center	1953		X
716-A	R/03/2338	Automotive Repair Shop	1953		X
717-A	R/03/2341	Maintenance Building	1953		X
719-A	R/03/2343	Medical/Employment Building	1953		X
720-A	R/03/2346	Wackenhut/Patrol Headquarters	1953		X
722-A	R/03/2353	Instrument Shop	1952		X
661-G	R/03/2465	Rifle and Pistol Range	1954		X
701-2G	R/11/0393	Barricade 5, Gatehouse	1953		X

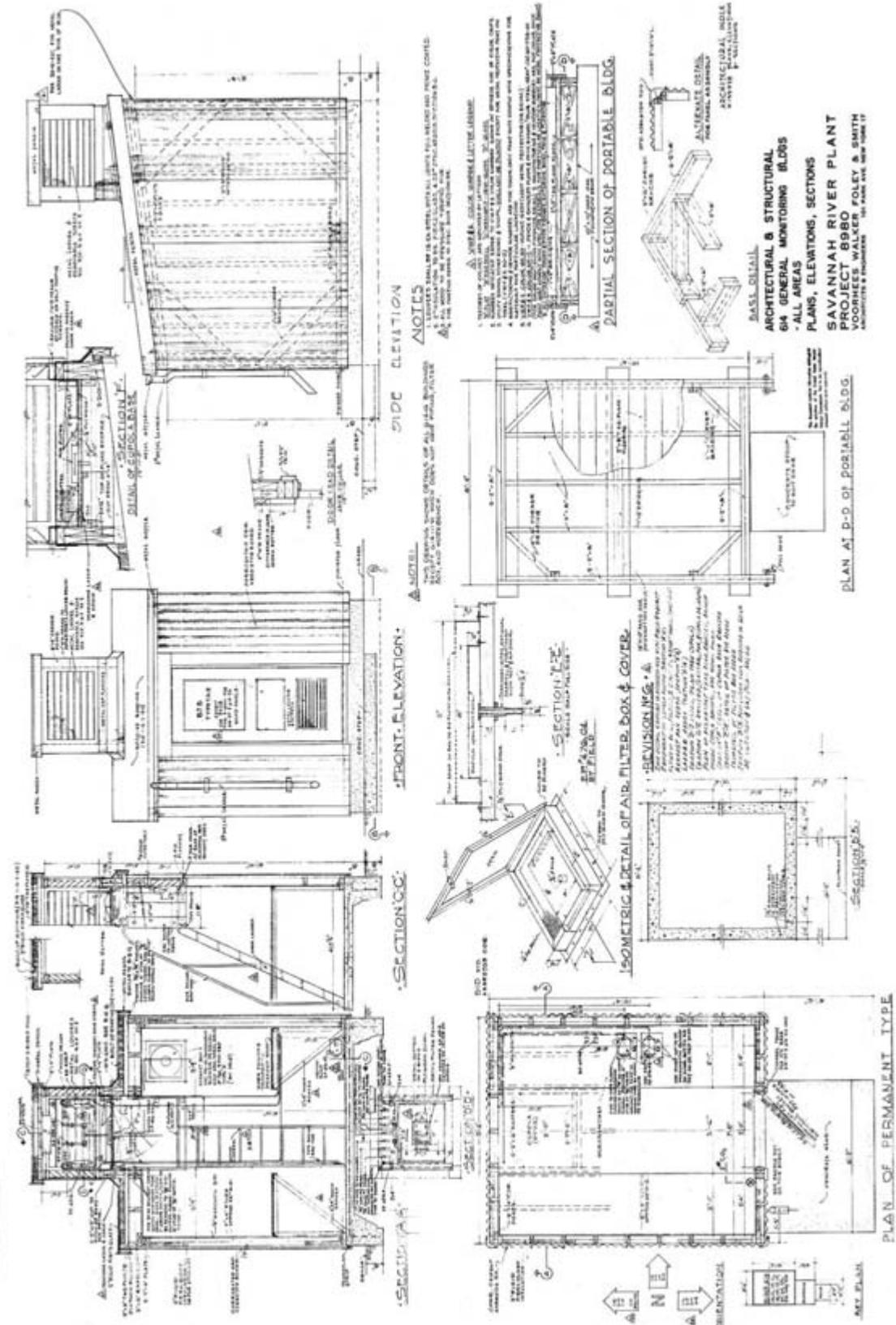
Source: Savannah River Site's Cold War Built Environment Cultural Resources Management Plan

#### 614-1A: General Monitoring Building

This building was one of eleven identical buildings designed to house equipment that would automatically and continuously sample and analyze the atmosphere for radioactive matter or gas. Equipment continuously recorded the results and could also assist in interpreting the source of contamination if needed. Eight of these buildings were situated on plant property, including 614-1A, which was situated in the northeast corner of Lower 700. The remaining three were located off-site, one in Waynesboro, another in Allendale and the third at the Aiken Airport. According to information provided by WSRC, five of the on-site buildings are still extant, as is the building located off-site in Waynesboro; however, only two of those (614-F and 614-1D) are still operational.

Monitoring equipment installed in the buildings included an ion chamber and micro-micrometer, air filter assemblies, "Motoair" vacuum pump, and scalers with curve drawing attachments. In addition, temperature and relative humidity were recorded and rainwater samples were collected. The equipment was designed to be left unattended, but periodic pick-up of information was required.

These buildings were single-story Class III constructions approximately 8 feet by 10 feet. The foundation of this building and the majority of the others was reinforced concrete with wall footings. Two of the structures, 614-4G



Plans, Elevations, and Sections for 614 General Monitoring Buildings, All Areas.



and 5G, were constructed on wood skids so that they could be transported easily to different locations. The wood frames of the buildings were treated for fire resistance and sheathed in corrugated cement asbestos board. The interior walls and ceilings were covered with Masonite, while the concrete floors were left exposed. A sloped roof topped the structures at an average height of 8.5 feet, and a cupola, approximately 4 feet square by 4 feet high with screened louvers on all four sides, was mounted on the high side of the sloped roof. The buildings were entered through a wood door, which was the only opening on the façade.

#### 701-2A, 3A: Gate Houses

Designed as functional and standardized building types by VWF&S, the gate houses were Class III constructions sharing certain attributes: projecting rooflines, 360 degree visibility, single story, and small size. Ubiquitous and necessary, they allowed security guards protection against the elements as they checked badges on those entering and leaving a building area by foot or by car. In addition, they served as a designated place where health physics personnel could issue and process the badges that were indicators of exposure to radiation.

The 701-2A Gate House group functioned as the control point for vehicular and pedestrian traffic at the main entrance to the shop buildings section of the 700/A Area. Two buildings were provided for this operation, a five-foot square sentry box located on a curbed island between two traffic lanes and a larger structure with two personnel control lanes. The latter building measured 10 feet by 5 feet and had a roof overhang measuring two feet on its long sides and a long, rectangular metal canopy on its south elevation to accommodate pedestrian traffic.

701-3A was used for the control vehicular traffic heading south to other parts of the plant on Road D between the 300/M and 700/A Areas. It was located on a curbed and paved island between two single lanes of traffic and measured approximately 10 feet by 15 feet.

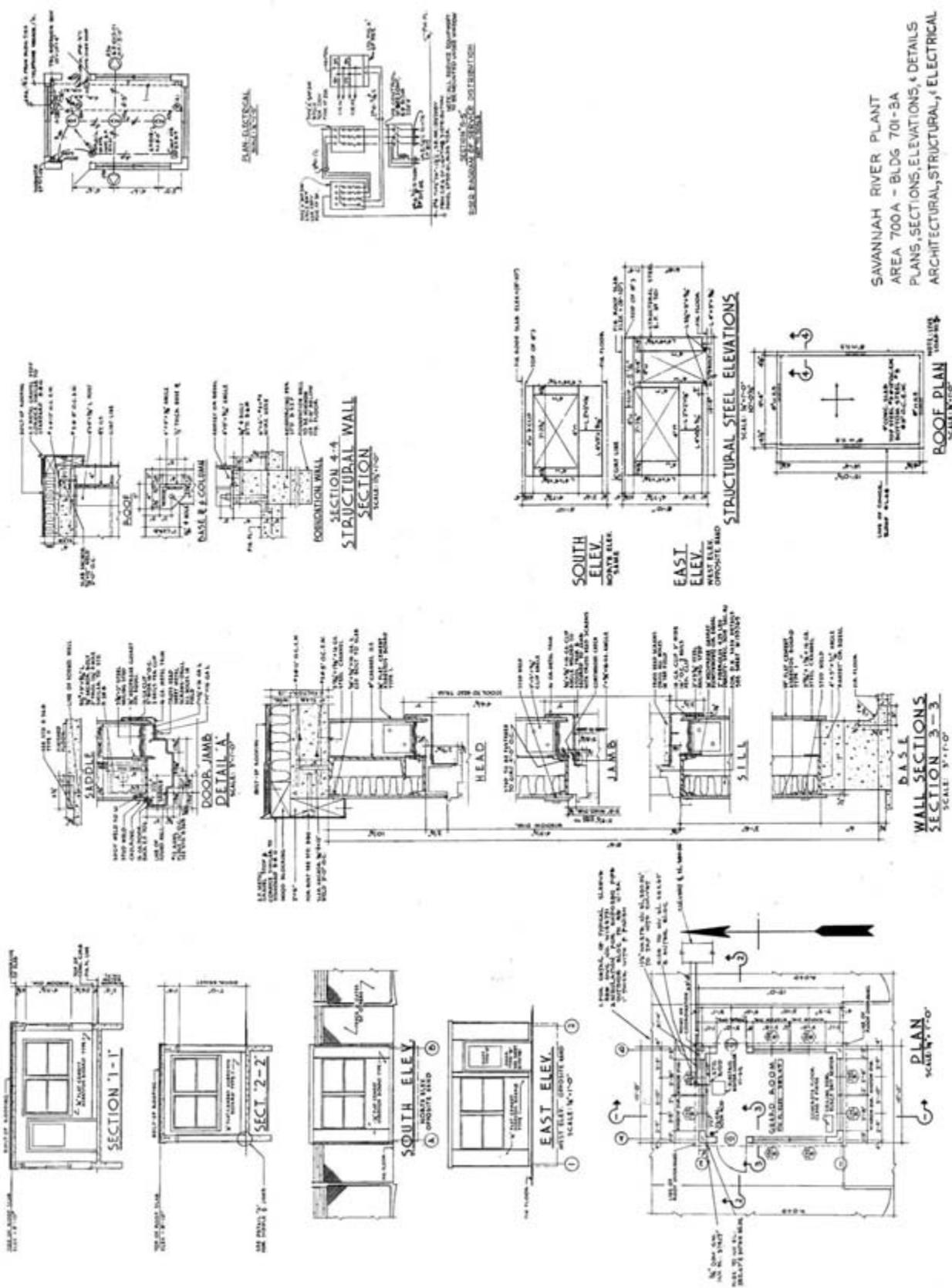




701-2A Gate House



701-3A Gate House



SAVANNAH RIVER PLANT  
AREA 700A - BLDG 701-3A  
PLANS, SECTIONS, ELEVATIONS, & DETAILS  
ARCHITECTURAL, STRUCTURAL, & ELECTRICAL

Plans, Elevations, Sections & Details for 701-3A Gate House.

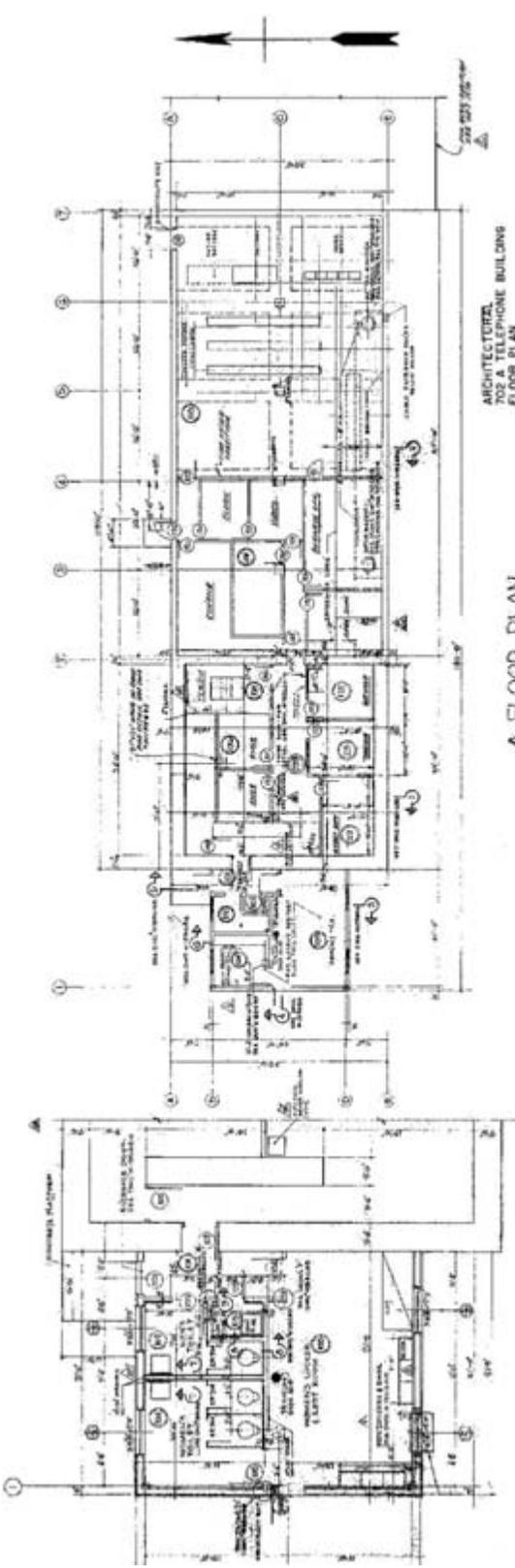
Both buildings were constructed on concrete foundations with structural steel frames. Roofs were flat concrete slab. Exterior and interior walls were sheathed in flat cement asbestos board and cement floors were left uncovered. The buildings were heated with electric heaters, but were not air-conditioned; however, each was equipped with a water cooler.

### 702-A: Telephone Building

The Telephone building was designed to house the facilities and equipment for the central telephone exchange at SRP. This equipment included a dial-operated telephone system capable of handling 2500 intra-plant lines in addition to a manually operated switchboard for off-site connections. This one-story building consists of three principal components: a switch room, a switchboard room and a utilities room. A plan view of the building shows each section as clearly discernable and suggests that the architects followed a “form follows function” philosophy in their design. Sited in an area directly behind wing D of 703-A, construction of 702-A began on August 8, 1951 and the dial system exchange was operational by June 1952.

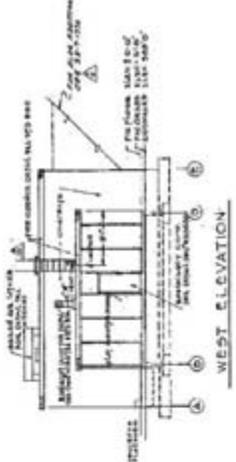
Because the continuous performance of all communications equipment was vital to the proper functioning of plant security as well a necessity in the case of an emergency, the bulk of 702-A was constructed as a Class I structure. The Switch Room, measuring 39 feet wide by 81 feet long, housed the mechanical switching apparatus and was designed to withstand bomb blasts. The Switchboard Room measured 39 feet by 38 feet and housed the operator stations and a supervisor’s office. This section had the added benefit of protection from gamma rays, a level of fortification attained through the use of monolithic concrete with interior baffle walls for both the roof and exterior walls of the building. The foundation is reinforced concrete with spread-footings. The Class III section of the building measuring 22 feet by 26 feet housed restrooms, locker rooms and a janitor’s closet.



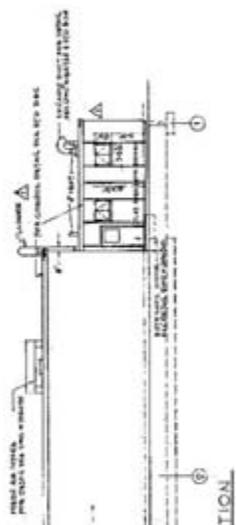


ARCHITECTURAL  
702 A TELEPHONE BUILDING  
FLOOR PLAN  
SAVANNAH RIVER PLANT  
PROJECT 8980 FOLEY & SMITH  
VOORHEES WALKER FOLEY & SMITH  
ARCHITECTS & ENGINEERS 101 PARK AVE. NEW YORK 17

A FLOOR PLAN  
SCALE 1/4\"/>

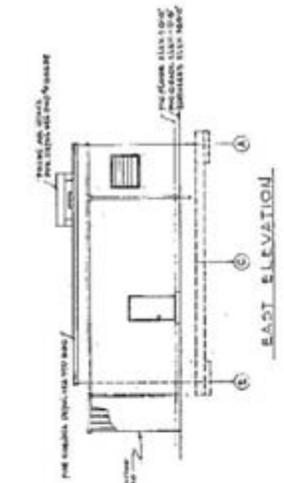


WEST ELEVATION

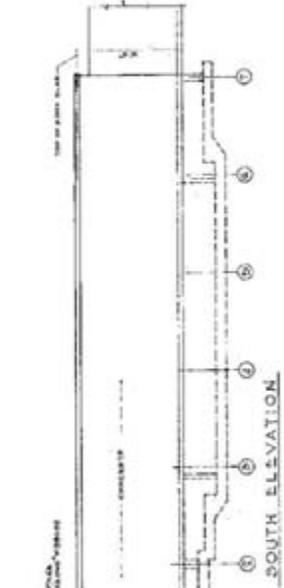


NORTH ELEVATION

ARCHITECTURAL  
702 A TELEPHONE BUILDING  
ELEVATIONS  
SAVANNAH RIVER PLANT  
PROJECT 8980 FOLEY & SMITH  
VOORHEES WALKER FOLEY & SMITH  
ARCHITECTS & ENGINEERS 101 PARK AVE. NEW YORK 17



EAST ELEVATION



SOUTH ELEVATION

Plans and Elevations for 702-A, Telephone Building.

There were only minor differences in interior specifications between the Class I and the Class III areas of the building. One is the treatment of the interior of the exterior walls: Masonite™ from floor to ceiling in Class I and asbestos board in Class III. All areas of the building had exposed concrete ceilings and concrete floors covered with asbestos tile, with the exception of the janitor's closet and the utility room. Fluorescent lighting was used in the switchboard room and the supervisor's office and incandescent lighting was used elsewhere. Patrol Headquarters/720-A could control 702-A's exterior lights and safety alarm, as it could most A Area buildings, should an emergency situation arise. No window openings exist in the building, but HVAC systems assured adequate ventilation the continuous operation of the telephone equipment during disaster; heating was supplied throughout the building by a forced air system, though air conditioning was supplied in Class I areas only.

Southern Bell Telephone was involved in the design process as well as the installation of equipment along with Western Electric Company.

### 703-A: Main Administration Building

Building 703-A was designed by VWF&S as a component of Project 8980 to house the central administration offices at SRP. Accommodations were to be provided for the plant management group, Atomic Energy Commission personnel, engineering offices, permanent record storage as well as clerical and accounting services. Construction of the building began on August 30, 1951 and was completed on October 12, 1953, though its first occupants moved in almost a year prior to that date on October 17, 1952.

Initially the building was designed to accommodate 475 persons, a figure based on a preliminary organizational chart. By the end of construction however, the occupancy figure had jumped to 1100, with 740 Du Pont employees and 360 Atomic Energy Commission personnel to be housed in the building. Though the external dimensions of 703-A were never adjusted from the original plans to reflect this increase in staff, the personnel capacity of the building was expanded through the decision to relocate systems equipment that was to have been housed in the basement of the central structure. This decision allowed some of the clerical functions to be moved to the basement location and also provided enough space for the facility print shop, reproduction, and stationery storage to be located there as well.

703-A was erected on a reinforced concrete foundation with spread footings. The frame employs reinforced concrete columns, wall piers and roof with steel framing between the piers for windows and spandrel wall construction. 703-A was one of only three buildings in 700/A to include sections of Class I construction in their building layout. Shelter areas comprised almost 7500 square feet of space in the basement level and were accessed by eight shielded entrances also of Class I construction. The remainder of the building utilizes Class II construction techniques.

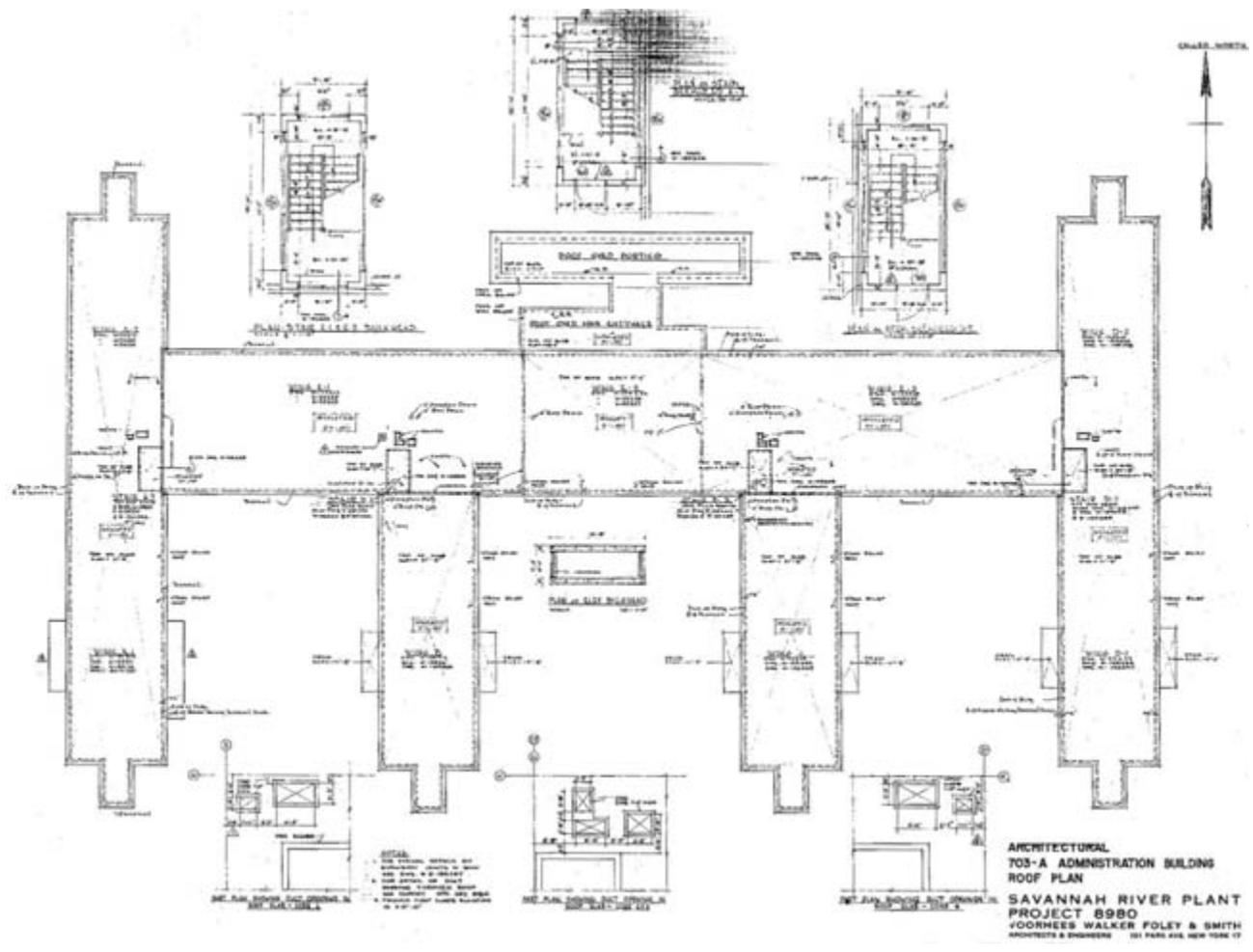
The core of the building is approximately 61 feet wide and 487 feet long. Six wings project from this central mass, two in the front and four in the rear. The anterior wings are situated symmetrically at each end and project approximately 61 feet from the façade of the core building. Of the four rear wings, two measure 124 feet in length and the other two 122 feet. All six wings are 41 feet wide and feature stair towers at their termini



Architectural Rendering of the Main Administrative Building (703-A)  
by Architects Voorhees, Walker, Foley & Smith, ca. 1951.

Voorhees Walker Foley & Smith

Roof Plan, 703-A Main Administration Building



# MAIN ADMINISTRATION BUILDING 703-A CONSTRUCTION SEQUENCE



7-117

703-A, September 12, 1951.



7-173

703-A, December 13, 1951.



7-267

703-A, March 27, 1952.



7-298

703-A, April 29, 1952.



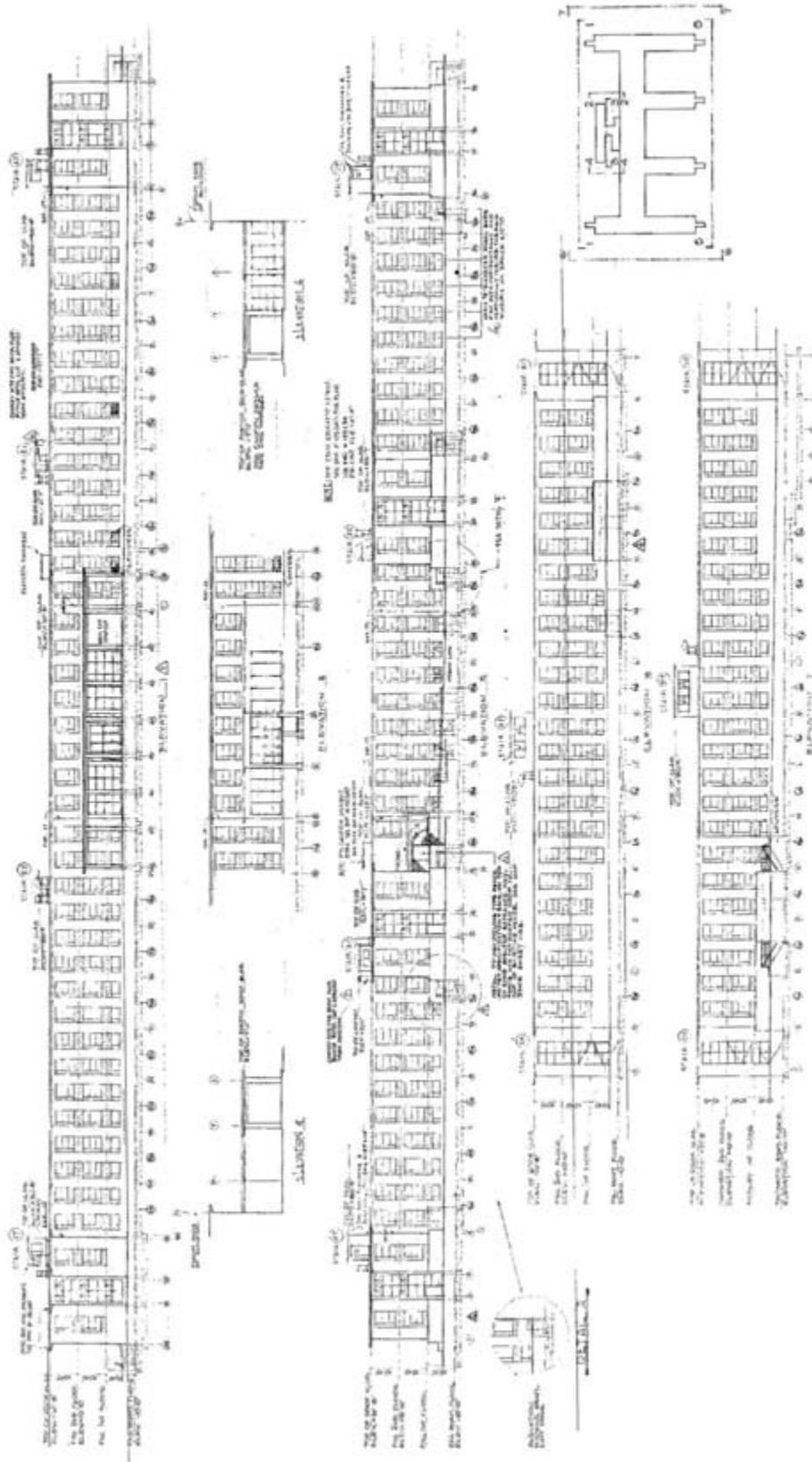
7-324

703-A, May 29, 1952



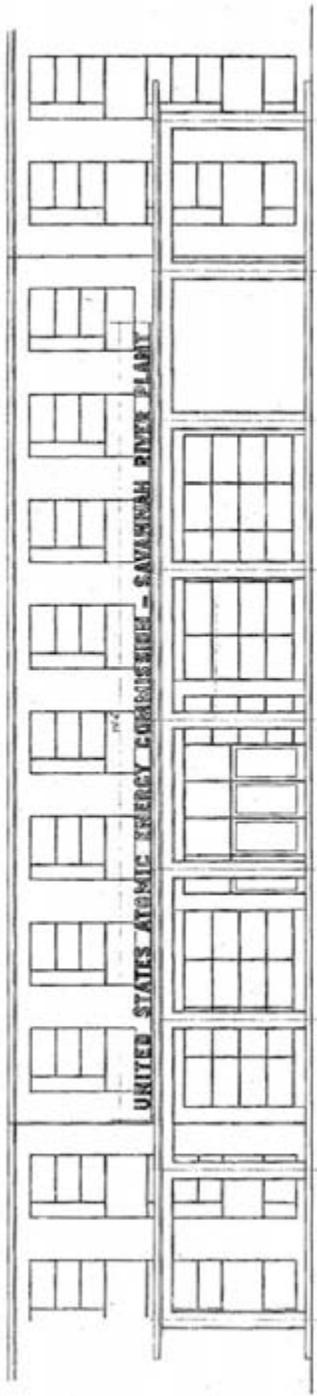
7-495-2

703-A, December 31, 1952.

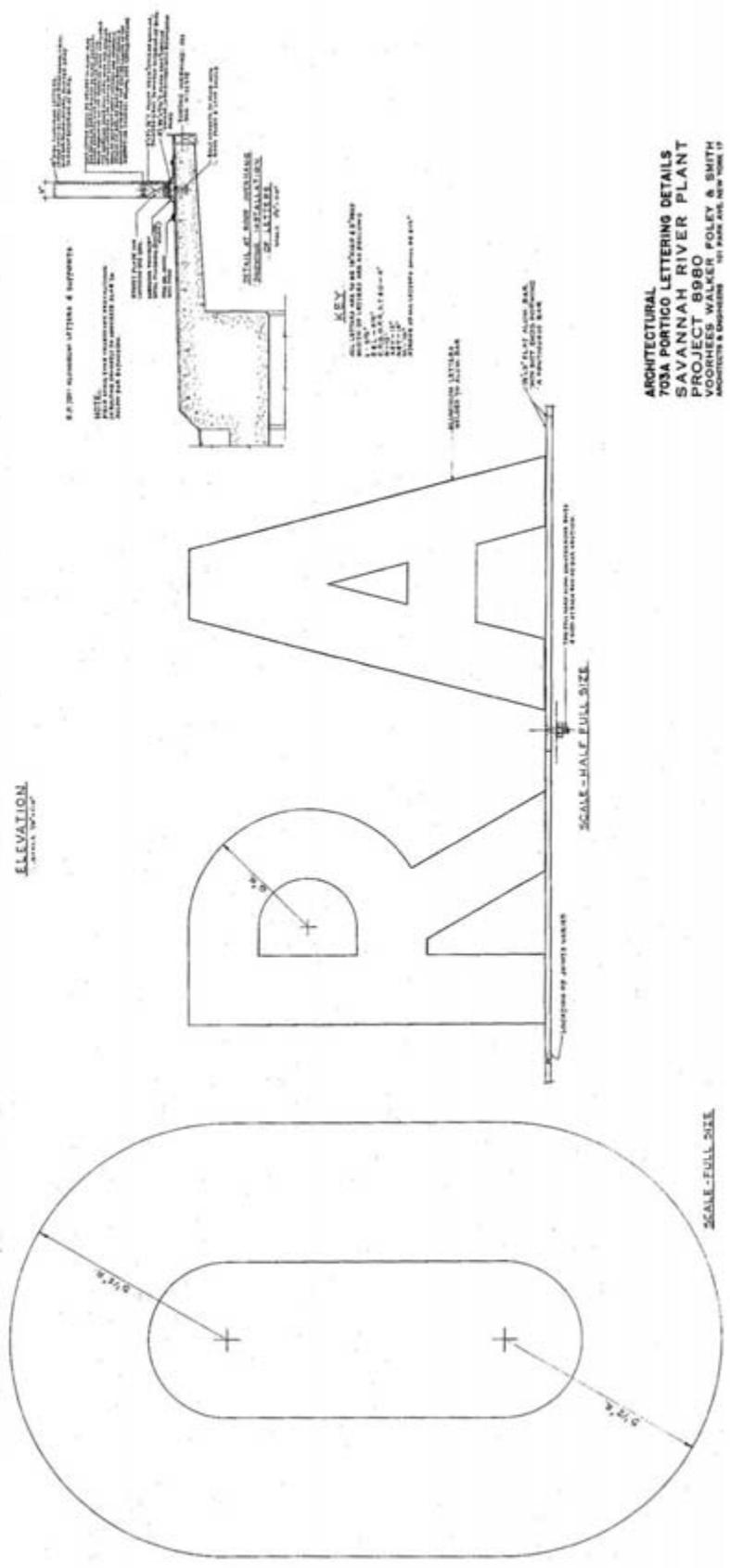


ARCHITECTURAL  
703-A ADMINISTRATION BUILDING  
ELEVATIONS - SHEET NO. 1  
SAVANNAH RIVER PLANT  
PROJECT 8980  
VOORHEES WALKER FOLEY & SMITH  
ARCHITECTS & ENGINEERS 351 PARK AVE. NEW YORK 17

Elevations, 703-A Main Administration Building.



ELEVATION  
 1/4" = 1'-0"



ARCHITECTURAL  
 703A PORTICO LETTERING DETAILS  
 SAVANNAH RIVER PLANT  
 PROJECT 8980  
 VOORHEES WALKER FOLEY & SMITH  
 ARCHITECTS & ENGINEERS 161 PARK DRIVE NEW YORK 17

Portico Lettering Detail, 703-A Main Administration.

measuring 11 feet by 18 feet. The entire structure is 33 feet high and contains three stories and over 175,000 square feet of interior space.

The Atomic Energy Division of the Du Pont Company occupied 46,760 square feet of office space, while the Atomic Energy Commission personnel utilized 32,635 square feet. Individual offices were laid out using a 10-foot design module that was agreed upon during a meeting in Wilmington on January 18, 1951. Office depths were determined depending on occupancy with 15 feet 6 inches being the standard for single occupancy and 25 feet for group offices. Corridor width was seven feet. Interior specifications for office space tended to be sparse with smooth asbestos board walls, acoustical tiled ceilings, asphalt tiled floors and fluorescent lighting. Non-office areas such as those set aside for mechanical and communications equipment, storage, emergency generators and shelters had exposed concrete for both floors and ceilings and incandescent lighting. The entire building with the exception of the shelter areas was heated through a combination of forced air and unit heaters. First and second floor offices, the lobby and all tenanted basement areas were also air-conditioned, though shelter areas were not.

The building's exterior fenestration features an alternating sequence of reinforced concrete piers and smooth cement asbestos board, or Transite™, framing large windows. All windows are steel sash, first and second story are horizontal with three-lights, both awning and fixed, while basement level windows have two-lights. An exterior tramrail and trolley with window washing cage was continuous around the entire building perimeter.

While Voorhees, Walker, Foley & Smith did adhere to the spartan building ethic with their design, 703-A is unarguably the most architecturally interesting structure on the site. Its flat projecting roofline, angularity, monumental mass, and one-story columned portico on the front façade are suggestive of Modern architectural movements.

In addition to its practical functions 703-A fulfilled another vital role, as the "face" of the SRP. The Administration Building dominated the landscape of Upper A Area, particularly as viewed from the approach on Road 1. The majority of the one thousand plus employees that worked in the building would pass through the guard station in the lobby each and every workday. Likewise, all visitors to the Site were required to visit the Administration Building in order to check-in and be issued a temporary badge at Visitor Control, also located in the lobby, before proceeding with their business at the Site. The front façade of the building, with one-and-a-half foot tall aluminum lettering spelling out "UNITED STATES ATOMIC ENERGY COMMISSION - SAVANNAH RIVER PLANT" atop the portico was one of the favored spots to pose upper management for photos; however, the construction of two office buildings, 703-41A and 703-42A, in 1982 and the Badge Office, 703-46A, in 1989, completely obscured the façade of the Administration Building, ending its role as frontispiece.

#### 708-A: Cafeteria

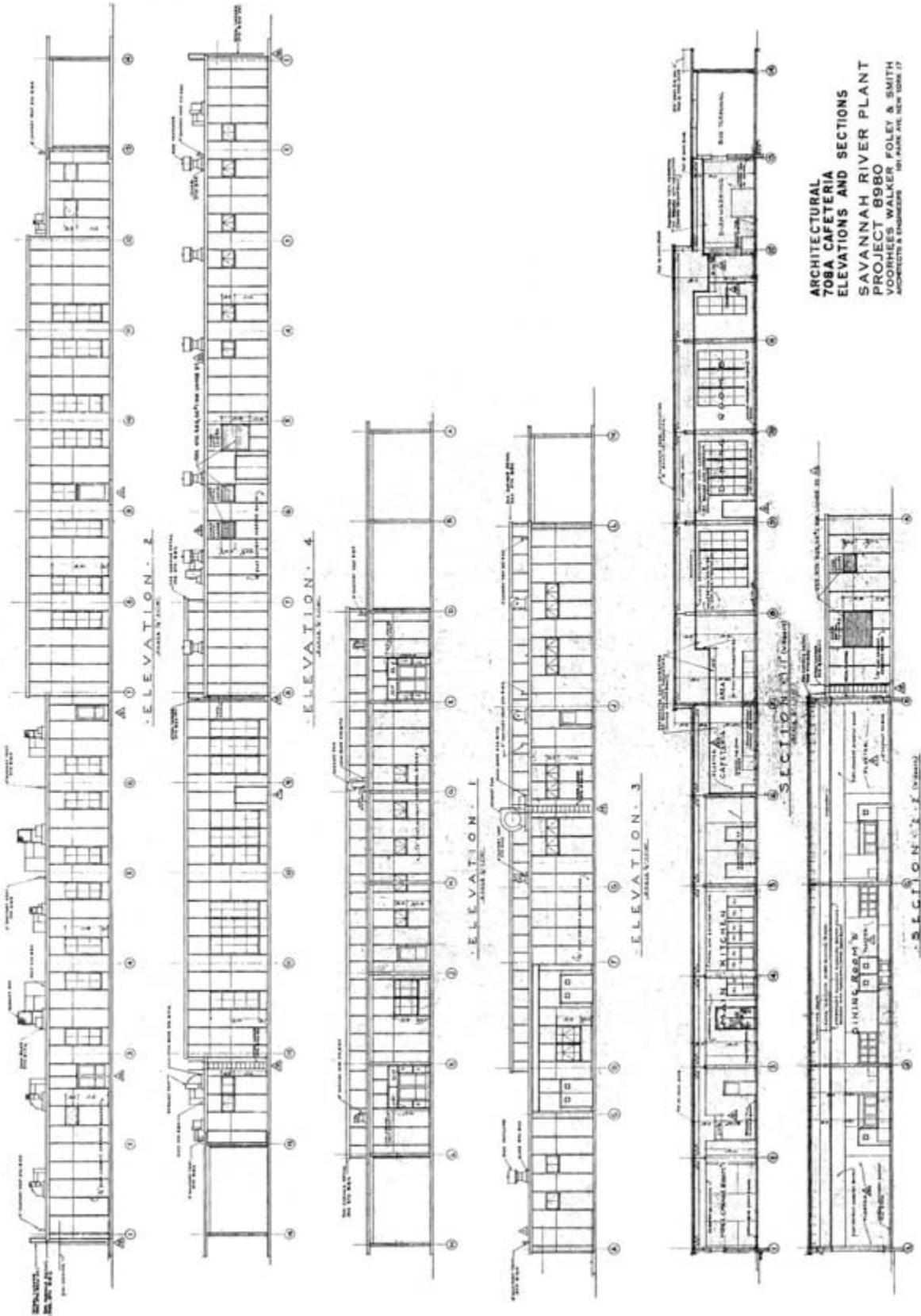
At approximately 266 feet by 162 feet, the Cafeteria is one of the larger buildings in A area and was designed to feed the masses at SRP. Not only did it provide meals, dining area and canteen for employees in the 300-M/700-A Areas, it also served as the food preparation center for satellite cafeterias in other areas of the plant. On an average day this facility would feed close to five thousand people divided between two peak shifts.

Development of the building design began with an estimate of the plant's imminent population. Using this number as a yardstick by which to measure the scale of a requisite feeding program, VWSF and Du Pont specialists formulated a design plan that was approved October 12, 1951. Construction began two months later and the building was operational by November 1953.

The Cafeteria was designed to serve an estimated 1200 employees per peak shift in the 300M/700A Area. Hot meals were served during the 8-4 and 4-12 shifts, while a breakfast menu was offered on the 12-8 shift. The seating capacity of the building was approximately 650; that figure split between two dining rooms, a main dining room seating around 530 and a secondary dining room that sat about 100. The smaller of the two, Dining Room "B," was reserved for cafeteria staff or "kitchen help, janitors, etc." as described in VWF&S's *Engineering and Design History*. Du Pont, a northern company, was somewhat anxious about the issue of black/white relations or more specifically segregation, still standard practice in the South before the Civil Rights Movement of the early 1960s. Rather than running the risk of alienating a large percentage of their employee pool, the company tended to skirt the issue and hire African American's only for service positions, thereby allowing them to segregate according to occupation rather than race.

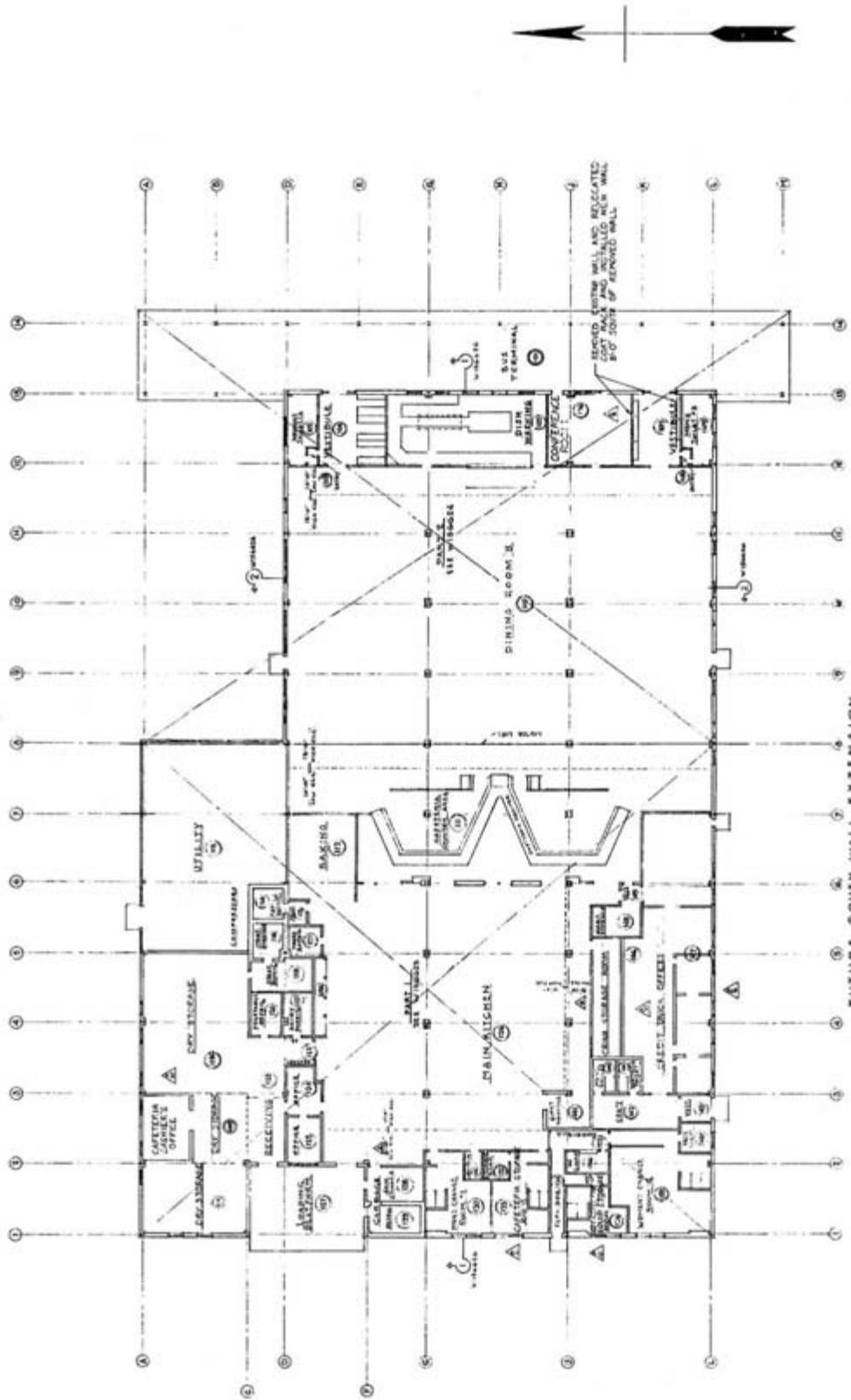
Along with feeding the employees of the 300/700 Area, 708-A also served as the food preparation nucleus for mobile cafeterias deployed all over the plant facility. Trucks were loaded up with AerVoid® containers containing hot and refrigerated foods, along with baked goods and beverages, to be consumed in the break rooms of administrative buildings in other areas.





ARCHITECTURAL  
708A CAFETERIA  
ELEVATIONS AND SECTIONS  
SAVANNAH RIVER PLANT  
PROJECT 8980  
VOORHEES WALKER FOLEY & SMITH  
ARCHITECTS & ENGINEERS (SHEPARD AND ASSOCIATES)

Elevations and Sections, 708-A Cafeteria.



KEY PLAN  
SCALE: 1/8" = 1'-0"

ARCHITECTURAL  
708A CAFETERIA  
KEY PLAN  
SAVANNAH RIVER PLANT  
PROJECT 8980  
VOORHEES WALKER FOLEY & SMITH  
ARCHITECTS & ENGINEERS 101 PARK AVE. NEW YORK 17

Plan of Kitchen and Main Dining Room, 708-A Cafeteria.

708-A was a Class III construction erected on a reinforced concrete/spread footing foundation. The frame of the building was structural steel and the roof was concrete on rib lath. Exterior walls were Transite™ panels attached to light steel framing that alternated with steel sash windows of the same horizontal dimension on the front façade. Transite™ and steel windows were used on the remaining elevations in differing configurations. A bus terminal canopy measuring 27 feet by 184 feet existed at the entrance to the Cafeteria.

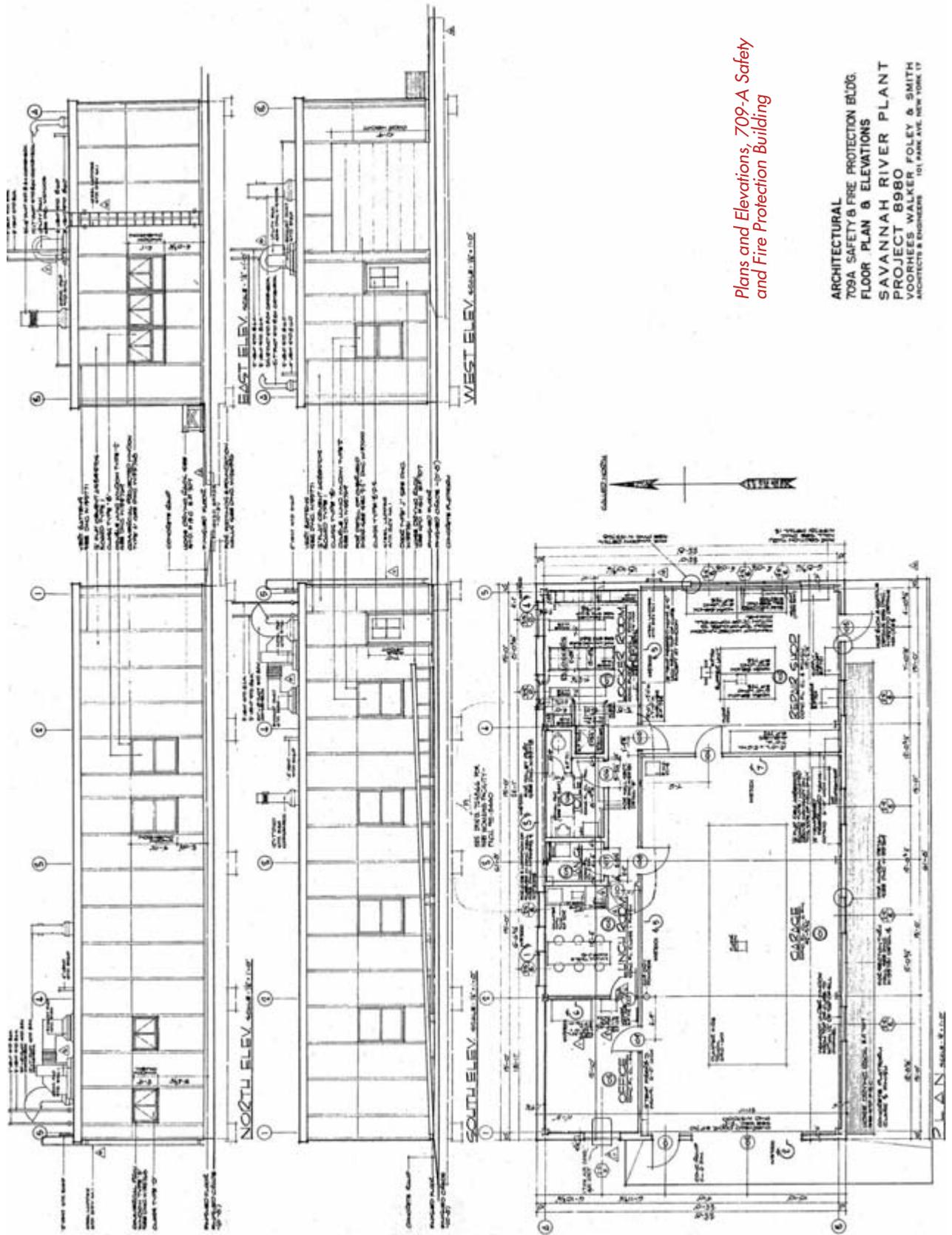
The accomplishment of feeding thousands of people each day was made possible through efficient design of the kitchen facilities, a joint effort achieved by VWF&S and Du Pont specialists. The main kitchen measured 120 feet by 120 feet and was equipped with walk-in refrigeration and freezer units, ranges, ovens, hoods, counter preparation areas, baking areas, food containers and cooking implements. Its walls were ceramic tile to full ceiling height, floors were covered with quarry tile and the ceiling was plaster over metal lath.

A total of 2130 square feet were devoted to two serving areas, 1600 for Dining Room A and 530 for Dining Room B. Each of these spaces were outfitted with tray rails, rear wall equipment, shelving, sinks, refrigerators and sections for sandwiches, bread, cold and hot foods, griddle items, toasters, ice cream dispensing cabinet and cashier station. Both dining rooms and counter areas were floored with greaseproof asphalt tile, had suspended perforated asbestos ceilings and flat asbestos board walls. Dining room fixtures consisted of tables with swing seats attached. In addition to the aforementioned areas, the Cafeteria building also had space allotted for a dishwashing room, receiving room and dry storage, two offices, utility room, garbage and linen rooms, men and women's coat and toilet rooms, staff locker rooms and showers, and a loading platform. A 400-square foot canteen area made available for sale candy, cigarettes, sandwiches and similar items.

#### 709-A: Safety and Fire Protection Building

The function of the building was to house fire fighting equipment and personnel and to serve as the base of operations for general fire fighting in A area, including forest and brush fires, motor vehicle fires, etc. In addition, the building housed equipment for the repair and replacement of plant fire extinguishers and gas masks and served as a storage facility for working stocks of such equipment. The major portion of the building served as garage space for a plant fire truck; other components included the repair shop, an office, a lunchroom for the men on duty and a locker and toilet room for a total of 2075 square feet.

The building was built of Class III construction on a spread footing concrete foundation. The frame was structural steel with web roof joists and a flat concrete slab roof. Exterior walls were sheathed with flat cement asbestos board. The interior wall treatments differed according to space, but flat cement asbestos board was the predominant material. The office, lunchroom and locker rooms were sheathed from floor to ceiling. In the garage and repair shop the wall-covering rose to a height of six feet. Toilet room walls were finished concrete to a height of four feet with asbestos board above that. Suspended cement asbestos board covered the ceiling except in the garage and repair shop. Doors were hollow metal, and window sashes steel, both projecting and double-hung. There was no finish material on the concrete floors. Heat was provided with unit heaters in the garage and repair shop and radiators in the rest of the building. Only the lunchroom area was air-conditioned.

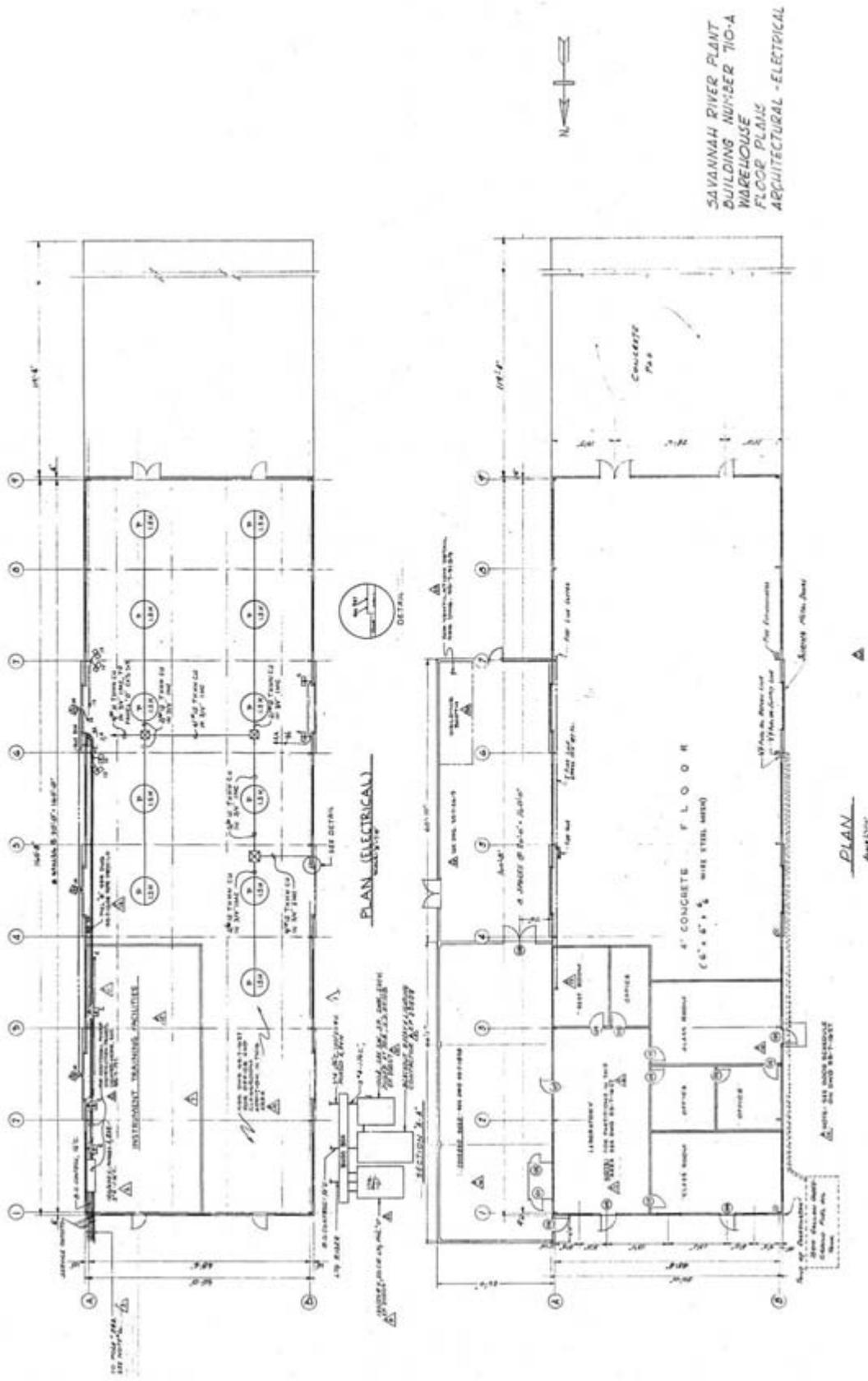




710-A: Electric Lineman's Headquarters

This prefabricated Butler building (Class III), erected in 1951, measured 50' x 160' and was originally used as the Electric Linemen's Headquarters. Known as TC Building #8320-M, it was transferred from temporary construction to the permanent account on December 11, 1953 in order to utilize the building for specialized storage where it provided approximately 8000 square feet of space for seldom used materials. The single-room building utilized steel framing and siding and sat on a four-inch reinforced concrete slab floor. Window sashes, doors and door framing were all metal.





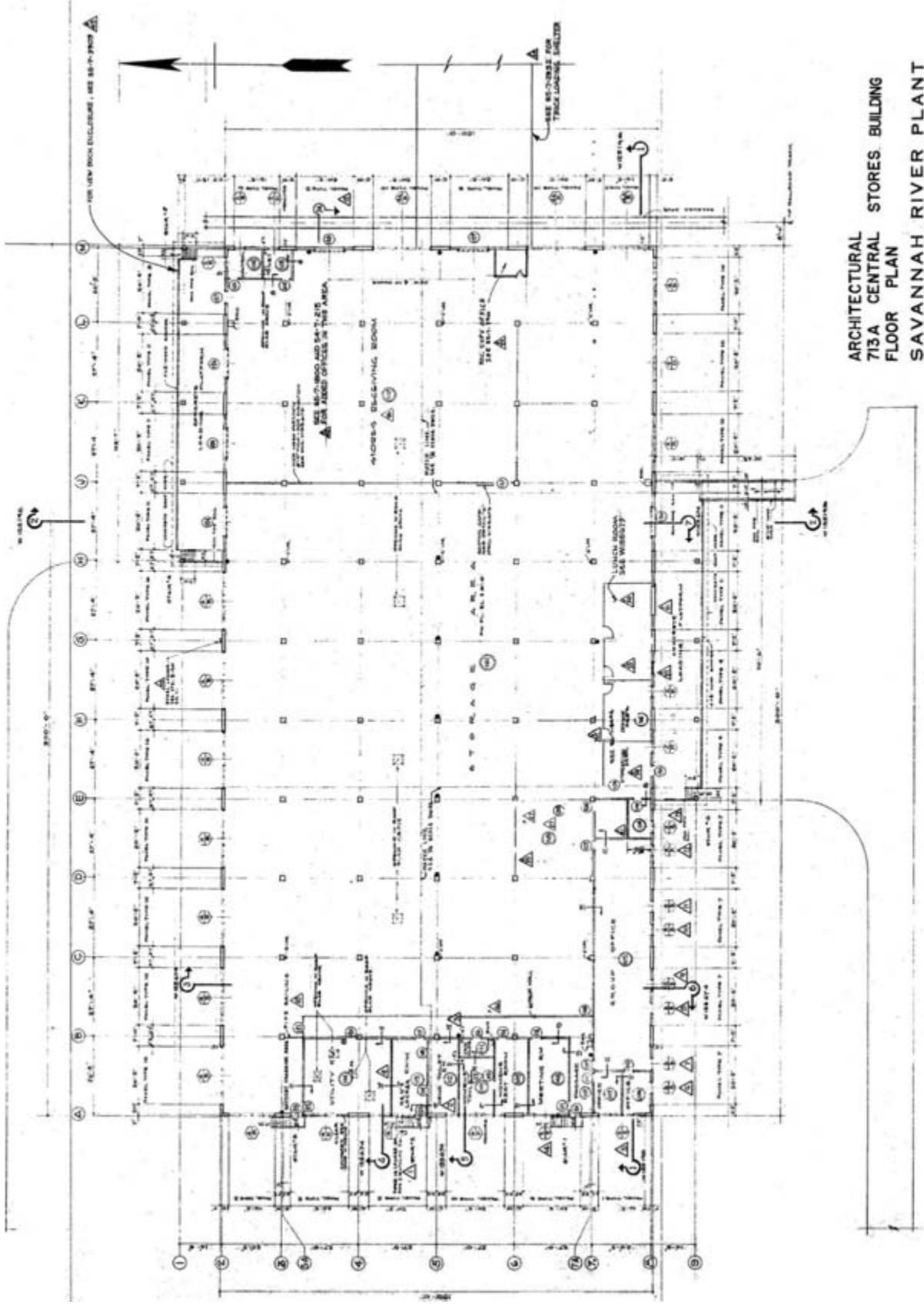
Plan, 710-A Warehouse

## 713-A: Central Stores

The function of this building was to provide facilities for receiving, storing and dispensing spare materials and parts. Materials that were to directly enter into production operations were stored where they were to be used. Components of the building included a receiving area and office, general storage and dispensing space, safety shoe storage and fitting room, supervisory and electrical offices, a meeting room, toilets, rest rooms, and locker rooms for both male and female employees for a total of 45,000 square feet.

This large rectangular, one-story building was built using Class II construction technique permitting quick restoration in the event of a blast. It rested on a reinforced concrete foundation with spread footings. The floor was 4 feet, 3 inches above grade. The superstructure consisted of a flat concrete floor slab with structural steel framing to hang window and wall panels between exterior concrete piers. Exterior walls between the piers were flat cement asbestos board panels with interruptions for metal sash windows and doors. There were two covered loading platforms each measuring 110 feet in length. Entrance to office areas was provided by three stairways, each 4 feet wide. Interior walls were also finished with flat asbestos board except in the storage area where quarter-inch Masonite was used for protection against trucks. Floors were concrete except in the offices, meeting room, fitting room, lockers and toilets where asphalt tile floor covering was provided. Doors were hollow metal. Five exterior doors measured 10 feet by 8 feet and two more measured 10 feet by 14 feet and were of sectional metal panels that slid overhead. Heating was provided through a combination of forced air and unit heaters and air conditioning was provided only in offices, meeting room and fitting room.

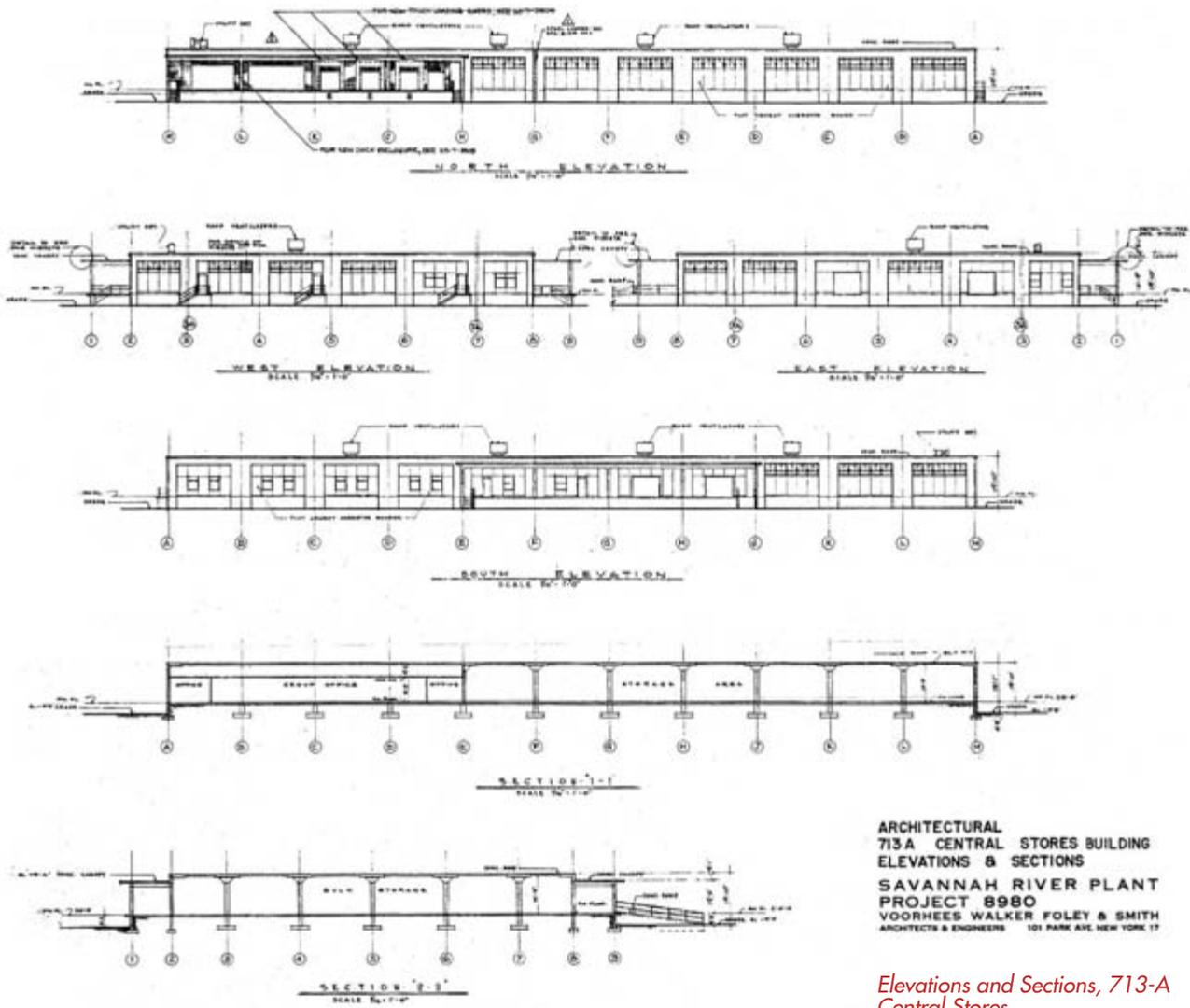




ARCHITECTURAL STORES BUILDING  
713A CENTRAL STORES BUILDING  
FLOOR PLAN  
SAVANNAH RIVER PLANT  
PROJECT 8980  
VOORHEES WALKER FOLEY & SMITH  
ARCHITECTS & ENGINEERS 101 PARK AVE. NEW YORK 17

PLAN

Plan, 713-A Central Stores

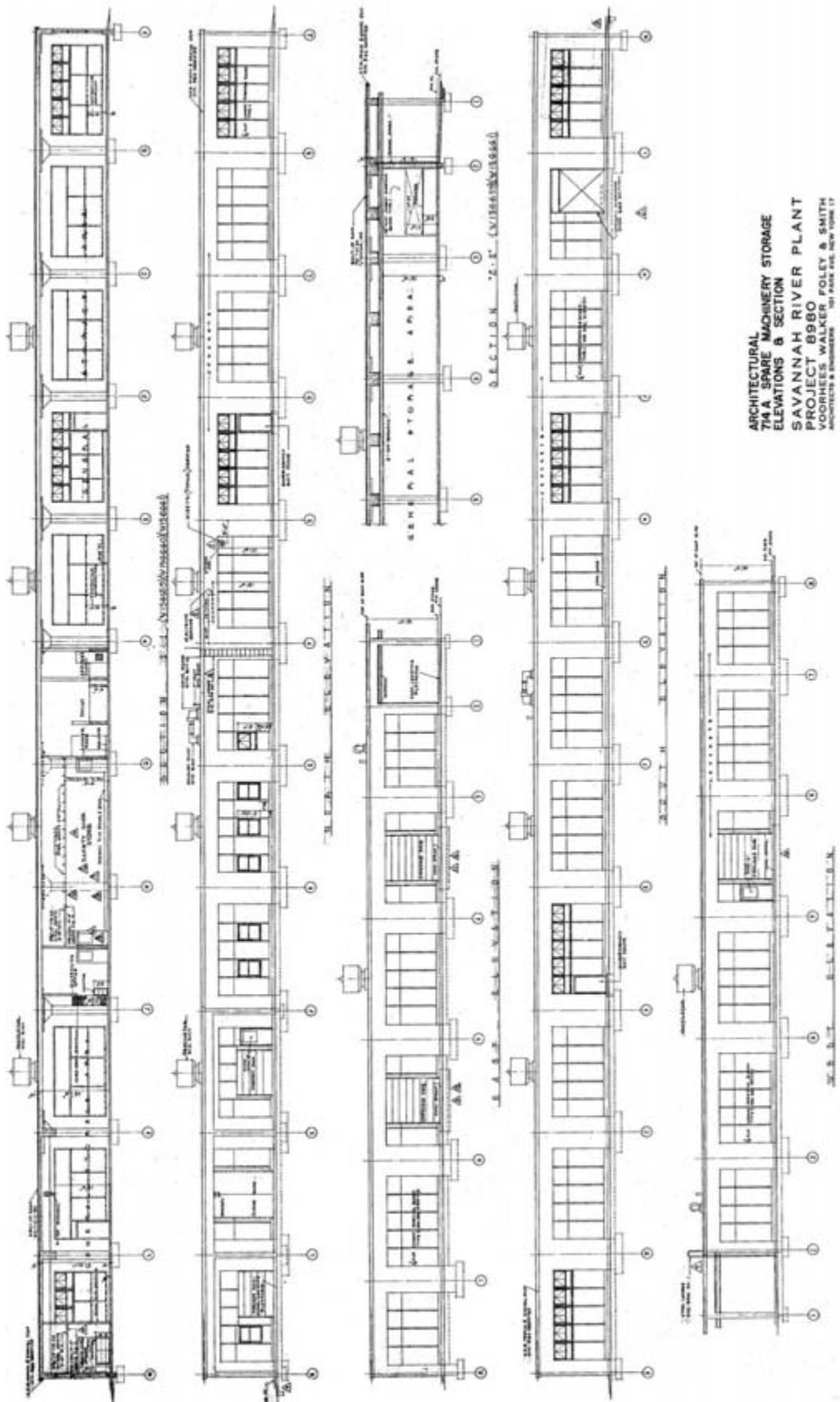


*Elevations and Sections, 713-A  
Central Stores.*

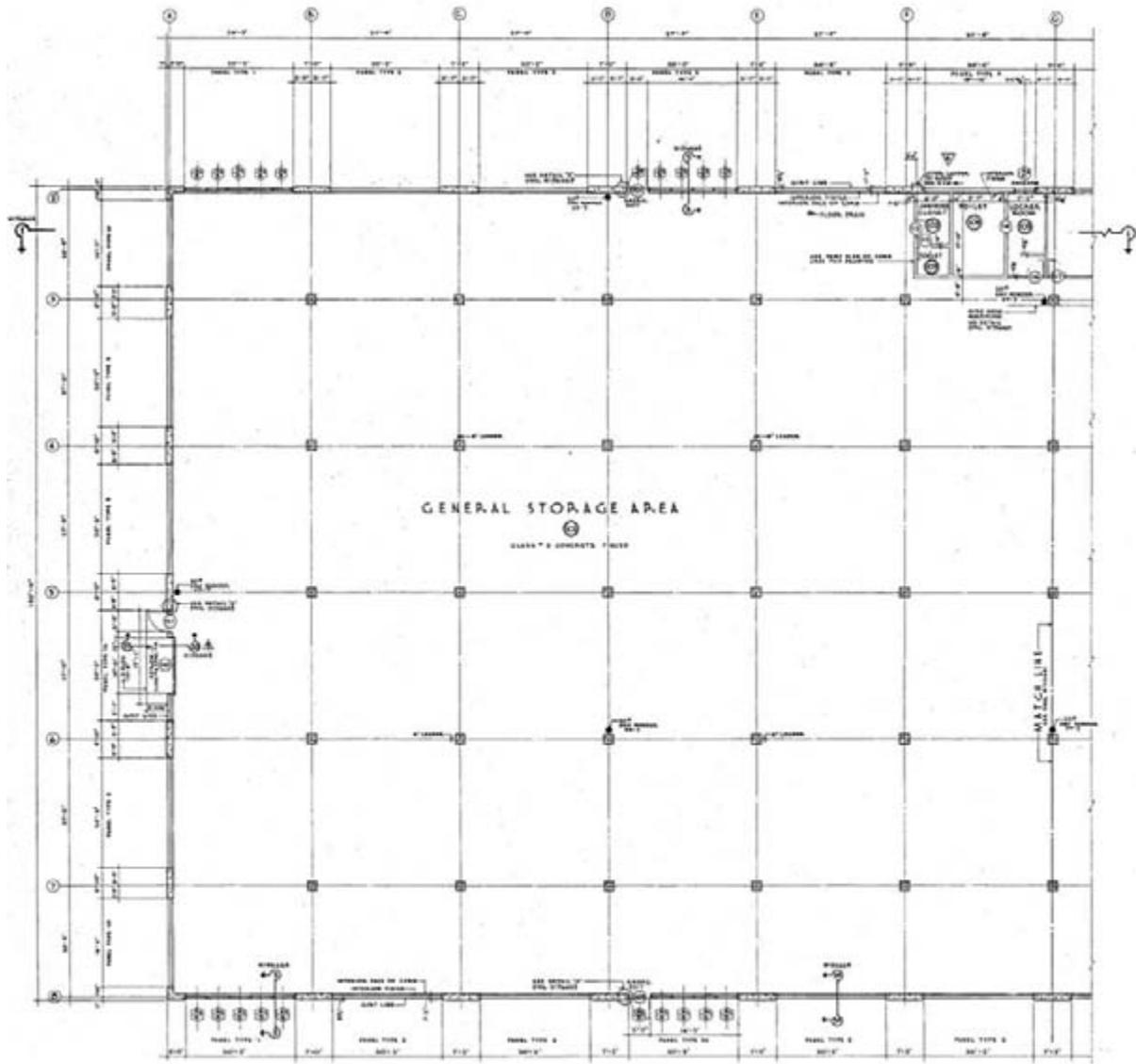
### 714-A: Spare Machinery Storage

This building's function was to provide for the receiving, storing and dispensing of spare machinery. The Class II construction would have afforded some protection to the stored materials in the case of a blast and could also be restored to usable condition in minimal time. The building measured 150 feet by 300 feet and 16 feet from



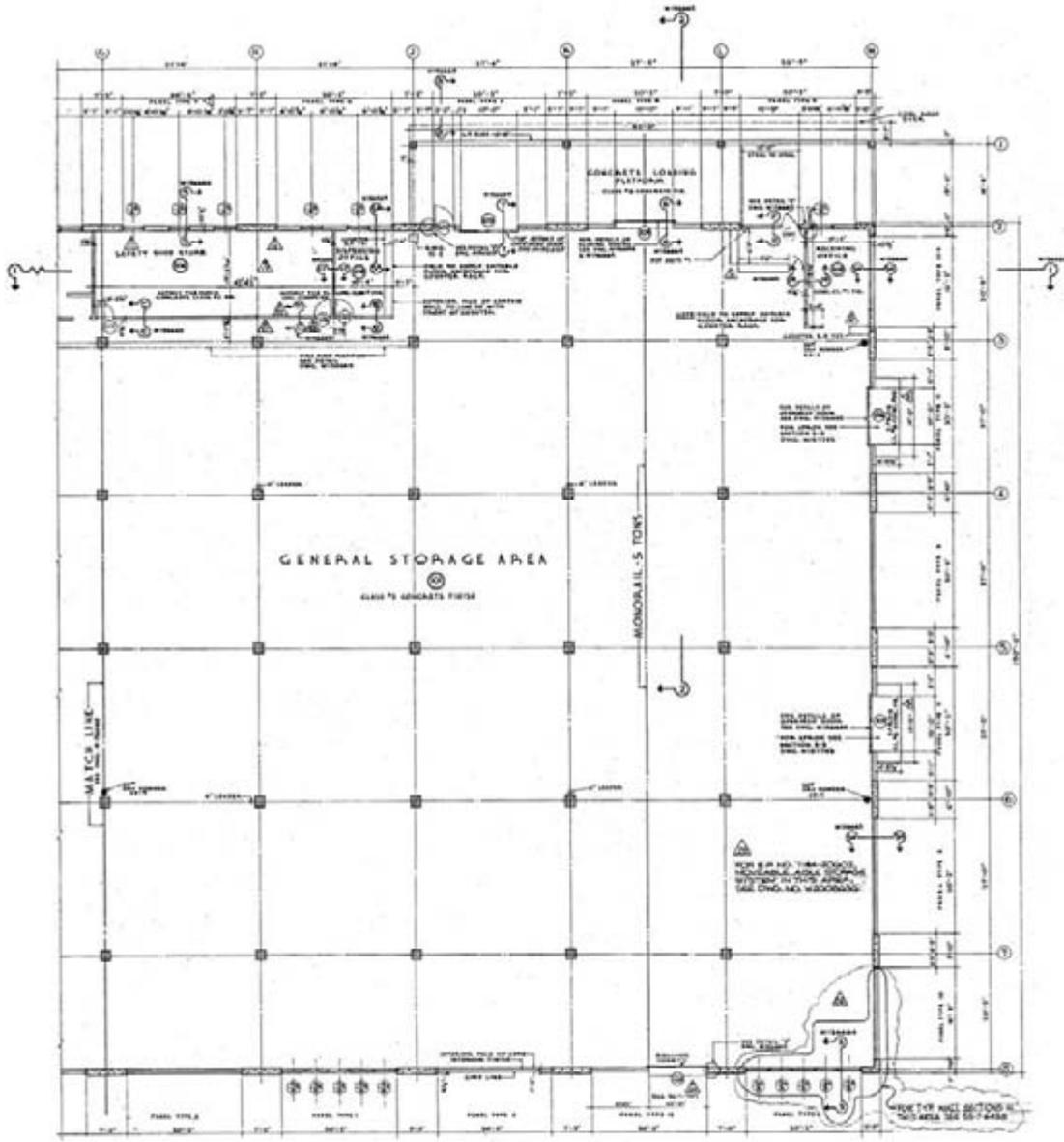


Elevations and Sections, 714-A Spare Machinery Storage.



Plan, 714-A Spare Machinery Storage, Sheet 1.

↑  
ARCHITECTURAL  
714A SPARE MACHINERY STORAGE  
FLOOR PLAN - PART I  
SAVANNAH RIVER PLANT  
PROJECT 8980  
VOORHEES WALKER FOLEY & SMITH  
ARCHITECTS & ENGINEERS 181 PARK AVE. NEW YORK 17



ARCHITECTURAL  
714-A SPARE MACHINERY STORAGE  
FLOOR PLAN PART 2  
SAVANNAH RIVER PLANT  
PROJECT 8980  
VOORHEES WALKER FOLEY & SMITH  
ARCHITECTS & ENGINEERS 101 PARK AVE. NEW YORK 17

Plan, 714-A Spare Machinery Storage, Sheet

floor to ceiling with a volume of 761,870 cubic feet. The majority of the interior was open storage, with offices and toilets occupying only three percent of the total square feet. A loading platform was located on the northeast corner of the building. A 5-ton hoist and monorail was installed on the ceiling and ran north to south from the loading platform.

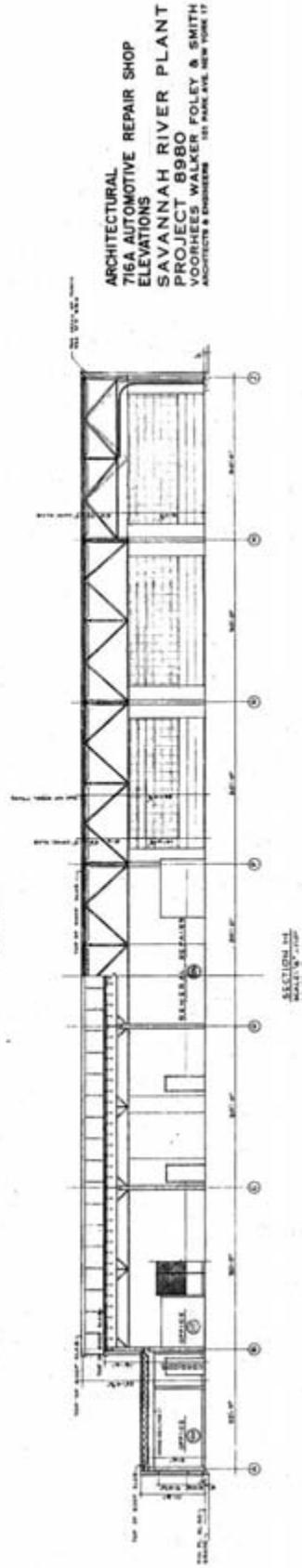
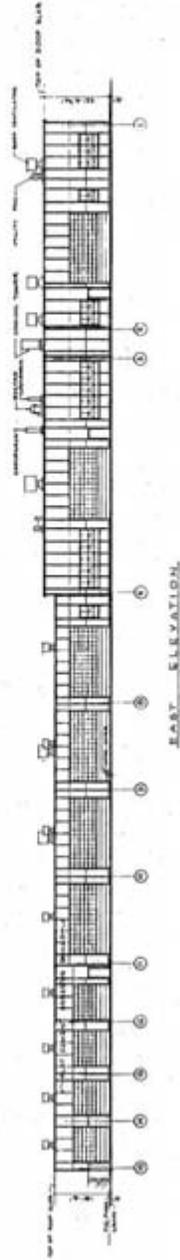
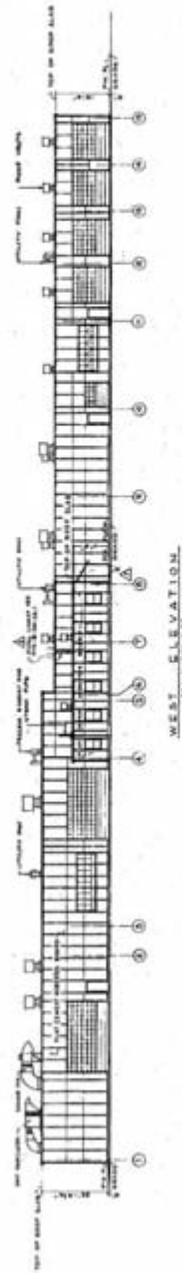
714-A was constructed on a reinforced concrete foundation with spread footings. Reinforced concrete interior columns and wall piers supported the roof slab. Exterior walls and interior partitions were sheathed with flat cement asbestos board. Sectional overhead sliding doors measured 10 feet by 12 feet and were hollow metal; steel sash windows were either double hung or projecting. Floors were exposed concrete except in the offices where asphalt tile was used.

#### 716-A: AUTOMOTIVE REPAIR SHOP

The purpose of this building was to provide a facility for maintenance and repair of all motor-vehicle equipment and all portable gasoline or diesel-driven equipment assigned to plant operations. This included approximately 1200 units including sedans, pick-up trucks, tractors, cranes, earth moving equipments, pumps, compressors, welding machines, ambulances, fire trucks, etc. A routine service section of the building provided space for vehicle washing, lubrication, tire and battery service, 1000-mile inspection, and check-up services. There were specialized areas for tune-ups, tire alignment and brake, clutch, transmission and engine repair. A body maintenance area was equipped with paint spray and steam cleaning facilities. There was a spare parts section as well as a miscellaneous section for the repair of diesel and small gasoline powered units. In addition, there were offices for supervisors, foremen and clerical personnel, a lunchroom with seating capacity for sixty people, locker and shower rooms for men and rest room for women. A bituminous mix plant and a concrete mix batch plant were located adjacent to this structure and were included as part of its facilities.







ARCHITECTURAL  
716A AUTOMOTIVE REPAIR SHOP  
ELEVATIONS  
SAVANNAH RIVER PLANT  
PROJECT 8980  
VOORHEES WALKER FOLEY & SMITH  
ARCHITECTS & ENGINEERS 151 PARK AVE. NEW YORK 17

Elevations and Sections, 716-A Automotive Repair Shop.

This single-story irregularly shaped building was of Class III construction and housed a total area of 41,261 square feet. Erected on a reinforced concrete foundation with spread footings, the building had a structural steel frame, web roof joists, and a concrete slab roof on rib lath. Exterior walls were of smooth cement asbestos board. The same wall treatment was used for interior walls in the office spaces. In the shop areas, tempered fiberboard wainscoting to a height of six feet was secured to wood nailers on the interior of the exterior walls, which also included a six-inch concrete curb. In the majority of the structure the concrete slab ceiling was left exposed. Exceptions were in the office spaces, change rooms and toilets, paint spray, steam cleaning and diesel repair rooms where cement asbestos board was used and the lunchroom where a sound absorbing acoustical treatment was used. Floors were, for the most part, exposed concrete with grease resistant tile laid in offices, lunchroom and rest rooms. Only the lunchroom was outfitted with air conditioning.

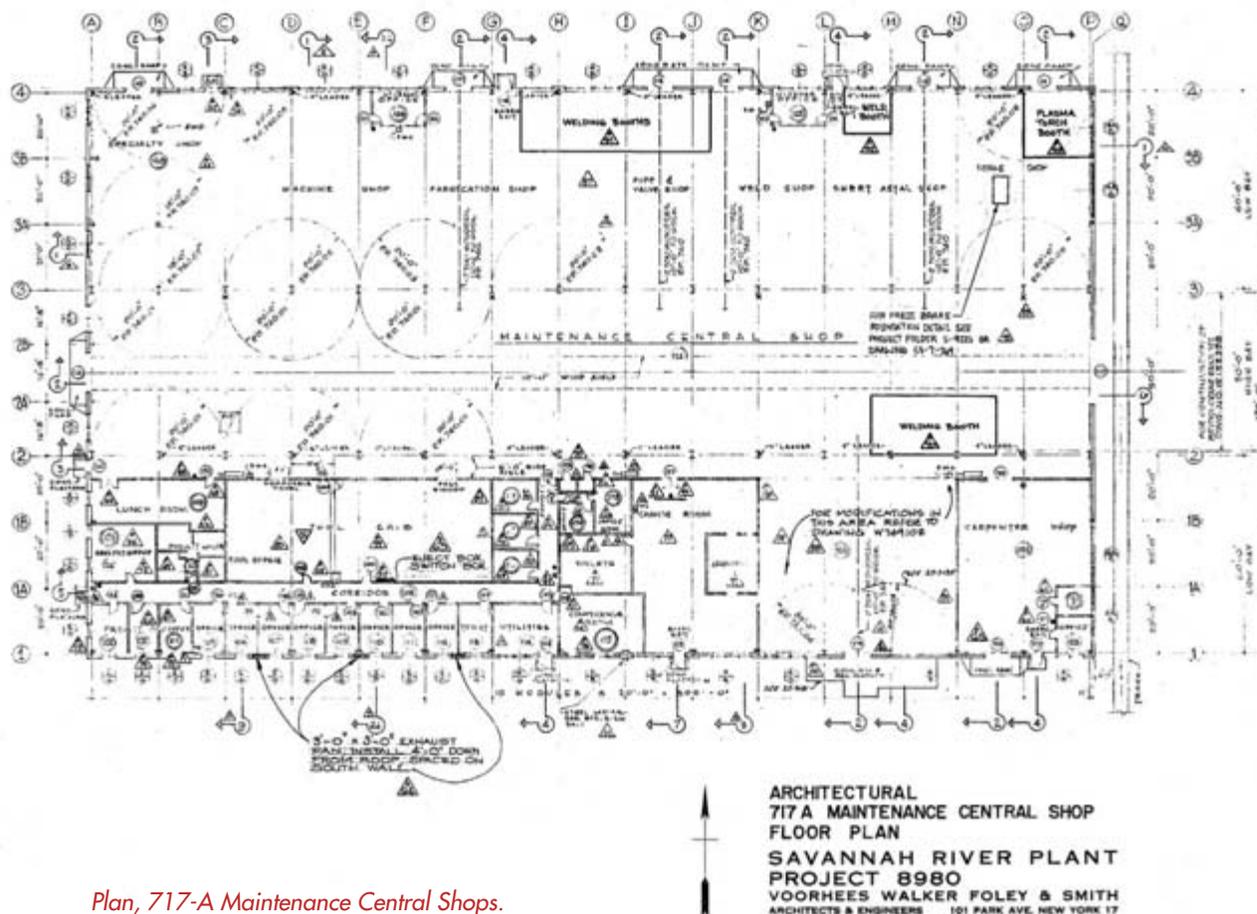
#### 717-A: Maintenance Central Shops

This rectangular building was designed to provide a central location for all mechanical and electrical maintenance and fabrication work for the entire plant excluding the plant's locomotive and vehicular repair. In addition to the main shop, the building houses the following: machine shop, fabrication shop, millwright shop, pipe and valve shop, welding shop, sheet metal shop, forge shop, carpenter shop, electric shop, instrument and relay shop, tool crib and repair shop with lapmaster room, office space, and meeting room. A specialty shop is also provided for work requiring segregation to prevent radiation contamination of machine tools. Lockers and rest rooms are provided will accommodate up to two hundred men per shift.

The Class II structure is single-story and rectangular in plan measuring approximately 172 feet wide by 302 feet long. An elevated crane-way 53 feet wide runs the full length of the building, rising to a height of 33 feet 8 inches, providing the building with its distinctive clerestory. The total area of the building is approximately 52,100 square feet. The structural steel frame sits on a reinforced concrete spread footing foundation. Roof trusses support a flat concrete slab on steel. Exterior and interior wall are sheathed in flat cement asbestos board. Ventilation is provided by fans on the shop roof capable of moving 20,050 cubic feet per minute; air conditioning is supplied only in the meeting room of this building.







*Plan, 717-A Maintenance Central Shops.*

### 719-A: Medical and Employment Building

The purpose of this building was two-fold; it housed medical service facilities for an estimated 6000 employees in the 300/700 area, as well as personnel facilities capable of processing up to 200 job applicants per day. 719-A, located in the northwest corner of Upper A Area, was a "T" shaped building, housing three wings. The employment section occupied the northernmost of these wings. A large waiting room situated near the center of the wing could accommodate approximately 50 applicants at a time. Rooms were provided for interviewing, photography and badge preparation, orientation, personnel and security files, stenography, and supervision.

Medical occupied the remaining two thirds of the building. It was divided into two sections, a general medical area and a separate emergency area. The general medical area housed facilities for pre-employment and annual examinations, health supervision, medical records, and first aid treatment for the 700/A and 300/M areas. It consisted of a reception area and waiting room, examination rooms equipped with x-ray and cardiograph equipment, laboratory, doctor's offices, supervisor offices, and stenographic rooms.



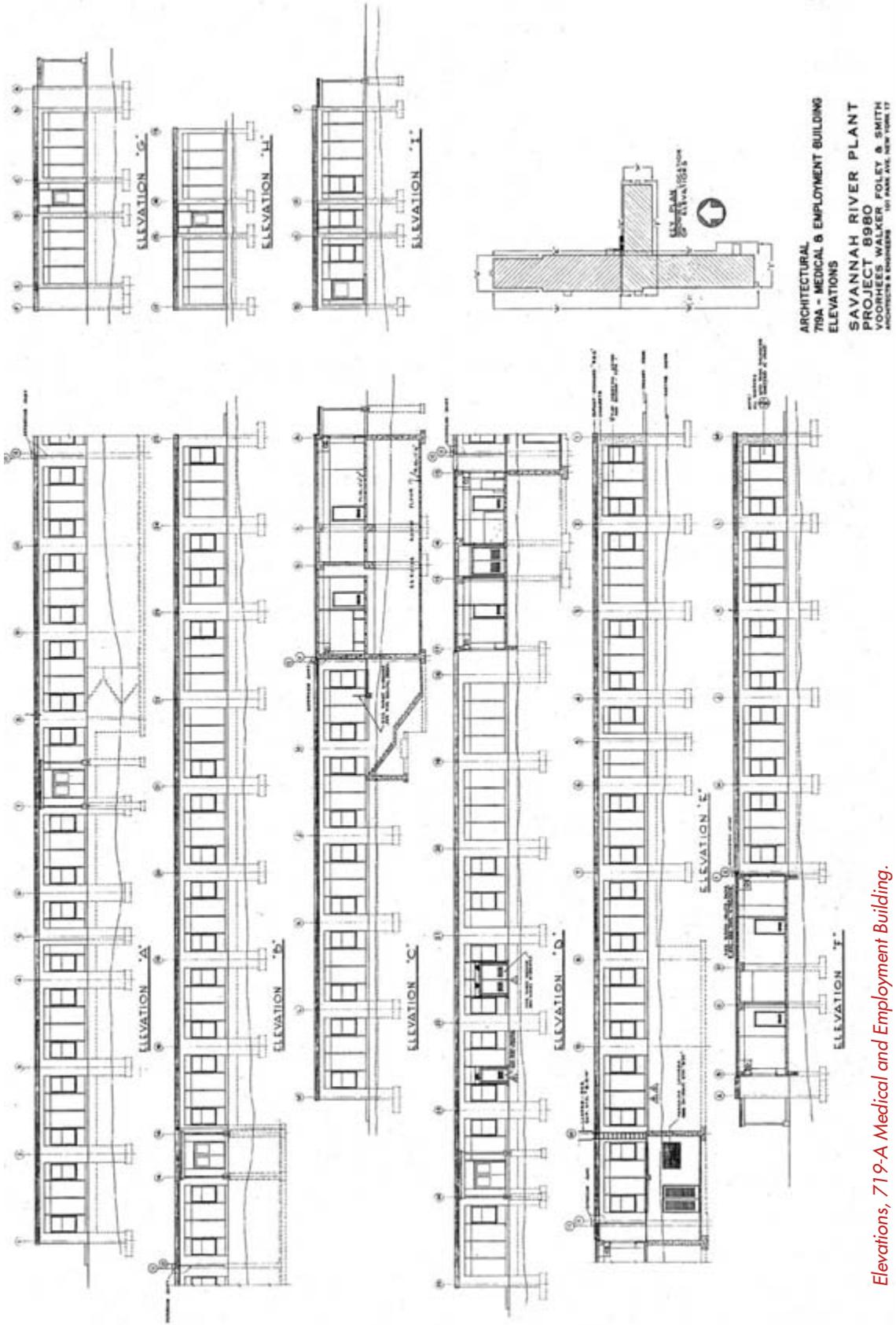
The emergency section actually consisted of two emergency treatment areas, one to provide treatment prior to transfer to an off-site hospital and the second to handle isolation cases. This isolation area, or “Special Emergency Room” as it is noted on plans of the building, consisted of a suite of seven rooms located at the southern tip of the building. The combined function of these seven rooms was to treat critically irradiated personnel in the case of a nuclear incident on the site. Individually, each room had a specific purpose.

The first room, entered from the 719-A corridor, functioned as a supply room housing medical supplies and protective clothing. A 2-foot wide pass-through window on the western wall allowed supplies to be transferred to the examination room without entry into that room. The second room was an examination room, the largest of the seven at 18 feet by 14 feet, and the centerpiece of the suite. From this location all other rooms in the suite could be entered. An opening in the northern wall of the examination room lead into a “receiving and clean-up” room, which measured 12 by 13.5 feet. The room could also be accessed from the exterior of the building through a “special ambulance entrance” on the southern elevation.

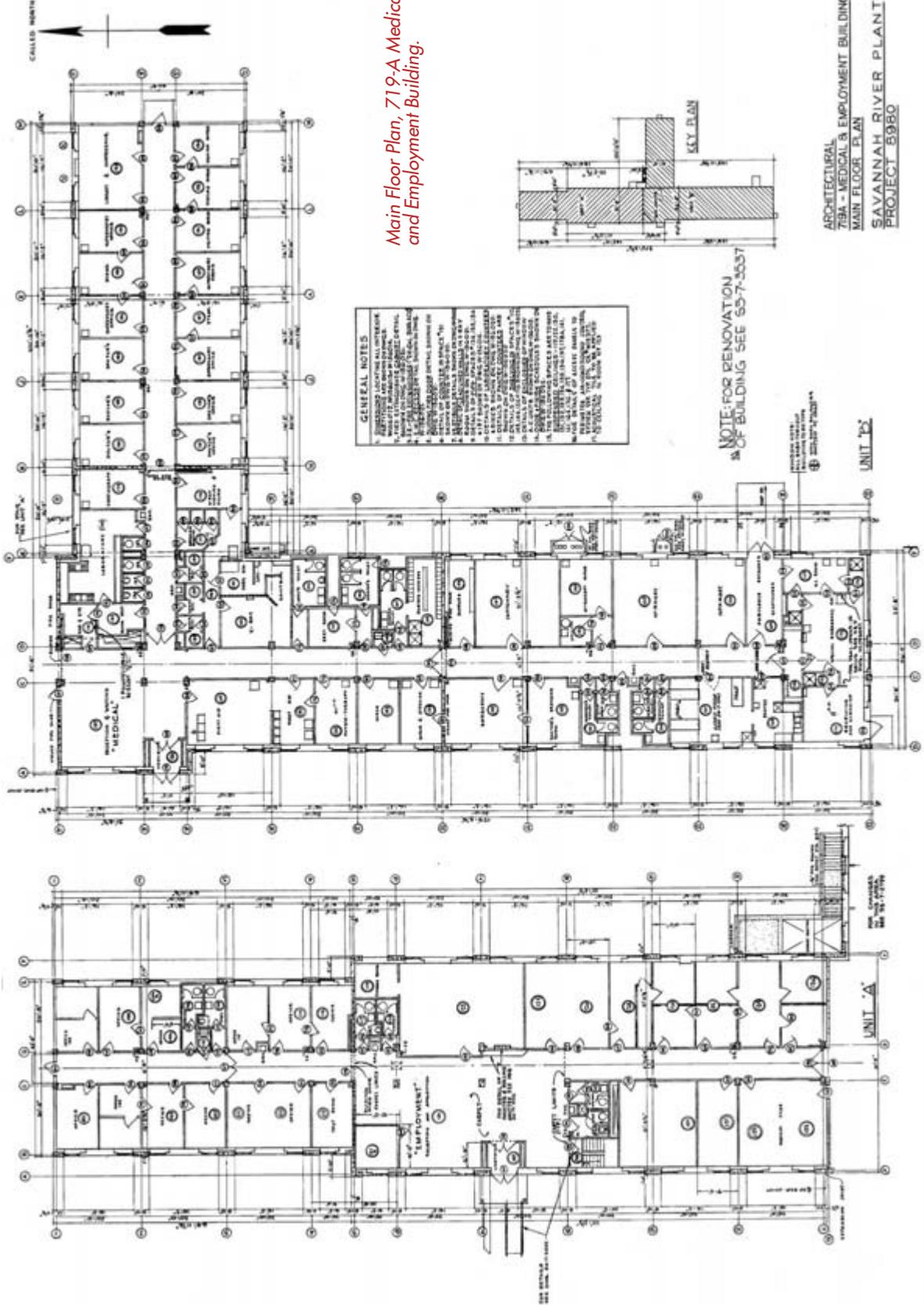
As a response to the SL-1 accident in Idaho, in which three men were killed and limited treatment options were realized, this room was outfitted with a lead bath sometime in the 1960s. Although never used, the procedure called for patients to be placed on a cot-like device that could be lowered into the bath by a system of pulleys. Three lead shields with transparent viewing plates attached to the bath would have afforded medical personnel some protection when treating contaminated patients. Two of these shields, one on each side of the bath, weighed 725 pounds each and were suspended from a sliding apparatus situated above the bath. The third shield was located at the end of the bath and weighed 800 pounds. Additional shields on casters could be moved to the

# PHOTOGRAPHIC SEQUENCE SHOWING DECONTAMINATION BATH PROCEDURE





Elevations, 719-A Medical and Employment Building.



Main Floor Plan, 719-A Medical and Employment Building.

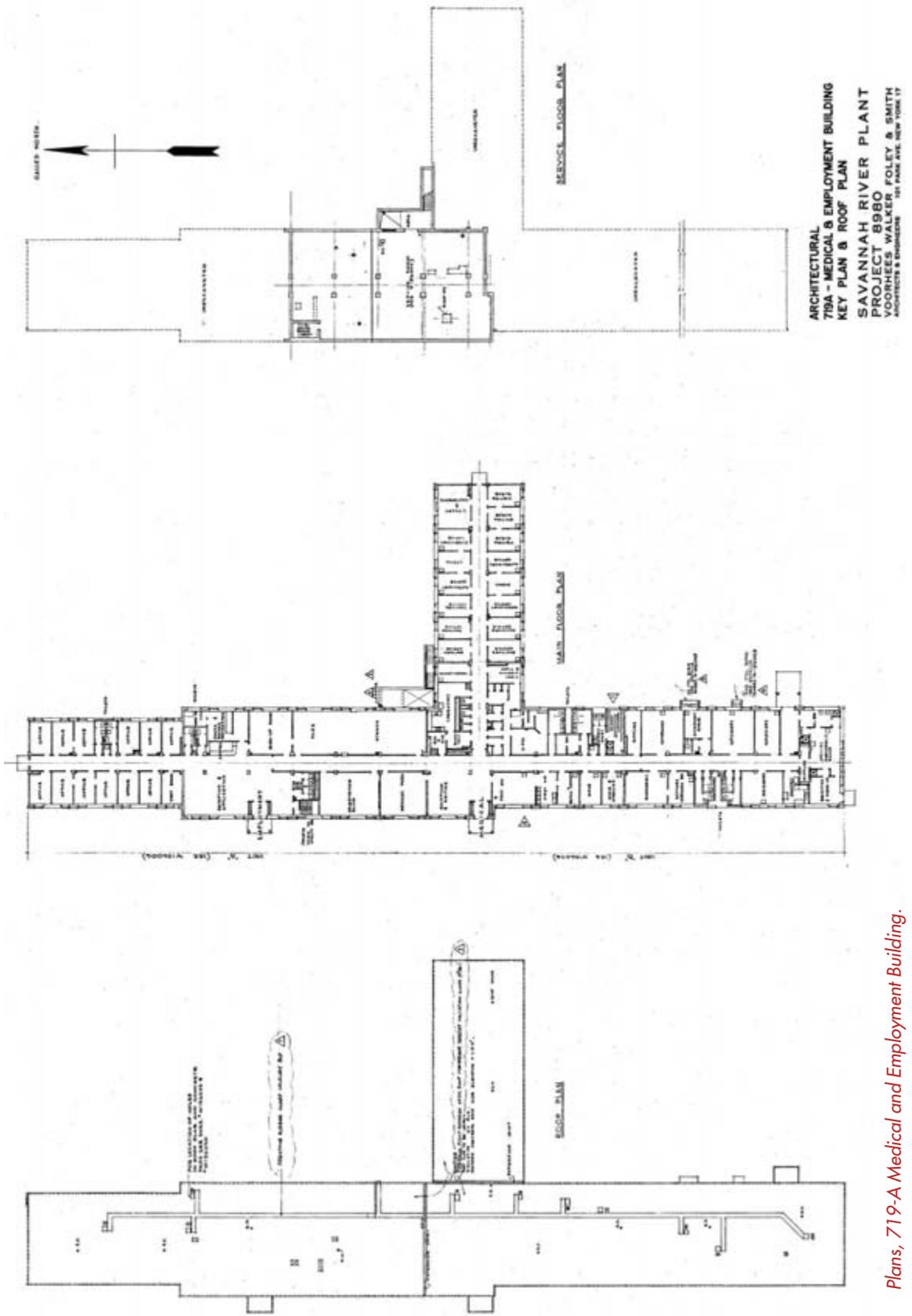
**GENERAL NOTES**

1. REFER TO ALL NOTES ON SHEETS 700A-1 THROUGH 700A-12 FOR GENERAL NOTES AND SPECIFICATIONS.
2. ALL DIMENSIONS ARE UNLESS OTHERWISE SPECIFIED.
3. ALL MATERIALS AND FINISHES ARE TO BE AS SHOWN ON SHEETS 700A-1 THROUGH 700A-12.
4. ALL WORK IS TO BE DONE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE BUILDING CODES AND STANDARDS.
5. ALL WORK IS TO BE DONE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE NATIONAL ELECTRICAL CODE AND THE NATIONAL MECHANICAL CODE.
6. ALL WORK IS TO BE DONE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) HAZARD IDENTIFICATION GUIDE.
7. ALL WORK IS TO BE DONE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST) BUILDING INFORMATION MODEL (BIM) STANDARDS.
8. ALL WORK IS TO BE DONE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST) BUILDING INFORMATION MODEL (BIM) STANDARDS.
9. ALL WORK IS TO BE DONE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST) BUILDING INFORMATION MODEL (BIM) STANDARDS.
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NOTE FOR RENOVATION  
OF BUILDING SEE 53-7-3537

ARCHITECTURAL  
700A - MEDICAL & EMPLOYMENT BUILDING  
MAIN FLOOR PLAN  
SAVANNAH RIVER PLANT  
PROJECT 5980

UNIT 1/8"



Plans, 719-A Medical and Employment Building.

desired position in the room. This room could be also sealed if necessary by a sliding solid lead door located in the passage to the examination room.

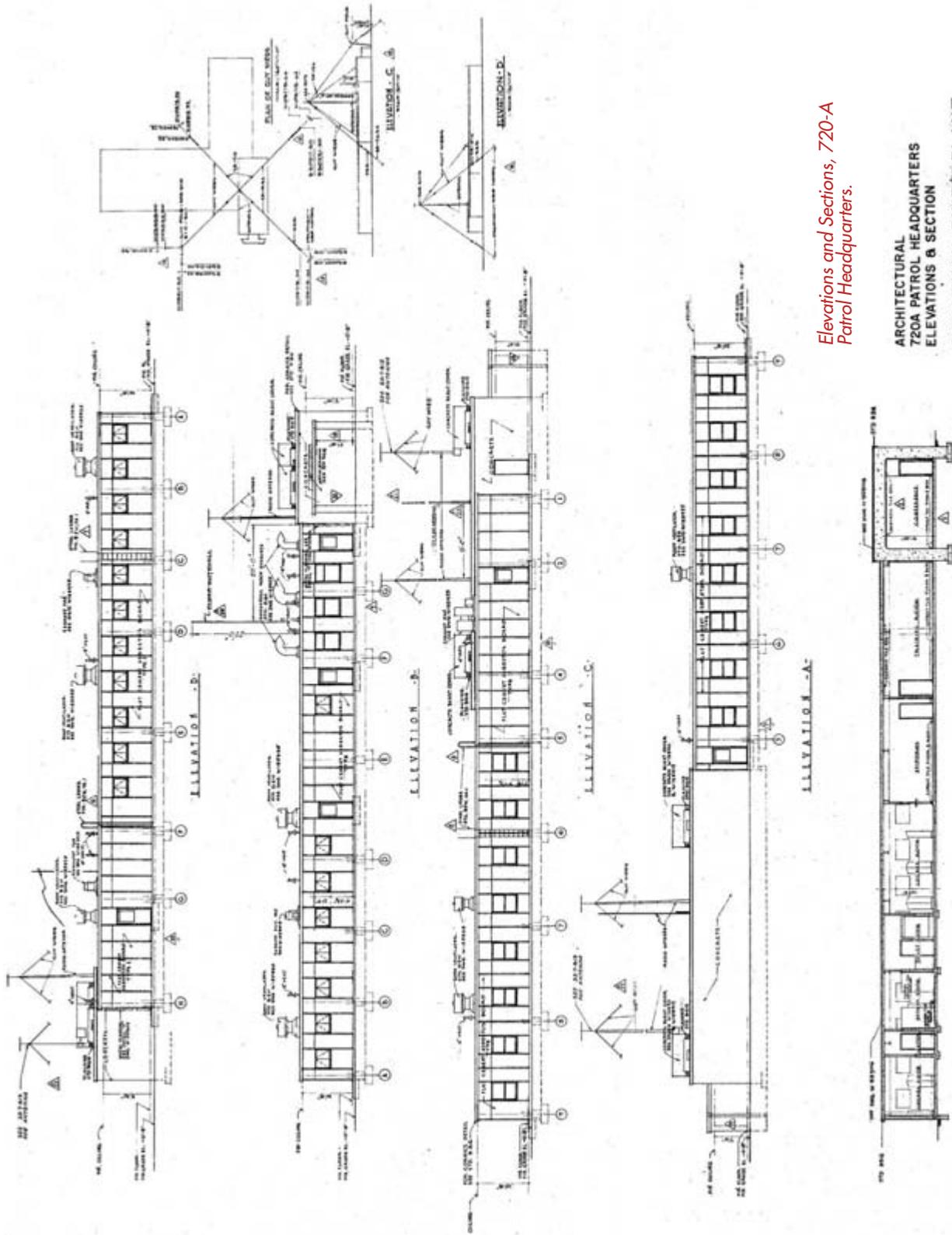
On the southern wall of the examination room, a door opened into the Health Physics Supply Room measuring 8 feet by 15 feet. This room housed health physics equipment and supplies and provided a space for material analysis. There were also three small shower rooms in the suite, each measuring approximately 3 feet by 7 feet; showers were designated as either a "clean" or "contaminated," and all could be accessed from the examination room.

719-A was a one-story Class II construction with a partial basement and a total building area of 26,490 square feet. Like the majority of buildings previously described, this building was constructed on a spread footing foundation of reinforced concrete with reinforced concrete wall piers, columns and roof slab. Exterior and interior walls were cement asbestos board. Firewalls throughout the building were eight inch thick concrete. Heating and air conditioning were supplied to the entire building.

#### 720-A: Patrol Headquarters

720-A is a single-story building with an irregular ell-shaped plan built using both Class I and Class II construction methods. The Class I portion of the main building contains a conference room, control room, utility room and emergency power generator enclosure for a total of 1010 square feet. In the event of an emergency, this section of the building was the planned command point for the entire plant and was therefore designed to resist bomb blasts and gamma radiation. Another pertinent factor in its construction was the structure's ability to become habitable and operational in minimal time following damage from a blast so that key personnel could continue to manage emergency operations.

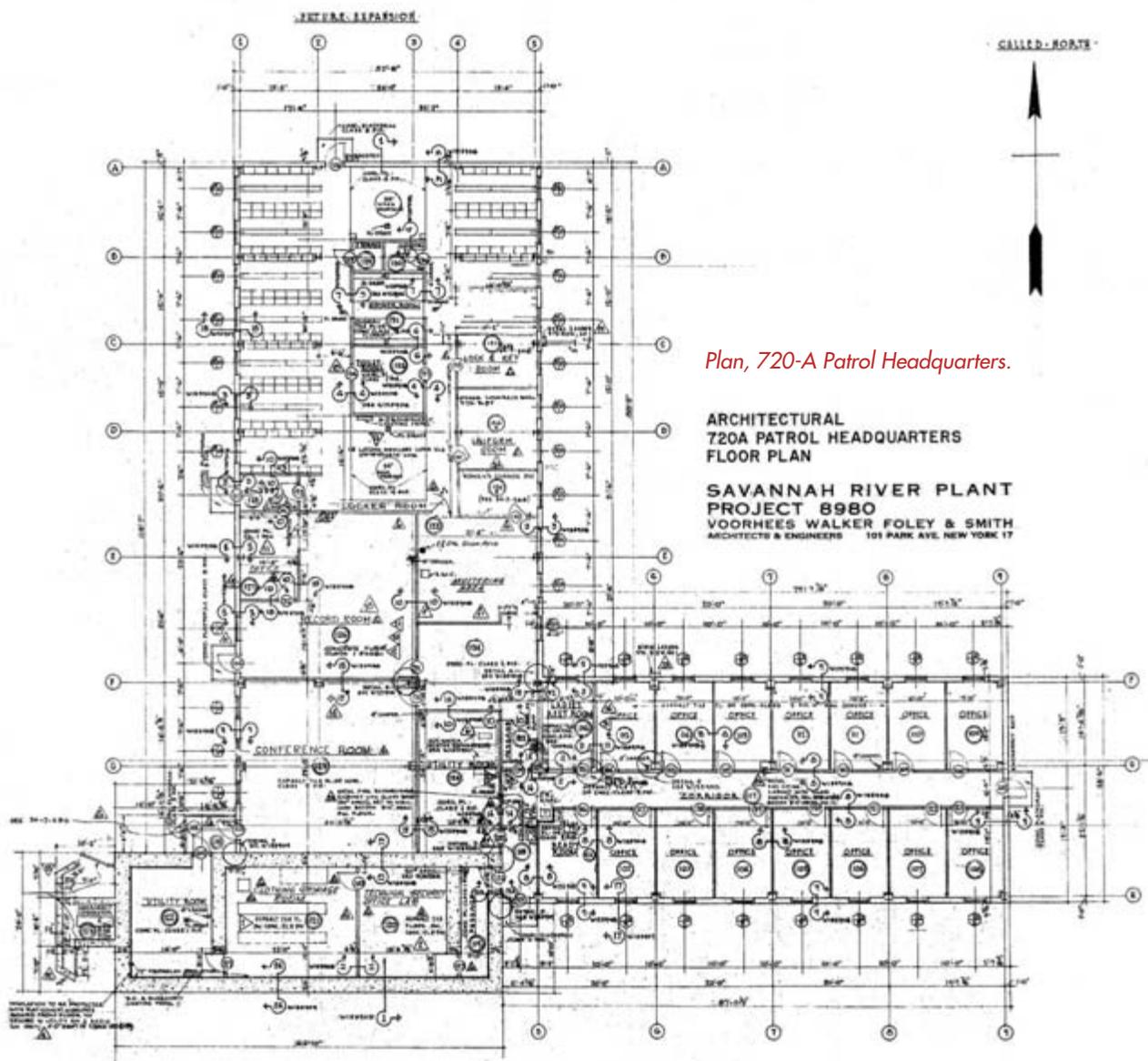




Elevations and Sections, 720-A  
Patrol Headquarters.

ARCHITECTURAL  
720A PATROL HEADQUARTERS  
ELEVATIONS & SECTION  
SAVANNAH RIVER PLANT  
PROJECT B980  
VOORHEES WALKER FOLEY & SMITH

SECTION I-I



*Plan, 720-A Patrol Headquarters.*

The Emergency Control Room was equipped for plant-wide radio communications and Teletype equipment, both Army and civilian. Area safety alarms, fire alarms and blackout controls were fully operational from this location. The opening of vault doors in the Administration Building could also be monitored from this location. The Conference Room was equipped with table and chairs and could accommodate approximately twelve people. The total area of the building is 11,180 square feet, with just over a thousand of that being Class I. The remainder of the building is Class II and houses fourteen offices, training room, gun room, mustering area, utility room, toilet and shower rooms, uniform storage and one ready room.

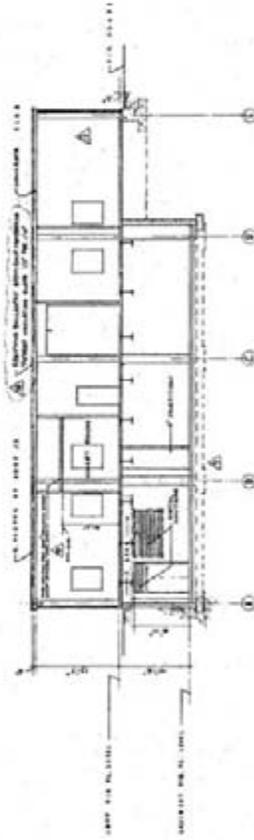
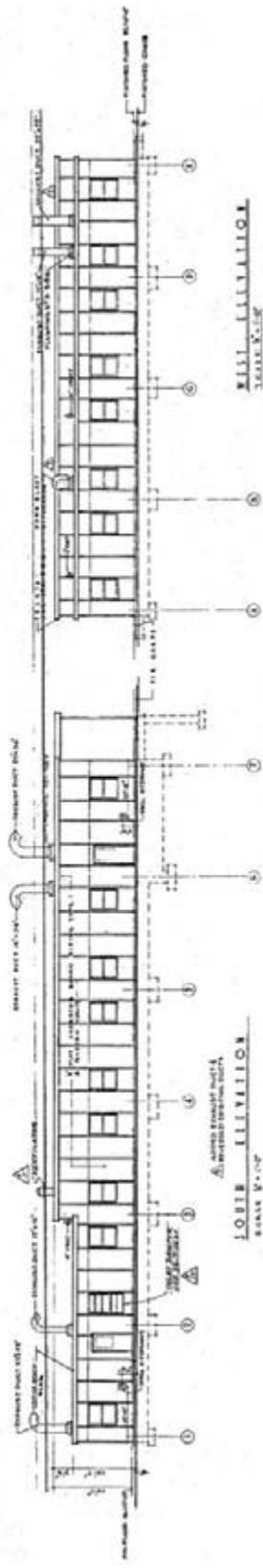
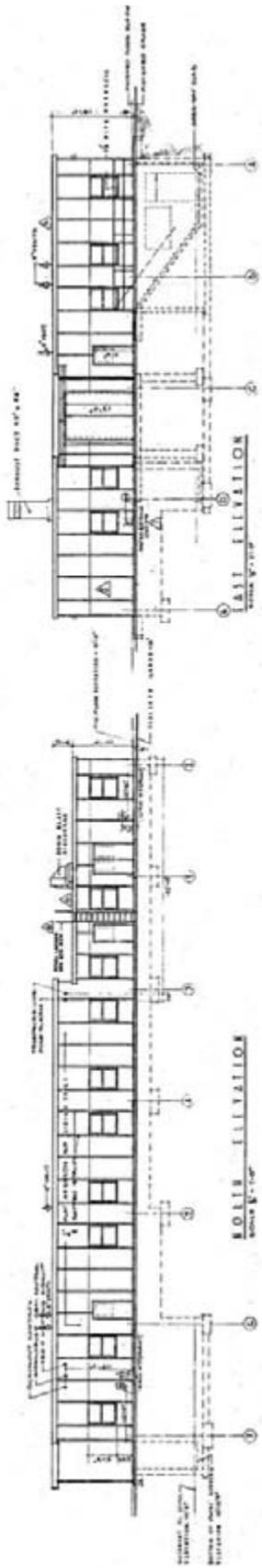
### 722-A: Instrument Shop

The function of this building was to provide facilities for performing major maintenance work on all types of plant instruments, measuring devices, and control systems that could not be repaired or tested satisfactorily at their installed locations. Fabrication of new devices was also completed in this building, which was divided into the following areas: a machine shop, instrument shop (pressure, temperature, flow, control, pneumatic, thermocouples, scales, etc.), optical shop, tool room, jeweler's shop, electronics shop, chart preparation, conference room, office facilities, rest rooms, locker rooms, and partial basement for mechanical utilities. A 1-ton monorail system was installed in the shop and electronic section to facilitate the use of portable tools.

The shop is a single-story Class II structure approximately 82 feet wide by 122 feet long. The foundation was of reinforced concrete with a spread footing foundation. Framing was structural steel with a concrete roof slab. Its roof height was 14 feet above the floor for just over two-thirds the length of the building, then dropped to 11 feet for the remaining length. Exterior walls, both inside and out, were sheathed with Transite panels and the same material was used for interior wall partitions. Ceiling treatment differed according to area with suspended Transite panels in shop offices, suspended and acoustically treated in supervisor and clerical offices and painted exposed concrete in other areas. Floors were also treated according to area and were either asphalt tile or exposed concrete, with the exception of quarry tile on shower room floors. Doors were hollow metal and windows were double-hung steel sash. Lighting was provided through a combination of fluorescent and incandescent fixtures, which could be blacked out from Patrol Headquarters in 720-A.

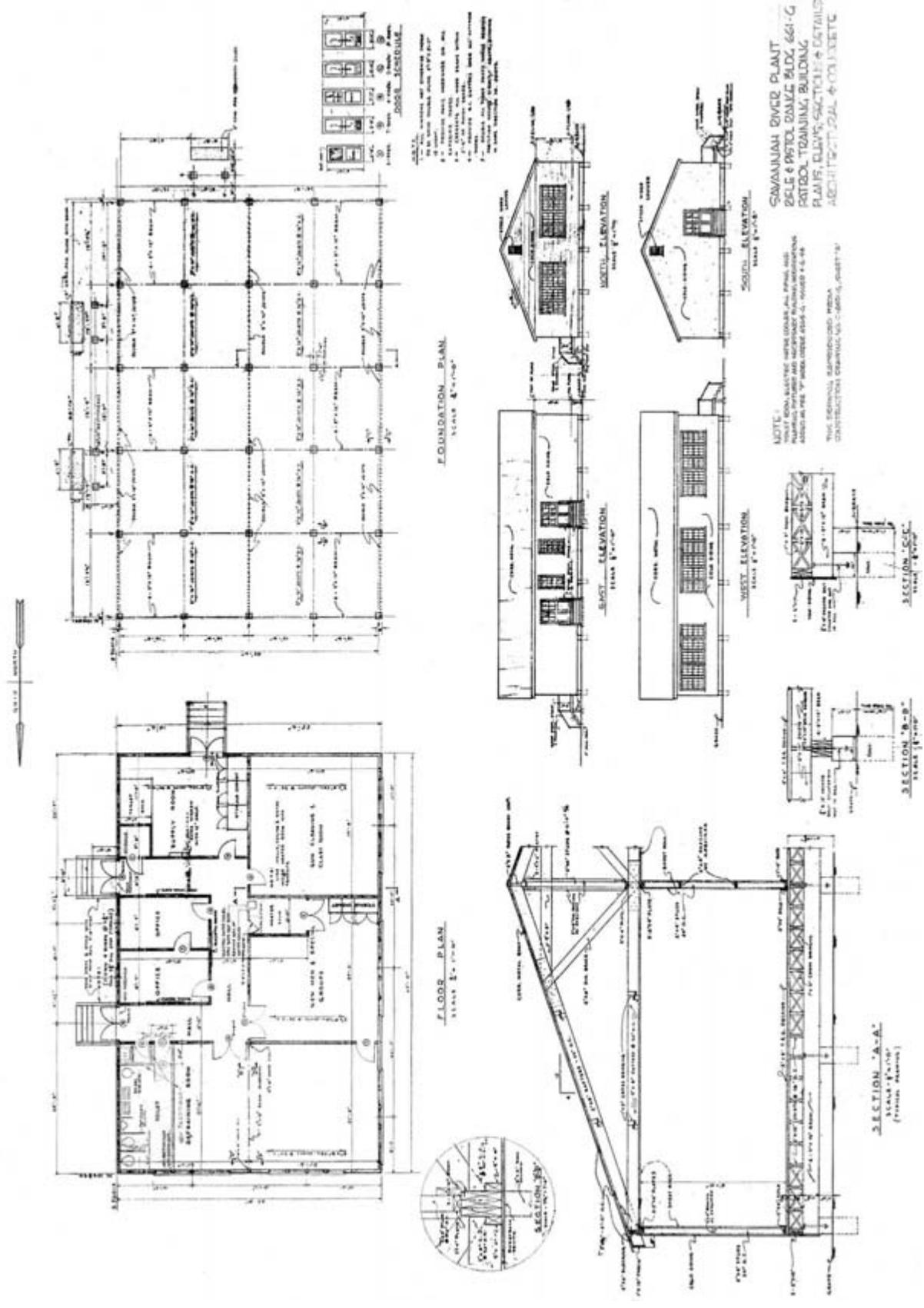






ARCHITECTURAL  
722 A INSTRUMENT SHOP  
ELEVATIONS  
SAVANNAH RIVER PLANT  
PROJECT 8980  
FORREES WALKER FOLEY & SMITH  
ARCHITECTS & ENGINEERS  
111 PARK AVE. NEW YORK 17

Elevations and Sections, 722-A Instrument Shop.



Elevations, Plans and Sections, 661-G Rifle and Pistol Range Building

### 661-G: Rifle and Pistol Range

Though this building is not located in the 300/700 Area, it is being treated here under the thematic topic of security, to which it is most closely related, as stated in the CRMP. G Area facilities include utilities and services for the entire plant outside of the fence line of the manufacturing and process areas.

This installation, consisting of a range building and two pistol courses, was used for the training of patrolmen and guards and was substantially complete by February 1952. The range house is a Class III structure, measuring 69 feet by 43 feet. Upon completion, it contained a retaining room, group meeting rooms, a gun cleaning room/classroom, supply room, two offices and toilet facilities. The building is a wood frame construction resting on a concrete pier foundation. Celo siding (asphalt-coated, cane fiber insulation board) was used on the exterior walls, while sheetrock was hung on the interior. Floors were tongue and groove planking on wood joists. Doors and windows were also wood.

Two firing ranges for shotgun and pistol practice occupy approximately 4000 square yards adjacent to the range house, all of which is graded and enclosed within a chain link fence.



## SUMMARY

Permanent construction began in the combined 300/700 Area on May 28, 1951. Quantities of some of the materials used provides an idea of the magnitude of the undertaking: 107,500 cubic yards of concrete; 8135 tons of structural and reinforcing steel; 1,665,000 square feet of cement asbestos board. The construction force peaked in late 1952 with 3,527 workers. Construction was virtually complete on March 15, 1954 with final acceptance of all facilities in 700/A Area by Operations on September 15, 1955.

## IV. SRP ADMINISTRATION

Two principal organizations were responsible for the administration of SRP. One was the Atomic Energy Commission and its successors, the Energy Research and Development Administration (ERDA) and finally, the Department of Energy (DOE). The other was the Du Pont Company. Both of these organizations were comprised of numerous departments, divisions and organizational units that performed a variety of functions. It is the goal of this chapter to describe the major divisions of responsibility within these two organizations, and how those divisions changed over time. In addition, this chapter will also cover the day-to-day world within the administrative headquarters of Savannah River, formally known as A Area.

### ATOMIC ENERGY COMMISSION

Savannah River grew out of the national organization that had as its primary purpose the development and production of nuclear and thermonuclear weapons. Its secondary purpose was the promotion of peaceful uses of atomic energy. During World War II, responsibility for the nation's atomic research and development program fell under the direction of the Manhattan Engineer District of the U.S. Army Corps of Engineers. After the war, however, a movement to place the atomic program under civilian control led to the passage of the Atomic Energy Act in the summer of 1946. This Act established a civilian-led U.S. government nuclear entity known as the Atomic Energy Commission (AEC), answerable only to Congress and the President of the United States.



The AEC consisted of five members, with one member designated as chairman. All members were to be appointed by the President and approved by the Senate. Commissioner terms were to be five years, but the first five commissioners would have a fixed term of two years, plus an additional term of one, two, three, four, or five years, so that each subsequent commissioner would have his five-year tenure staggered by a year. This strategy was to prevent an unwarranted accumulation of power within the Commission, and to allow smooth transitions. Shortly after its creation in 1946, the commission determined that it would have a decentralized administration structure, which more broadly was to be "the touchstone of future Government practices."<sup>1</sup> The Savannah River Operations Office (SROO) was the arm of the AEC that had jurisdiction over SRP.

The overall goals of the AEC, and the weapons and peaceful programs related to nuclear energy in the United States, were established in Washington at the AEC headquarters. The AEC headquarters staff could be divided into two groups: program directors in charge of the various commission projects, and management directors in charge of administration. The general manager, through assistant general managers and the commission division directors, carried out policies. The major divisions within the commission were Production, Research, Reactor Development, Contracts, Construction, Safety, Raw Materials, Isotope Development, Nuclear Education

and Training, Biology and Medicine, Licensing and Regulation, and International Affairs. The policies, programs, and oversight functions of the headquarters were carried out through the major field offices, called "operations offices." Each operations office was "a complete organizational unit with almost entire responsibility for the business and technical aspects of the programs under its jurisdiction."<sup>2</sup> These operations offices, originally located at Los Alamos, Oak Ridge, New York, Chicago, and Hanford, were given authority to hire and fire their own personnel and to set their own means of meeting commission objectives.<sup>3</sup> When Savannah River Plant was created, it too became one of the operations offices.

### Savannah River Operations Office

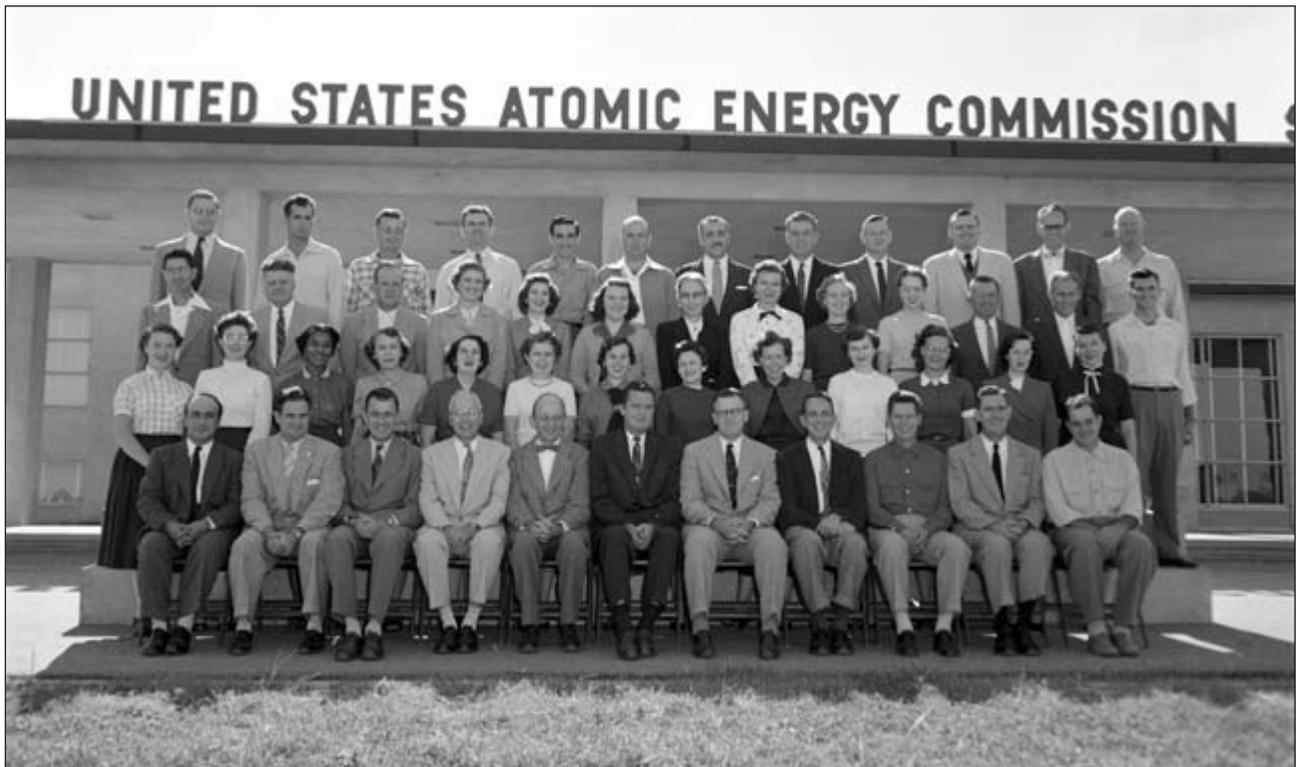
Overall guidance for the plant's construction and later its operation rested with the Savannah River Operations Office (SROO), established early in 1951. This office consisted of the Office of the Manager, Public Information, and the Assistant General Counsel. There were two adjunct offices, one at Dana, Indiana and a second at Wilmington, Delaware. Curtis Nelson was manager through the construction period; Bob Blair, his deputy manager, became Nelson's successor. The Operations Manager was charged with overseeing the production of fissionable and special materials, as well as fabricated items, (such as the plutonium warhead pits originally planned to be produced at Savannah River); oversight of engineering and construction program administration; supervision of the Dana Area Office; and the approval of purchases and contracts, with the further approval of the director of production for those valued over five million dollars.

The SROO geographical area of responsibility included not only the Savannah River production facility, but also AEC programs in South Carolina, North Carolina, Georgia, Florida, Alabama, and the former Panama Canal Zone. These responsibilities primarily included monitoring and coordinating with off-plant persons and organizations in issues related to atomic energy and radiation control and research, and providing public information.<sup>4</sup> In general, it was the Operation Manager's job to ensure the success of contracted operations and to advise the AEC's Director of Production in Washington about SROO programs. The number of AEC personnel at Savannah River would grow from 170 to 352 at the height of construction in 1953. The number of AEC employees decreased to 260 in 1954 and by 1960 leveled out at 228 workers.<sup>5</sup> The division of work within this group was familiar to Nat Stetson, a long time SROO manager. Stetson served as head of SROO from 1966 to 1980. During that period, he stated that:

The Operations Office was quite small.... We had something on the order of 180 to 200 and some odd people total for all activity.... I would say operations [in A Area] was in the area of no more than some 25 to 30 people. There was a reactor branch, a chemical separations branch, a fuel materials branch, a development type of branch that took care of the laboratory, and each of these groups would have five to ten people.<sup>6</sup>

Once construction started, the AEC managers divided their time between recruiting office personnel, monitoring the acquisition program, handling public affairs, the housing problem, and overseeing Du Pont's workforce. Six divisions helped the Manager with these goals: Organization & Personnel, Security, Administrative, Engineering and Construction, Technical and Production, and Budget and Finance.<sup>7</sup>

The Organization and Personnel Division's responsibilities were divided among three branches. The first of these, the Management and Personnel Operations Branch, continuously studied the SROO organization and management policies that were in place at SRP to assure maximum effectiveness and efficiency. In addition, this branch administered all aspects of the Government personnel program, such as recruitment, placement, and position evaluation. The second branch, Community Affairs, worked with other governmental and private agencies to provide needed services for the construction and operations forces, such as housing. The Industrial Relations Branch dealt with all aspects of labor and union relations to assure compliance with applicable statutes and regulations. This branch was also responsible for settling labor disputes and maintaining relationships with contractors, labor agencies, and related organizations.



*AEC Security Division in Front of Building 703-A, 1955.*

The Security Division of SROO consisted of five branches: Personnel Clearance, Plans and Operations, Survey, Security Education, and an Administrative Branch. As a whole, the Division was responsible for the planning, development, and administration of security activities within the scope of AEC security policies and programs, as well as assisting Du Pont with their security programs. It administered the clearance program, investigated security infractions, and developed and administered ongoing programs such as security education and visitor control.

The Administrative Division consisted of three branches: Procurement and Contracts, Property Management and Services, and Reports Coordination. As the name implied, the Procurement and Contracts Branch procured equipment and supplies for the SROO, as well as special items for Du Pont including vehicles, petroleum products and typewriters. The Division could approve orders of up to \$100,000 and make recommendations to AEC

management on orders exceeding that limit. The Property Management and Services Branch was responsible for the utilization, warehousing, and disposal of all government property on site. In addition, this branch performed various office services including mail, telephone, Teletype, reproduction, etc. The Report Coordination Branch insured that efficient handling of all reports to eliminate overlap.

The Engineering and Construction Division worked closely with the Du Pont Company to meet construction schedules and requirements through the actions of five branches: Construction, Engineering, Maintenance, Reports and Contract Review, and Safety. Among the responsibilities of this Division were the interpretation of AEC engineering standards for application and regular field inspection of all construction projects. As Laura Cameron, a secretary for SROO, recalled, the engineering people were “out in the field every day.”<sup>8</sup>

The Technical and Production Division consisted of five branches: Materials, Reactors, Separations, Radiation Control, and Manufacturing. Through these branches, the Division was responsible for insuring that research and process development programs were undertaken and executed to promote maximum utilization of technological developments and best practices.

The Budget and Finance Division was comprised of an Audit Branch, Accounting Branch, and Budget Branch and was responsible for the planning, development, and administration of policies and procedure regarding financial activities at SROO. This Division handled the receipt, custody and disbursement of all funds in accordance with AEC regulations, prepared budgets and financial plans, and maintained liaison with the Treasury Department.

Even though SROO did not run Savannah River—that was the job of the prime contractor, Du Pont—they did make sure that the plant was operated efficiently and within the allotted budget. As Nat Stetson, long-time SROO chief, stated:

Our job mostly was oversight, and to make sure that we still had all the money. We had the responsibility for handing out that money out and to make sure that the money we had from Congress... was going to do the job. So it was really financial control and control of operations to the point where we were meeting goals or having the plant come in on time, that kind of thing.<sup>9</sup>

## PRIME CONTRACTOR-- E. I. DU PONT DE NEMOURS & COMPANY

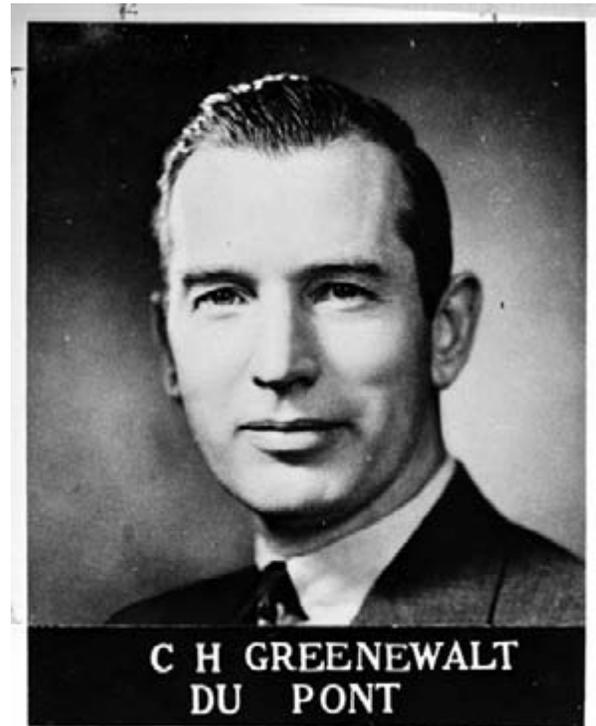


To ask anybody else to build the plant when you could get DuPont would be like settling for a rookie when you could get Babe Ruth in his prime.<sup>10</sup>

On January 31, 1950, President Truman signed a presidential directive authorizing the AEC to continue work on all forms of nuclear activity, including the development of the thermonuclear bomb.<sup>11</sup> A program jointly recommended by the AEC and the Department of Defense to produce materials for thermonuclear weapons

received presidential approval in June. The AEC had already estimated the construction costs for a new production center at approximately \$250,000,000, and Sumner T. Pike, Acting Head of the AEC, immediately began negotiations with Crawford H. Greenewalt, president of E. I. Du Pont de Nemours & Co., to head up that effort.<sup>12</sup> Truman requested funds from Congress for the construction of two heavy water reactors for the production of thermonuclear weapons on July 7, and shortly after, the AEC drafted a letter contract in anticipation of Du Pont's acceptance of the project.<sup>13</sup>

With the passage of the appropriations bill in early 1950, the AEC opened negotiations with Du Pont to build and operate the new plant. Du Pont had built the X-10 reactor and semi-works for the separation of plutonium at Oak Ridge, and had built and operated Hanford during World War II. In the field of atomic energy, they were seasoned players with a pennant under their belts. Crawford Hallock Greenewalt and his staff had participated in a period of intense creativity in which the labors of atomic scientists in their laboratories were duplicated on the production line under wartime conditions. Between 1942 and 1946, Du Pont's engineers and scientists had become experts within the atomic energy field. No other American firm could match Du Pont's expertise in the design and construction of production reactors and chemical processing facilities.<sup>14</sup>



*Du Pont President, Crawford Hallock Greenewalt*

As early as 1949, Greenewalt was aware in that a new plant was under consideration and that Du Pont would probably be approached. Hewlett and Duncan (1990:427) note that Carleton Shugg of the AEC had kept Du Pont aware of the developing situation through a company engineer that had worked at Hanford. AEC representatives visited Greenewalt formally in May of 1950 to appraise him of the proposed project and on June 8th the Wilmington firm was asked to complete the site survey; to design, construct, and operate a new reactor installation; and to act in a review capacity for the technical aspects of the reactors and the processes for the production of heavy water (Hewlett and Duncan 1998:430). The Commission also asked Du Pont to find a location that would not warrant the construction and management of a "company" town, a significant departure from previous military atomic energy plants established by the government.

Du Pont replied that it would consider the project if it had full responsibility for reactor design, construction, and initial operation. The "flexible" reactor design specified by the Commission called for a heavy water moderated and cooled reactor and Du Pont wanted to delay commitment to the project until they were able to review initial plans, particularly for heavy water production, and get a sense of proposed schedule. Greenewalt added a final proviso - that Truman himself request Du Pont's involvement in the project because of its urgency and its importance to the nation's security - which was done in a letter dated July 25, 1950.<sup>15</sup> Greenewalt's request was

aimed at squelching any associations with the “merchants of death” label that lawyer Alger Hiss had leveled at the corporation in the 1934 U.S. Senate investigation of the munitions industry. Truman’s letter, briefly written and to the point, would become an industrial icon for Du Pont. On July 26, Du Pont’s Executive Committee adopted a resolution to undertake the project. The internal resolution also established the Atomic Energy Division (AED) within Du Pont’s Explosives Department. The AED would be responsible for the new project.<sup>16</sup>

On October 18, Greenewalt wrote the company’s stockholders that Du Pont would assume responsibility for the construction and operation of the new facility. As at Hanford, the government would pay all costs and receive any patents that might develop out of the work; Du Pont would get an annual fee of just one dollar. Some of the contractual clauses that were first written into the Hanford contract and were duplicated in the SRP contract would become standard in operating contracts undertaken in the modern nuclear industry.<sup>17</sup>

As the prime contractor, the Du Pont Company was responsible for the development, design, construction, and operation of the Savannah River Plant. As stated in the contract covering Du Pont’s involvement at SRP, the company had very nearly full control of site management. Du Pont took the stance that the functions of the Atomic Energy Commission, and its oversight arm of the Savannah River Operations Office, as far as the operation of the plant was concerned, were limited to setting production goals; coordinating efforts in the national complex; ensuring the quality, safety, and accountability of products and operations; and auditing expenditures.<sup>18</sup>

Rather than establish a separate company to oversee operations at SRP, Du Pont made an “early and fundamental decision to carry out its Atomic Energy Commission assignment within the company’s traditional pattern” of organization, one that would mimic their management approach in commercial endeavors, so that all the company’s resources, including access to auxiliary departments like Engineering and Employee Relations, would be available to SRP. The company also drew from its existing workforce to organize the massive undertaking and to fill vital positions at the new plant.

Du Pont management extended from the company headquarters in Wilmington, Delaware. As soon as Du Pont agreed to take on the Savannah River project, an Atomic Energy Division, which fell under the jurisdiction of the Explosives Department, was established. Concurrent with this change, R. Monte Evans was made assistant general manager of the Explosives Department. Evans, who had acted as an informal point of contact between the AEC’s Carleton Shugg and the Du Pont firm on the developing expansion program prior to Du Pont’s re-entry into atomic energy development, was a logical choice.<sup>19</sup> H. F. Brown was at that time general manager of the Explosives Department.<sup>20</sup>

There were two distinct phases of Du Pont’s management of SRP, the construction era and operations. Construction was managed under two departments, the Explosives and the Engineering departments, with the assistance of auxiliary departments such as Legal and Purchasing. The Explosives Department had primary responsibility; it defined the scope of work and developed process specifications. Engineering acted as the architect-engineer. The Design Division of the Engineering Department handled all in-house design work; all final designs had to be approved by the Explosives Department, whether those designs were developed in-house or subcontracted.



A comprehensive system of rigid controls contributed to the overall efficiency of the construction effort. These measures were designed to evaluate performance, analyze trends, anticipate needs, formulate policy and take corrective action where needed. Control activities ranged from broad to specific and were added, modified or withdrawn as job requirements dictated. One invaluable tool used by management to keep abreast of the latest developments was the Main Chart Room. During the peak of construction, when day-to-day inspection of the entire project would have been virtually impossible, over 250 charts were maintained on every important aspect of construction – cost, procurement, design status, force, progress, and other vital factors, allowing management to make intelligent and informed decisions.

The undertaking at Savannah River was huge, and never was it more impressive than during the early construction years. As one of the early Du Pont plant managers, William Mottel, stated, “it was one of the largest undertakings in the history of mankind, including the Great Wall of China. When that thing was built—and I was there to see it—there were up to 38,000 construction workers involved.”<sup>22</sup>

In coordinating such a vast operation, there were the inevitable problems associated with a whole host of subcontractors, all of who had to be overseen by the prime contractor, Du Pont. On one occasion, when such problems were pointed out to Crawford Greenewalt, the president of Du Pont took the opportunity to comment on the nature of any such large and multi-faceted project:

I gather that your principal worry is the long and cumbersome path that is being followed from technical to the sub-contractors and back again. As to that I would certainly agree in principle that all paths should be as short and unencumbered as possible. I would like to point out, however, that a big job is inherently more cumbersome than a small job, in much the same sense that a ten-ton truck is not a vehicle in which one would choose to go cruising but nevertheless it becomes pretty necessary when one has ten tons to transport. We have at Savannah what is without question a very big job, and unless we are prepared to go out of our commercial business entirely we must use sub-contractors, and of course every additional link in a chain reduces inherently the degrees of freedom the chain has as a whole. All of this is not by way of excusing the present situation or calling it ideal, but I am quite sure that the bigger the job the more unwieldy it becomes. That is one of the prices one has to pay for undertaking anything of the magnitude we are attempting to do at Savannah. In other words, to try to be a perfectionist in the midst of an operation of that size is to be a bit foolish, and I would recommend strongly



*Caricature of Robert K. Mason, Du Pont's Field Project Manager During the Construction Era, as Drawn by Cartoonist J. Cauthen.*

against it. It is a question, if I can go back to my first analogy, of making a ten-ton truck go as fast and as well as it is reasonable to expect but not to let oneself go nuts because it does not handle as well or as simply as, let us say, one of the new Chevrolets.<sup>23</sup>

## EARLY ADMINISTRATIVE FACILITIES

Secrecy had required that no offices or warehouses be obtained prior to the announcement of the plant site. Despite the problems this would make for the construction force, this policy was followed to prevent rumors and land speculation. The staff was located at the Richmond Hotel until temporary space was obtained at Bell Auditorium in Augusta. The Augusta City Council also made space available at the “Old Filter Plant” at Augusta’s waterworks at 2822 Central Avenue. Both Du Pont and the AEC rented space there on a monthly basis. By December 19, the employment, medical, investigation, and housing offices were housed at the auditorium. Purchasing, receiving, accounting, transportation, time, and payroll were situated at Daniel Field. An employment office was set up in Aiken’s already established federal employment office. Laura Cameron, one of the very first secretaries for the AEC at Savannah River, recalled that she started work at Savannah River the “very first day.” As she told an interviewer, “I started in Augusta at the Waterworks Building and then we went into some temporary buildings that had been used during World War II, which is now Daniel Heights and where Aquinas High School is.”<sup>24</sup>



*The “old filter plant” at the Augusta waterworks served as office space for both Du Pont and AEC personnel.*

Though administrative functions were, for the most part, initially handled from Augusta, efficient coordination of construction activities necessitated the early establishment of field offices. Both DuPont and AEC made use of existing buildings onsite and the first field construction office was set up in the Bush House on Highway 19. A total of 37 acquired schools, barns, houses, and other structures along with the existing infrastructure of roads, power and communication ability were utilized by the early construction force in their attempt to minimize costs and locate as close as possible to the permanent facilities under construction.<sup>25</sup> The Grace Fields home, the Cato home, Ellenton’s Agricultural Building, the Buckingham property, Cassels Electrical Warehouse, and H. W. Risher Warehouse were also rented for construction field personnel use, as were Dr. Brinkley’s warehouse, drugstore (second floor), and six metal buildings. By January 15, the first major construction equipment began to arrive in Ellenton, signaling a new reality to the townspeople there.

The Augusta offices remained open until May 28, 1951, after which the Du Pont construction personnel reported to two temporary construction buildings, designated TC-1 and TC-2, on the site. AEC personnel remained at the

## DANIEL FIELD BUILDINGS



A. Atomic Energy Commission Building



B. Du Pont Timekeeping



C. Du Pont Purchasing



D. Du Pont Receiving

waterworks until June 11, after which they reported to Wings D and E of TC-1.<sup>26</sup> The Augusta firm of Patchen and Zimmerman designed the temporary construction or TC Area, as well as the adjacent cloverleaf, the first in the state.<sup>27</sup> The firm's inventive design work created the most recognizable area layout at the site, later known as B Area. The focus of the new area was two massive cartwheel-shaped steel buildings, each constructed of multiple prefabricated Butler and Braden buildings joined to a central rotunda building. Due to their unusual design and their easy identification from the air, these buildings became symbolic of the site.

The AEC had one or two wings in one of the two TC buildings.<sup>28</sup> Laura Cameron was there the first day that the TC Area was opened. "We went over on the first day that the TC buildings were occupied.... I even got the privilege of driving one of the government cars over that morning, so as to get everything over there." Cameron recalled that conditions there were fairly primitive. There were gnats and there was no air-conditioning. "We



*Aerial View of the TC Area and Cloverleaf.*

had fans... The efficiency experts came around to install fans. Where were they installing the fans? Five or six feet up in the air.... All they did was blow the papers off your desk. So then you'd bring your own fan and put it under the desk.<sup>29</sup>

## OPERATIONS ADMINISTRATION

Once the A Area facilities were completed they were turned over to the Atomic Energy Division of Du Pont's Explosives Department, ultimately responsible for the company's management of SRP. Under the division head were three managers over the functionally divided Technical (originally Research), Control, and Manufacturing

(originally Production) divisions. The Technical Division, during the design and construction phase, was responsible for development of the operations facilities and their equipment; initial engineers who served important functions in the Technical Division included V. R. Thayer (heavy water), J. C. Woodhouse (metallurgy), D. F. Babcock, and C. W. J. Wende (reactor physics and development). As Savannah River went into operation, the Technical Division took on more responsibilities, including the acquisition of technical and scientific data and the development and evaluation of process requirements. The Technical Division was also responsible for the operation of the Savannah River Laboratory. William C. Kay was the original manager of that division.<sup>30</sup> The Control Division was responsible for all administrative, cost control, accounting and office management functions.



*SRP Operations Staff Photo, 1959.*

Wilmington's Manufacturing Division, also known as Production, was responsible for the operation, maintenance, and security of Savannah River Plant overall; for assuring that design, construction, and modifications were carried out effectively and as necessary; and for safety and quality in general. The most important section of the Manufacturing Division was Process. The Process Section coordinated work with Du Pont's Engineering Department, analyzed Technical Division information and prepared it for use in production, worked closely with the Works Technical and Works Engineering Departments to overcome problems and make improvements, and helped with the budgeting and coordination of major activities. The Process Section also acted as liaison between

South Carolina operations and the Atomic Energy Commission and its other contractors concerning engineering and process matters.

As one of the components of the Manufacturing Division, the Works Technical Department served very important functions assuring continued safe and efficient operations. There was a department for each major manufacturing activity at Savannah River, and departments for overall concerns such as Reactor Technology, Separations Technology, Raw Materials, Health Physics and Analytical Laboratories. Works Technical provided guidance for operations, initiated and followed facility improvement tests, evaluated results, and very importantly served as the channel through which production requested assistance from the laboratory and worked with the laboratory to translate research and development efforts there to plant operations. Works Technical also prepared Test Authorizations and Reactor Startup Authorizations, which were formal notifications granting permission to begin operations activities according to normal practices or deviating from normal practices. Of great importance to the site in all areas was the Health Physics Department, which was responsible for monitoring contamination and potential contamination both within the site boundaries and in the wider region.

Also in the Manufacturing Division were the Production Departments. As the name implies, these departments were responsible for operations in the various plant areas in accordance with the technical standards developed by the Wilmington Technical Division. Production also wrote operations procedure manuals for normal and abnormal conditions.

The Works Engineering Department of the Manufacturing Division included the Power Department, which supplied water, steam, and electricity to the entire site. Its services could be likened to a public utility. The Power Department personnel were the first to occupy each building area as it was completed, allowing the power workforce time to check all power equipment and to inspect all domestic water and sanitary waste treatment facilities to assure they were ready for use. The first work force report showed 132 employees on the payroll and one source notes that over half had previous power-related work experience. Les Ahrens was power superintendent from start-up to 1955, after which he was transferred to the GS Department. Art Kroll (1955-1961) followed Ahrens, after which came E. P. Eckhardt (1961-1976), F. W. Kanne (1976-1977), then Hal Smoland and Joe Jiunnes in the 1980s.

When designed, the power facilities at Savannah River were considered one of the largest industrial-types power facilities ever built. Nineteen coal-fired boilers were operated with a combined capacity of almost 2.5 million pounds of steam per hour at pressures ranging from 325 psig to 900 psig. About 450,000 tons of coal was burned annually to generate sufficient steam to operate the plant. The steam is used for process needs and for electrical generation. Steam driven turbogenerators in P, K, and D areas generated electricity and additional electricity was purchased from South Carolina Electric and Gas Company. In 1980, Savannah River was their largest customer. The electricity was distributed over 190 miles of transmission line; the load dispatcher's office in the control house (Building 751-A) coordinated the transmission of purchased power and the interchange of power between generating stations.

The Power Department also operated the Site's water systems. The department operated 52 water wells, 33 deep wells, and 19 shallow wells that were capable of providing almost 45 million gallons a day for domestic and

process uses. The surface clarification water plant in D Area was under their administration as were the water-pumping stations that supplied approximately 510,000 gpm of cooling water to the 105 reactor buildings. That translated into pumping 533,000,000 gallons of water per day. The operation of seven large cooling towers and seventeen smaller towers was also part of their job, as was responsibility for the operation of the standby electrical generators. Finally, the department was responsible for the sanitary waste treatment facilities and the fulfillment of regulations later passed for meeting the discharge requirements of the site's NPDES permit.<sup>31</sup>

The Maintenance Department, under Works Engineering, played an equally important role. They were responsible for the care and maintenance of non-electrical stationary equipment in the areas. The canyon mockup facility in F Area was operated by Maintenance. Process equipment and interconnecting piping (known as jumpers) were readied for remote installation in the canyons in the mock-up building. The Electrical and Instrument Departments were tasked with the repair of motors, electrical distribution systems, process controls and instruments. Large repair shops were located in A Area, where difficult jobs were undertaken, while satellite repair shops were situated in the areas where smaller tasks could be completed. The two departments were joined in 1961 under the direction of Harold Bowman and Jack Gosnell.

The Project Department, another department within Works Engineering, undertook smaller construction projects, providing specialized engineering assistance needed in maintaining specifications and standards, evaluating problem areas, and improving existing facilities through capital and cost projects. Initially, under first superintendent Bill Christy, vacated houses and the Ellenton School Building were renovated for use as temporary office space for Operations. By the 1970s, this department was responsible for the design, development and construction of equipment for processing high-level liquid waste, beginning with the sludge transfer process. Its staff included engineers, estimators, drafts persons, project assistants and clerical personnel. Other service departments performed the necessary support, administrative, and employee and public relations functions.

The Wilmington Technical Division was responsible for new products and processes, and for major improvement work, as well as for establishing technical standards. The division also maintained technical liaison with the Atomic Energy Commission and other sites under subcontract to the commission. The three technical sections in Wilmington worked with the Savannah River Laboratory by supporting and reviewing their efforts and coordinating the exchange of information between the laboratory, other Atomic Energy Commission sites, and the sections in the Manufacturing Division. The Technical Division also served as a channel for communications between field operations and Du Pont's Wilmington auxiliary departments and the Executive Committee.

At Savannah River, the laboratory organization was initially divided into three broad functional divisions associated with general physics, the reactors, and separations. In general, the laboratory was responsible for most development work, the testing of process modifications, maintaining the plant's technical standards, and approving test authorizations. The Physics Section dealt with broad theoretical, experimental, and criticality data, including the assessment of new reactor loadings. The Engineering and Materials Section developed and evaluated designs and fabrication techniques for reactor assemblies and their constituent components. Separations and Services operated the laboratory facilities and made improvements to chemical separations processes and equipment.<sup>32</sup>

**Table 6. Officials Initially In Charge:**

<b>AEC</b>	<b>Du Pont</b>
Curtis A. Nelson, Manager (Howard M. Miller, Administrative Assistant to Mr. Mason)	Robert K. Mason, Field Project Manager 1950-1955
Arthur L. Tackman, Personnel	J. W. Mercke, Employment
Clarence A. Bergan, Labor Relations	Harry Magoon, Engineering
W. C. McKelvey, Housing	H. A. Andrews, Housing
James Hopkins, Property and Procurement	J. W. McAuliffe, Control Department
George O. Robinson, Public Information	E. B. Riggan, General Accounting

Source: Savannah River Site at Fifty, 140.

## DAILY LIFE IN A AREA

Daily life in A Area was much better than it had been in the TC buildings. For one, the A Area buildings were permanent, and they had air-conditioning. In fact, sometimes it was too much, and unlike the TC buildings, the windows in Building 703 could not be opened from the inside. Laura Cameron, who worked in A Area until her retirement in 1973, stated that there were times she wanted to throw her typewriter out the window in order to get at some fresh air.<sup>33</sup>



*IBM Machines in the Accounting Department Located in the Basement of 703-A.*

Another improvement in A Area was the presence of the main site cafeteria, located behind the administration building. Cameron stated that most people, probably two-thirds of all who worked in 703, took advantage of the inexpensive food offered there. The remaining third brought their lunch, as did Cameron herself, since she worked in personnel and usually had to be available during regular lunch hours for people requesting interviews.

Another routine was the Friday morning safety meeting. Only if you were in the field were you exempt from the weekly safety meeting. As Cameron stated, "we were conscious of [safety] things right there in the administrative building. I think it was taken very seriously."<sup>34</sup>

Just as important as the lunch and safety routines was the institution of car-pooling. During the first two decades or so of the operation of Savannah River, it was customary for employees to car-pool, and this was just as true for people in A Area as it was for employees in other parts of the plant. Cameron recalled that the only bad thing about the job was the travel. "But getting into a car pool 25 miles each way, each day, wasn't all that bad. Getting up so early in the morning [was a problem]. If you left the house later than 10 minutes to seven, you were going to be late for work. You knew you had to be there [at work] at a quarter of eight, and you left at 4:15 in the afternoon."<sup>35</sup>



*Car-pooling was a way of life at SRP.*

It just amazes me to see all these cars coming from the plant with just one person now. Everybody rode in carpool and that went on up to top management, it was a social institution...you were sort of careful who you got in your carpool, you tried to get people who would stay awake for one thing on their driving days. The ideal carpool was five people. You just drove one day a week.<sup>36</sup>

The A Area work force was so disciplined, and accustomed to the routines of carpooling, that the A Area buildings would just empty out at the end of the day without much incident. As Cameron recalled:

The nice thing about it, it was automatic. You had people coming out to about three different streets. We'd come out to the parking lot from the Administration Building from two different exits. And there were also Du Pont people coming out, and also from the Medical and Personnel

buildings. It was just automatic. People were just so great. They'd put their finger up and one car would go in and then you'd go, and then another car would go in and then you'd go, and so on. They never needed a patrolman or anything there to help. It was just an automatic thing.<sup>37</sup>

As for the workday, every employee had a different take on his or her experiences in A Area. In the case of Laura Cameron, she started out as a secretary and soon moved up the ladder. She was by turns a clerk in Personnel Records, and then secretary to the Personnel Officer, before eventually becoming Personnel Management Assistant. It was during that tenure that she interviewed people and even visited colleges to recruit for the AEC. "I took care of all federal personnel files; they were in my office. I was sort of the Employees Relations Person. If they had a complaint, they came down to see me. I scheduled the physicals and reviewed job descriptions and went out and helped write job descriptions and things like that." Officially, her title was Management Personnel Analyst within the Personnel Division of the AEC's Savannah River Operations Office (SROO).<sup>38</sup>

It was during that period that Cameron first met with and finally worked for Nat Stetson, who headed up SROO from 1966 to 1980. As she recalled years later:

When he (Nat Stetson) first came to work with us as a young engineer, his office happened to be right across the hall from where I was working. I used to type a lot of his papers for him. He was just a brilliant young man. He moved right on up to become the manager. He was fair and considerate. I just thought he was a fine person, always have and continue to think so.<sup>39</sup>

Nat Stetson, for his part, thought a great deal of Laura Cameron, and even made it to her 80<sup>th</sup> birthday party, many years after both had retired. Stetson, of course, had his own reminiscences of A Area. In particular, Stetson recalled the rather frequent trips that Glenn Seaborg, then chairman of the AEC, would make to Savannah River in the late 1960s, during the height of the Transplutonium programs.

He'd come to the plant and then we'd just walk around and talk. We used to like to walk. On one occasion, Seaborg went down to Florida with his family and he came back up through the Savannah River Plant and called me and said could he stop by? I said sure. And he had two burlap bags filled and he wanted them brought into a cool area. So I sent the guards down to get them. The bags were full of snakes. The guards freaked out. But anyway, we got the damn bags in the air-conditioned area. But that was Glenn, you know. You could never tell what the hell he was going to come up with.<sup>40</sup>

That general period of the Seaborg years, during the 1960s and early 1970s, was probably in hindsight one of the best eras in the decades-long history of the Savannah River Site. When Laura Cameron retired in 1973, Stetson had the occasion to tell her that she was "leaving at the best time." As Cameron would later comment, "perhaps he already knew that it was going to go from the AEC, to ERDA, to the Department of Energy, all of which would take place before that decade was out. This development would in turn exacerbate another unfortunate trend in the history of Savannah River: the falling out between Du Pont and the Department of Energy. This trend began in the 1970s, but really cranked up in the 1980s. It was probably not the sole reason for the departure of

Du Pont from Savannah River in 1989, but it certainly played an important role. Much of this development was played out right in the offices and hallways of the main administration building, Building 703-A. This is one of the subjects of the following section.

## LATER YEARS AND TRANSITION TO WESTINGHOUSE

Part of the story of the demise of the AEC and the rise of the Department of Energy was that the level of secrecy practiced on all levels of the AEC was no longer acceptable with the government by the 1970s. The Civil Service Commission, for one, insisted that no branch of the government should be exempt from its review, as had been the case with the Atomic Energy Commission.<sup>41</sup> Bit by bit, the veil of secrecy that had always hung over the AEC was slowly lifted, as there were demands for greater government accountability in the realm of nuclear energy.

The development that really pushed the move toward greater accountability was the rise of environmentalism, beginning in the 1960s, but really gathering steam in the 1970s. Pushed by the Oil Embargo of 1973 and the steady decline of domestic oil production, the environmental movement was both a conservation movement and a move to clean up and preserve the general environment from generations of industrial abuse. Atomic energy production, though relatively new, was certainly seen as one of the forms of industrial abuse that required correction. At Savannah River, this meant, for the first time, the presence of special interest groups that were intensely curious about the environmental consequences of work at the plant site.



*Du Pont Plant Managers (from left to right) William J. Mottel (1977-1979), Julian D. Ellett (1957-1966), J. Armand Monier, Jr. (1966-1972), Kenneth W. French (1973-1976).*

By the early 1980s, all of these developments had added extra stress to the relationship between Du Pont and DOE. It was a relationship that always had the potential for abuse, especially as the nature of that relationship changed over time. In the 1950s, there is no doubt that Du Pont had the upper hand, if you will. Du Pont had the experience, dating back to the Hanford and Oak Ridge work during the Manhattan Project. The AEC, though heir to the Manhattan Project, was really a brand new organization that was barely four years old at the outset of the Savannah River project. It could not have run Savannah River without Du Pont, and both sides knew it. Du Pont was able to demand, and receive, a letter from President Truman, asking Du Pont to run the new nuclear facility. In the contract that followed, Du Pont was given the right to run the plant as they saw fit. The AEC had oversight, but it was only at the macro-level. In effect, the oversight basically turned out to be financial. As one disgruntled DOE manager would later put it: the government did not have a contract with Du Pont, it had a treaty.<sup>42</sup>

There can be little doubt that Du Pont ran Savannah River Plant as well as virtually any other firm could have done, and far better than most. Even so, there is evidence that Du Pont was also arrogant in its dealing with SROO, especially as SROO began to expand its perceived mission. William Mottel, one of the Du Pont plant managers in the late 1970s, recalled that Du Pont's initial attitude could be boiled down to something that was fairly blunt:

The government at that time (1950s) was smart enough to leave well enough alone. Du Pont made it clear: we are going to run this thing for you (AEC) because you said it was for God and Country. You need [the product] and we understand that. We're going to run this plant like we run everything else at Du Pont. You're going to have to pay our people. We'll have to get good people in here. Don't you worry about why we are paying them so much. That's none of your business.<sup>43</sup>

Mottel went on to state that, "we didn't let anyone from the government even go into the facility, unless they were going through to show somebody something that they couldn't monitor. Today they (DOE) are out there running the damn plant. It's pathetic."

As far as Du Pont was concerned, there was definitely a line that was not to be crossed. Mottel remembered that when he headed up Separations, before becoming plant manager, there was an area superintendent who came to him and said, "I just threw a couple of government guys out of my operation. They came out here and said they were going to do something, and I told them, no, you are not." Mottel told the superintendent that he'd done the right thing.<sup>44</sup>

Stetson, on the government side of the issue, remembered that there was some tension from the beginning of the relationship:

We (AEC) were the neophytes and they (Du Pont) were the knowledgeable people. They had a job to do, on a time schedule, which we set for them, and we could be looked upon in a sense to be in the way. We didn't always get along; we had differences, many differences of opinion, but we were able to resolve those differences at some level because of the relationships [we] had developed with Du Pont.<sup>45</sup>

This arrangement started to break down in the later 1970s. Mottel recalled that one time he was up in Wilmington, negotiating with the government people and SROO over the details of a renewal of the much-renewed “five-year contract” for Savannah River.

Nick Letang [a Du Pont vice president in corporate management] was there. Nat Stetson was there. We were talking about getting organized for another five-year contract. Nat Stetson says, “I’ve got a problem. Washington thinks that you are making money out of this, and that you’re making lots of it, and we hate to tell you this because we don’t think it’s that bad, but they do. They don’t think that Du Pont could really be doing this [work] as a God and Country venture—a dollar for the whole darn thing. [Du Pont’s] not stupid; they got to be making money.” So Letang stood up right away and said, “You think we’re stealing money? Tear up the contract right now.” Nat Stetson said, “No, no don’t, we don’t want to lose you. I just wanted to tell you that there are people in Washington that won’t accept the fact that Du Pont took on this project to be nice....” [Eventually] the government said they were going to bring in a flock of auditors, make some studies, and find out if we were really stealing something. And boy, you can imagine how people felt when you said that.<sup>46</sup>

Another bone of contention was the issue of the radioactive wastes in the many waste tanks in F and H areas. According to Mottel, Du Pont wanted to start processing the waste in the late 1970s, while the government dragged its feet, probably because of the money involved.

We knew how to do it [process the waste]; we knew the technology. And then these government guys would come in and say, “Well, what do you need a hundred million dollars for? We can build aircraft carriers for that. Just build more waste tanks.”<sup>47</sup>

By the 1980s, it was clear that there were going to be more problems associated with the clean up of the plant site than Du Pont wanted to deal with. This was aggravated by the issue of financial liability in the case of a nuclear accident, which had never before been an issue with the AEC. The threat of liability became a sore point with Du Pont, which had never run the plant for a profit. By this time, there were other firms equally capable of running the plant, and Du Pont began to consider getting out of the nuclear business. The departure was announced in 1986, and was effective in early 1989. At that time, the new prime contractor, Westinghouse, took over the Savannah River operation. Mal McKibben offered his opinion on DOE’s expanded role after the Westinghouse takeover:

[When Du Pont ran the site] the Atomic Energy Commission people... were all in 703-A and when they wanted to come out, they called and got permission to come out. It’s a very different world when Westinghouse took over because all of a sudden you did everything by DOE order, DOE regulations, DOE QA standards and procedures; conduct of operations. And then of course, DOE also established offices in all the areas to oversee work. That’s what Congress wanted them to do. And they did it. For us poor workers, it was not altogether pleasant because now we had to explain and justify everything we did, where we didn’t have that problem before. It was very much a different way of doing business.

As a mark of the take-over, the name of the plant was changed from Savannah River Plant to Savannah River Site. At present, SRS has moved very far from production as its primary goal. The main issues today are environmental in nature, including the clean up associated with radioactive waste left over from decades of nuclear materials production and the decommissioning and demolition of many of the structures that served to produce, or support the production of, those materials. The site also serves as a protected outdoor laboratory, spanning more than 300 square miles and supporting a host of environmental research initiatives by scientists from other government agencies, universities and private foundations.



# V. SAFETY

“Whatever you do, on-plant or off, ‘Fit Safety In First.’”<sup>1</sup>

There is no company in the World that has ever had as much emphasis on safety as the Du Pont Company had in those days and still does. Every meeting of every sort always started with safety. All of a sudden, you realized this is a new ball game. When you walk up the stairs, you walk on the right. You don’t run. You hold the handrail. You don’t run on the site anywhere; and it was just one rule after another. So we had lots of safety meetings; we learned the safety rules and by golly, we obeyed them... It was very serious and if you saw somebody violating a safety rule, you told them right quick.<sup>2</sup>



An L Area employee stands in front of a sign reporting SRP safety statistics, 1956.

Early in the company’s history, Du Pont relinquished the primacy of operations to safety. After 40 employees were killed in an explosion in 1818, company founder Eleuthère Irénée du Pont established basic safety practices that became a hallmark of company operation. Company literature maintained that the company would produce only materials that could be made, shipped, and used safely.<sup>3</sup>

The technology of a process or an operation is considered to be incomplete until every possible element of danger has been mastered or eliminated. And no such project gets the go-ahead signal until the safety factor is satisfactory. The rule is inexorable, and applies equally to a plant costing millions or a stairway costing a few dollars. Chance cannot be ruled out of any man’s work, in industry or elsewhere. But predictable chance can be reduced to a minimum . . . [, and it] continually shrinks in Du Pont plants toward the visionary irreducible.<sup>4</sup>



Plainly, the Savannah River Plant was the scene of the most intensive accident prevention effort in construction history to date. Efforts by the construction force resulted in the establishment of three consecutive world records for safe exposure hours and nation-wide recognition in the field of accident prevention. SRP also won the Atomic Energy Commission’s “Best Ever” award 1970 for accumulating the largest number of injury-free person-hours of any AEC contractor.<sup>5</sup>

The SRP Safety Department was activated January 15, 1951, with the arrival of the first Safety Superintendent, and by August of the next year, 107 employees, divided between an Office Section and a Field Section, were dedicated to maintaining the safety of all project employees. Duties of the Office Section included the formulation of general policies and procedures, the creation and distribution of safety-related educational material, safety orientation for new employees and advanced instruction for supervisors, investigation and analysis of accidents, the maintenance of safety statistics and requisitioning safety equipment. The primary responsibilities of the Field Section were to assure compliance with plant accident prevention policy by regularly inspecting the work site and equipment, assessing the effectiveness of safety meetings and counseling supervisory engineers on safety matters. A Central Safety Committee, comprised of upper management, was also formed in 1951 and consulted with the Safety Department on matters ranging from operations safety to traffic accident prevention campaigns.

From the outset of the project, a goal of “no accidents – no injuries” was set and every effort was made to instill a genuine safety consciousness in all employees and to enlist their help in eliminating hazardous conditions onsite. Towards this goal, safety education and publicity played fundamental roles and were disseminated in several ways. An employee’s first day on the job included a safety orientation lecture; additional sessions followed, one around the 8<sup>th</sup> day of employment and a third about the 16<sup>th</sup> day. From that point forward, the safety education process never ended and included verbal, written, and visual methods of delivering safety information. Of the almost 200 16-mm films found in the basement of 777-10A, approximately 85 are safety films, covering an array of issues from “lock and tag” procedure to emergency measures in the case of a reactor incident.



*“Hands and Safety Book,” 1953.*

You got your own security manual and your own safety manual and you learned what was in that manual. Every month we had a safety and security meeting and those tough topics were covered in that meeting. They usually lasted an hour to an hour and a half. It was a significant meeting and records were kept, who was there, who was absent. If they were absent they had to make it up. It was taken very seriously.<sup>6</sup>

One of the most effective methods of preventing accidents was the STA, or Safety Task Assignment, which required that workers be informed and knowledgeable about every possible hazard that might be encountered for each



*Area Safety Meeting.*

job performed. During the construction era, mass meetings were another method of approach used by the Safety Department to distribute accident prevention information and solicit employee participation in “correcting human attitudes and inclinations, which produce accidents.”<sup>7</sup> Historic photographs show upper management, standing in front of giant safety banners, addressing thousands of assembled construction workers wearing metal hard-hats. These motivational meetings were held several times during the construction era, in each area and for each shift.



*An Array of Safety Pamphlets Produced in 1978.*

Employees took catchy safety slogans, such as the 1962 plant theme, “Fit Safety In First,” to heart. “I brought safety home with me. I’d tell my kids about house safety and what to do, what not to do, how to drive a car...”<sup>8</sup> Signs and bulletin boards located strategically throughout the project were another means of instilling safety consciousness in the workers. Joe Kirkpatrick, a labor superintendent during the original construction phase, presented a “Dog House” award and hardhat each week to the labor department with the highest safety violation frequency rate.<sup>9</sup> New employees assigned to the Heavy Water Department were told, with great sincerity, that if they fell from the towers they would be transferred from Operations to Construction before they hit the ground to protect the department’s safety record.<sup>10</sup>



*M Area employees stand before a sign celebrating the achievement of one thousand continuous safe workdays in that area.*

The plant newspaper, the *Savannah River Plant News and Views*, regularly published articles promoting safe practices. Editor Don Law “told somebody once, that [he sometimes] felt like the paper just presented on outside an appearance of a place where everybody just went in a big hole in the ground and came out periodically for safety meetings.”<sup>11</sup> A 1954 *SRP News* article related plant safety to the Cold War defense effort, “‘Without safety we cannot be productive, and only by being productive can we be strong and preserve the freedom of America,’ [construction field project manager Robert K. Mason] declared.”<sup>12</sup> Safety flags were given to operations areas that achieved safety milestones.<sup>13</sup> Personnel were encouraged to submit suggestions for upgrading the safety of the work environment wherever they saw an opportunity for improvement. This program “encouraged each employee to think constructively about his work, and to seek new, safer, or better methods, materials, and tools.”<sup>14</sup> Those employees who had safety suggestions adopted in operations were publicly commended in the newspaper and rewarded with cash prizes, some individual prizes amounting to hundreds of dollars. By the end of 1952, Du Pont had awarded over \$56,000 to SRP employees for their suggestions – and attributed construction costs savings nearing one million dollars to safe practices on the job site.<sup>15</sup>

Undoubtedly, the elimination of hazardous conditions attributable to safety engineering also played a large part in the reduction of workplace accidents, as testified to by Patrolman Harold Harmon,

Between October 1952 to February 1984, the Patrol Division alone fired 3 million rounds of ammunition on the range, without a lost time injury, not a single day. They drove 50 million miles on the highways. All this was tabulated monthly, you know, without a serious injury or lost workday case. In the whole history of the Patrol Division, not one lost workday case, from anyone being injured on the job. They did it through the hard-nosed concern of the Du Pont safety philosophy, with training and personal commitment.<sup>16</sup>

Safety Department representatives, working along side field engineers and craft supervisors, developed countless machinery safeguards and protective devices. Power-driven machinery was made safer through the use of guards, screens, shields, signs and color-coding moving parts. In some cases, equipment was completely redesigned to meet stringent safety regulations. All scaffolding was outfitted with rails and toeboards; all ladders were equipped with tie-off ropes and non-skid feet; all trenches were shored or sloped to prevent cave-ins; all hoses and cords were required to be hung at least six and one half feet above pedestrian walkways.<sup>17</sup> Rigorous planning went into any procedure involving hazardous material and persons working with radiological materials were required to wear personal radiation monitors.

From the beginning, the use of personal protection equipment, or PPE, was mandated by the Safety Department; the entire project was designated a "hard hat" area during the construction phase. PPE requirements were job specific, but could include eye protection, face shields, gas masks, respirators, helmets, gloves, aprons, plastic suiting, life jackets, and safety belts. Steel-



*Steel-toed safety shoes, required in many areas of SRP, were readily available from the mobile shoe store.*

toed safety shoes, sold from a mobile store, were manufactured in a wide variety of styles and made available to employees at cost; by December of 1955, 129,014 pairs had been sold to project employees.<sup>18</sup>



*An SRP employee models a personal protection suit.*

Once the plant was operational, the most formidable safety hazard to be confronted at SRP was radiation. To create a safe work environment, buildings and work areas within buildings were designed to limit worker exposure. Items and materials that emitted penetrating gamma rays and neutrons were kept behind concrete and/or metal shielding. Protection from the less energetic radiation sources included full protective clothing and external breathing air in some situations. All areas where workers could

be exposed were clearly marked by barriers, and film badges and dosimeter pencils were worn to ensure that shielding methods were operating as they should be. Workers also had to monitor themselves for radiation exposure when leaving designated areas. Monthly and annual exposure limits were set, and if employees approached these limits they would be reassigned to areas where they would be less likely to be exposed to radiation.<sup>19</sup>

Du Pont standards for radiation dose at Savannah River were set forty percent below government limits. In over 35 years of operation only two employees exceeded the federal limit. In the final fifteen years of Du Pont's involvement at Savannah River, no employee exceeded the Du Pont limit.<sup>20</sup>

Another safety hazard at Savannah River was hydrogen sulfide. This highly toxic gas can be harmful or fatal even in very small quantities. Large quantities were used in the 400 Area, where the use of the gas was made even more dangerous by the pressurized processing equipment, up to 300 pounds per square inch, and the high corrosiveness of the gas. From the beginning of 400 Area operations, the atmosphere in the area was continuously sampled, each worker carried sensitive paper that would indicate the presence of the gas in air, at concentrations less than can be smelled (hydrogen sulfide has a strong rotten egg smell that can be detected at far below lethal levels). All personnel were issued gas masks and also carried cylinders of breathing air. Additionally, all work was conducted on the buddy system - if a worker was overcome by hydrogen sulfide, their partner could get help.<sup>21</sup>

These efforts were quite successful throughout the history of the site. Only one employee received an exposure exceeding five rem per year, and that occurred in 1956.<sup>22</sup> Forty-eight employees received exposures exceeding three rem annually during the period of 1951 to 1988, quite low compared to the nuclear weapons complex as a whole. For comparison, in 1986, 35 employees at Department of Energy sites received exposures surpassing three rem, and the commercial nuclear industry had 728 employee exposures of more than five rem during 1980. SRP had one of the best safety records and lowest radiation exposure rates of the entire nuclear weapons complex, and it has also been noted to be one of the safest industrial plants in South Carolina.<sup>23</sup>

## HEALTH PHYSICS

An important aspect of Du Pont's SRP safety program was the Health Physics Section, responsible for the monitoring and control of site radiological hazards, as well as certain other industrial hazards. The Health Physics department had the authority to alter or halt operations that were not being conducted according to Health Physics procedures, or that were being conducted in areas that had become contaminated beyond allowable limits, or were for some other reason deemed unsafe.<sup>24</sup> Health Physics had its beginning in the health group of the Manhattan project. The group conducted frequent physical examinations of employees, set exposure standards, developed instruments to measure exposure, measured radiation levels, and monitored contamination of clothing, laboratory desks, waste water, and the atmosphere.

At SRP, the Health Physics program was born in the spring of 1951 when a team of engineers assembled to begin a groundbreaking pre-operational survey of the site and its environs, for the purpose of measuring existing radiological levels so that any increase in those levels after operations began could be determined and hopefully, pinpointed and controlled.



*A Health Physics employee checks equipment at one of the many environmental monitoring stations situated on or near the Savannah River Plant.*

We were really pioneering. No other nuclear plant had ever made an extensive survey to determine natural radiation benchmarks on which future environmental monitoring would be based. Now, all nuclear sites make these surveys. Facilities were primitive in the summer of 1951. We had our counting room in a construction shed in the TNX area, which was just being built. Since the shed wasn't air-conditioned and the humidity was so high, we had to pack the counters everyday with a drying agent to keep them operating. A large tree stump outside the shed was used as a table to prepare the environmental samples for counting.<sup>25</sup>

Air, surface and subsurface water, vegetation, soil, plant and animal life were all analyzed during the survey, which took 18 months to complete and covered 6,000 square miles.<sup>26</sup> There were few academic programs producing health physicists at that time, so Savannah River drew from personnel at Oak Ridge and Hanford. Early health physicists included H. A. McClearen, who had worked under K. Z. Morgan at Oak Ridge; C. M. Patterson, who worked at Hanford and headed the Savannah River Health Physics department from its establishment until 1978, and W. C. Reinig, also a Hanford health physics alumnus and manager of the department at Savannah River after 1979.<sup>27</sup> Reinig credits the pre-operational study with inaugurating "the long tradition of environmental stewardship that has served the Site and its neighbors so well. By focusing on environmental radioactivity, it helped to imbue in the institutional consciousness of the Site and the importance of controlling releases to the environment."<sup>28</sup>

After operations began, the expanded role Health Physics was divided among several groups – Control (Regional Survey and Bio-Assay), Personnel Meter, Area Survey, Methods and Calibrations. The Regional Survey Group, responsible for the background survey, continued in the same vein with the continuous surveillance of site conditions and effluents. Bio-Assay determined the amount of radioactive material assimilated by personnel, while Personnel Meters dealt with external radiation exposure. The development of new instrumentation, techniques, procedures, and calibrations fell to the Methods group and Calibrations was responsible for instrument decontamination, maintenance and not surprisingly, calibration.

It was Area Survey, however, responsible for hazard control, or radiation and industrial hygiene, in the production areas of the plant, that was the central focus of the program after start-up and in which the majority of the Health Physics workforce was engaged. Area Survey provided 24-hour assistance to all the departments in operations.



*Health Physics employee, Beulah Whitaker, takes radiation readings from personal dosimeters, 1955.*

Their objectives were the minimization of personnel exposure to radiation, toxic materials and other potentially damaging agents, including noise; minimizing contamination of the site's facilities and environment; and to train its personnel to handle routine work and emergency situations safely. The Area Survey personnel were also directly involved with the site's emergency response plan, providing training for all shift crews for the Emergency Operating Center.

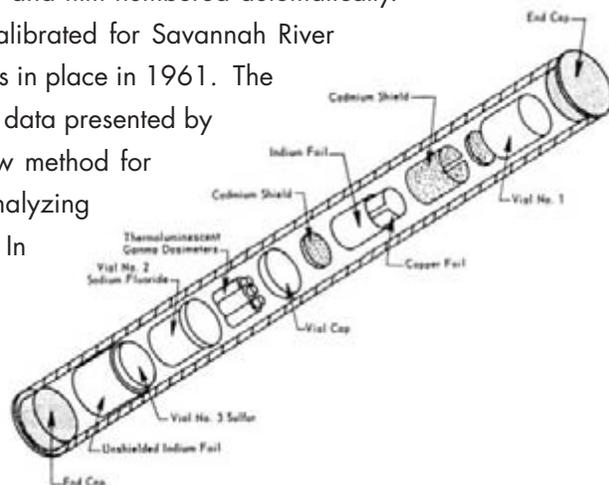
The Health Physics group's three initial engineers began a training program in mid-1953 and started following the construction in the reactor and separations areas so they would have an intimate understanding of the designs and hazards, and also so they could suggest improvements from a radiation safety perspective. The staff grew during the following year; training sessions were held for startup operators, and radiation zones and danger areas were established in all process buildings. The zones were designated, from less to more radioactive, as clean areas, regulated areas, and radiation zones. The latter two controlled zones, known as RAs and RZs, had guidelines for personal protective clothing and monitoring.<sup>29</sup> Health Physics inspectors were not ultimately accountable to production management and had the authority to alter or halt operations that were not being conducted according to Health Physics procedures, or that were being conducted in areas that had become contaminated beyond allowable limits, or were for some other reason deemed unsafe.<sup>30</sup>

Health Physics also issued work permits for construction, maintenance, and service work in these areas after operations were underway. The work permits, which specified the type of protection and dosimeters required for the employees conducting the work, were means of incorporating Health Physics assessments into all modifications of the physical plant where radiation was a potential concern. Now generally known as Radiological Work Permits, similar permitting systems are the standard in the nation's nuclear industry.<sup>31</sup>

During the 1960s, health protection research and development expanded. An automated film badge system was introduced that allowed badges to be loaded and film numbered automatically.

The whole body counter was completed in 1960 and calibrated for Savannah River radionuclides, and the process for counting employees was in place in 1961. The international limits for tritium protection were structured by data presented by Savannah River's Health Physics department. Also a new method for monitoring radiostrontium from fallout was devised by analyzing baby's teeth donated by employees and local dentists. In dosimetry, an advance was made with the introduction of a personnel dosimeter for measuring employee's exposure in the event of a criticality incident. This

*Precise measurements of exposure could be determined by analysis of the Neutron Dosimeter, also called a "pencil" or "pen" for short.*



device was adopted for use at other nuclear plants. 1970 marked the replacement of film with thermoluminescent crystals in the personnel monitoring badges, and in 1971, the thermoluminescent neutron dosimeter (TLD) replaced the nuclear track film badge to determine neutron exposures. With instrument assistance provided by Engineering Assistance, now EED, an automatic TLD reader was created to read the new badges. Other advances include the introduction of a carcinogen handling policy and procedures, the establishment of an ambient hydrogen sulfide gas monitoring system in D Area that led to other stations in operations areas for other non-radioactive pollutants, and the design of an improved plastic suit for protective clothing.<sup>32</sup>

The Health Physics Department was also responsible for monitoring the effects of radiation from Savannah River outside the plant boundaries. Its work supplemented that of another important organization from offsite. In May 1951, the Department of Limnology at the Academy of Natural Sciences in Philadelphia began a yearlong study of the plant and animal life in the region to ascertain normal biological conditions, to be used as a base from which to measure the impact of future industrial operations. Subsequent studies have been conducted every three to five years since the initial study.

## SUMMARY

The effectiveness of Du Pont's commitment to the safety of its employees and to the people living in the vicinity of SRS was independently validated by the Centers for Disease Control and Prevention (CDC) in September 2006. In 1992, the CDC began a study to evaluate radionuclide and chemical releases from the site and their effect on the surrounding environs. The SRS Dose Reconstruction Project evaluated dosage and associated cancer risks to hypothetical individuals living in the vicinity of SRS by basing their investigation on actual releases from the plant for the period between 1954 and 1992. Calculations were made using a dose assessment computer, which took into account transportation by air, water, and the food chain. Overall, the CDC study concluded that estimated SRS attributable dosage was low when compared to dosages received from background radiation.



## VI. SECURITY

Long before the Atomic Energy Commission's public announcement that they would construct a nuclear materials plant on the Savannah River, the preliminary effort to organize the site's security department and recruit key personnel was well underway. The protection of plant building and property was a primary requisite under the rules of the AEC in order to safeguard all equipment and material from harm, either through accident or sabotage. The need to maintain a high level of security at Savannah River stemmed from the unfortunate reality that the Cold War was not just a battle of armaments and international positioning, but also one of technology, where gains on research or production fronts could be lost quickly with the transfer of vital information. It therefore became the responsibility of every person associated with the plant's construction and later, operation, to maintain a constant vigilance in order to prevent the disclosure, inadvertent or purposeful, of any significant information to unauthorized persons.

This dedication to effective security "tempered the actions of everyone working on the project, limited the exchange of information and opinion, and caused some delays;" however, good security practice became ingrained in the mind the employee and contributed to the success of the mission.

Security policies and regulations at Savannah River, like other installations in the nuclear weapons complex, were defined by the Atomic Energy Commission and based on federal regulation. The Atomic Energy Acts of 1946 and 1954 addressed the production and possession of fissionable materials, the utilization and military application of atomic energy, and control of the "dissemination of restricted data in such manner as to assure the common defense and security."<sup>1</sup> The McCarran Internal Security Act of 1950 strengthened existing legislation regarding subversive activities, including espionage and sabotage. As prime contractor, Du Pont assumed the responsibility of applying AEC security policy and in order to do so set up a Security Department with two divisions: Security and Patrol. The former was to establish the rules and administrative procedures needed to comply with federal regulations and to educate employees about those rules and procedures, while the latter was to enforce the rules.<sup>2</sup> All security measures at SRP were based on the following three principles: all personnel working on the project were to be "cleared," all work on the project was conducted within restricted or exclusion areas, classification categories were assigned to all documents, devices, and materials associated with the project and methods were outlined for handling classified information.<sup>3</sup>



*Cover of a security booklet; a new booklet emphasizing a different aspect of security was printed each month to assist departmental managers in leading the monthly security meeting.*

## PLANT PROTECTION FACILITIES

By its very nature, the construction of the Savannah River Plant was a secret undertaking requiring the strictest of measures in security, hence, the entire property was designated a national security area. However, considering the logistics of constructing a totally restrictive barrier around the 312 square mile site, it was decided in early on meetings between Du Pont and AEC that the perimeter of the site would be posted with “No Trespassing” signs and would also be surrounded by a three-strand barbed wire fence. Though these measures would hardly keep out a person determined to gain access, they did clearly indicate that the area was closed to vehicular and pedestrian traffic. Conversely, the individual production and service areas themselves were outfitted with physically impassible impediments, generally consisting of chain link fencing, eight feet in height. Similarly constructed gates were incorporated at pedestrian, vehicular, and railroad entrances to the areas. Within these areas, certain special buildings could be further restricted with additional fencing, if needed.



*Employees passing into and out of a Limited Area, by way of the guardhouse.*

Savannah River Site maintained three categories of area control designed to limit access to the various sections of the plant and accomplished through the use of fencing, guard houses, personal identification, and other methods. As soon as it was possible, the entire property was designated a Controlled Area, meaning that entrance was restricted to authorized personnel only. Employees or others with official business were permitted to enter only after presenting proper identification. However, any classified data within a controlled area was further confined

to a Limited or Exclusion Area, which were the most secure sensitive, and therefore secure, locations on the project.

A highly emphasized component of the plant protection program was outdoor security lighting - for fences, roads, and buildings - and extensive testing was conducted to determine which lighting techniques would be most effective in meeting security requirements. A complex system was utilized to illuminate different features at specialized intensities and for Building 703-A, lighting was developed that would illuminate a zone 100 feet wide on either side of the security fence surrounding the building. All outdoor lighting was designed so that it could be extinguished from the area blackout control in the case of an emergency.

Entry to areas of restricted access was gained by way of the guardhouses. Some allowed vehicular passage, but many were designed for foot traffic only. Some were also designed with special protective features for the safety of the guards in case of an emergency. Early design considerations called for elevated guardhouses to be located strategically along the fence at each production area; however, these measures were eventually deleted from the scope of work in view of the planned regular and constant patrol of each area by the guard force. Entry to the site by air was for a short time guarded against by extensive anti-aircraft emplacements, constructed at several locations around the installation and operated by Army troops. In 1955, the 11th Antiaircraft Group provided this defense, with 90 officers and 1023 enlisted personnel, but the anti-aircraft emplacements they manned were abandoned by 1960.<sup>4</sup>



## SECURITY DIVISION

The Security Division of the Security Department had units responsible for personnel clearance, employee identification, visitor control, field inspection and security education. For the prospective worker, the commitment to site security would have been evident during the pre-employment interview when, with the assistance of an interviewer, they were required to complete a Personnel Security Questionnaire. The PSQ asked for detailed information pertaining to place of birth, nationality, education, former places of residence and employment, and memberships in social or business organizations. Depending on the requirements of the job applied for, the PSQ may be submitted to a government agency with the request for a complete background check. Once "cleared," the second stage of the security indoctrination would commence.

The Security manual was prepared to establish security guidelines in October of 1952, and orientation of new employees as to their security responsibility began in December of the same year. Before an employee could report to his or her work assignment, they were required to attend an orientation in which security rules and regulations were explained in full, with particular emphasis placed on employee responsibility. Workers were instructed to refrain from discussing any aspect of the project at any time, except with persons qualified and cleared to receive such information and only then when specifically necessary for the execution of an individual's assignments. After

completing orientation, the employee would receive a laminated badge bearing their photograph, employee number, social security number, and physical description, which was to be worn in plain sight at all times when on the project site. This badge system is still being used to regulate personnel movement onto and throughout the plant.

Forgetting a badge caused work delays. And, it could indicate a lax attitude toward security. Du Pont worked to make the concept of security a constant companion of employees. Plastic stickers were passed out to personnel asking them “Got Your Badge?”<sup>5</sup> These were placed on walls, beside light switches, on hard hats, and at other places around employees’ homes. Patrolman Joe Roberts said that he and all the other persons in his car pool placed their stickers on the dashboards of their cars; file clerk Marjorie Welcher placed one on the car dashboard and another on the mirror of her dresser. D Area project engineer Carlo Frasco also placed his in his car, but on the windshield.<sup>6</sup> Although the first three times employees forgot a badge they were issued temporary entrance passes, they would have to return to get the badge on the fourth offense.<sup>7</sup>



*Like today, employees of SRS wore badges for identification and to indicate their clearance level. Here, Helen Yarborough of the Health Physics department shows off one of the newly designed badges issued in 1958.*

Badges also denoted which clearance level an employee possessed. Every person that would be working with classified information or in a Limited or Exclusion area, the large majority of the employee population, was “Q” cleared. This was the highest level of clearance on the site and required investigation by the Federal Bureau of Investigation or Civil Service Commission; a total of 20,047 “Q” clearances were granted from the project start through 1955. If an emergency situation arose where an employee needed to have access to restricted data before a “Q” clearance could be attained – the process often took months – then a “QE” clearance could be granted. The minimum level of clearance required for work on the project was “P” approval, requiring no background investigation. Neither clearance level nor position alone, nor a combination of the two, entitled an employee to classified information; it was only distributed on a “need to know” basis.

There were two categories of visitors to the Savannah River Plant, official and non-official. Official visitors generally came from other AEC installations with written permission to visit the project, where they would come in contact with classified information in the form of documents or process. These visitors were issued temporary badges upon arrival and were free to conduct business within designated areas. Unofficial visitors required escort while on site and included salesmen, technical representatives and local officials. Persons that were regularly onsite to maintain telephone and rail lines were cleared and issued badges in order that they be able to enter restricted areas.

### MONTHLY SECURITY MEETINGS

Each of the three-hundred-plus departments at SRP was required to have a monthly security meeting, to be attended by all of its employees. The Security Division orchestrated these meetings by designating a different

# SECURITY

A sampling of some of the security slogans and illustrations designed to keep site security a top priority in every employee's mind.



topic each month and producing booklets to help lead the departmental discussions. The topics ranged from “Loose Talk” to “Marking of Classified Documents” and generally called attention to a specific failure in security performance. Attendance was carefully monitored; departments had to submit meeting minutes each month to the Security Division.



*Patrolmen Training on the Pistol Range adjacent to 661-G.*

## PATROL DIVISION

The Patrol Division, originally headquartered in the Old Waterworks Building, began functioning on December 11, 1950 when the first three patrolmen were hired.<sup>8</sup> During area construction, patrol responsibility fell to the Construction Division; however, as area constructions were completed, patrol responsibility and personnel were transferred to Operations. Early posts included the Du Pont and AEC administration offices at Daniel Field and the Bell Municipal Auditorium; however, as construction got underway, patrol responsibility shifted to the project site with the first post established January 1, 1951 at the intersection of Main Street and Highway 28 in Ellenton. Security Staff Headquarters was moved from Ellenton to the 720-A building on October 2, 1952 and on October 6, 400 Area Patrol was transferred to Operations. The patrol force of the 300/700 Area was the next to transfer on December 1, 1952 and by June 30, 1953, the total strength of Operations Patrol consisted of 37 supervisors and 350 patrolmen with 21 vehicles.<sup>9</sup> From that time through February of 1984, when Wackenhut (WSI) took over patrol responsibility, the Du Pont patrol force consisted of as many as 963 or as few as 227.<sup>10</sup>

By an act passed by the South Carolina Legislature, 276 Savannah River patrolmen were granted special status as state constables during the peak construction period.<sup>11</sup> The patrol force was described as large enough to maintain “a city the size of Boston, San Francisco, or Washington, DC” and functioned much in the same manner, but with added responsibilities.<sup>12</sup> For example, Patrol expended over 3,000 man-hours to assure the safe escort off of the property of all houses moved during the latter part of 1951 and the early part of 1952.<sup>13</sup> “When the Du Pont staff would come down from Wilmington and other important visits like that, [the Patrol Division] would provide this extra protection for them, even off-Plant and hotels off-Plant in Columbia or Augusta...You had to get permission to do that. The Chief of Police would give us permission, written permission, that we could carry a gun on a certain day in a certain place to protect those executives.”<sup>14</sup> In addition, the patrol force was made available to surrounding communities in the case of emergencies, such as the 1953 fire in Aiken that destroyed much of the downtown business district.



*One of the Early Patrol Cars on Site.*

All patrolmen were required to meet a certain profile, 21-45 years of age and at least 150 pounds, between 5’6” and 6’4” and able to pass the Du Pont physical examination. Beyond these physical requirements, they had to possess “a reputable background, suitable temperament, and a valid State Driver’s License.”<sup>15</sup> Basic training, which was conducted at 661-G, consisted of 80 hours of training covering subjects ranging from courtesy and chain of command to first aid and espionage. In addition, all patrolmen were trained on the operation and maintenance of a 38-caliber revolver. A pistol range, adjacent to 661-G, was placed in operation on September 7, 1951.<sup>16</sup>

Patrol reached its peak in early 1954, with 854 patrolmen, 109 other persons, and 61 vehicles. The force began to decrease as construction drew to a close, patrolmen transferred to operations positions, and the use of personnel was made more efficient. The gradual decrease continued through the years, reaching a low of 227 persons in June 1975. The number of persons in the division grew thereafter because of increased security concerns. Then, between November 1983 and February 1984, the Du Pont security force was disbanded and security of the plant was gradually turned over to Wackenhut Services, Inc., which continues to provide security at the site.

## WACKENHUT COMES ON BOARD

With the taking of American hostages in Iran in 1979 and the general rise of terrorism in the Middle East, the security arrangements at U.S. nuclear facilities came under close scrutiny by the National Security Agency. Industrial guard forces at most facilities were capable of thwarting simple threats, but were inadequate to protect facilities and nuclear materials from dedicated and trained terrorists. In 1980, the government conducted a mock

*A Savannah River Plant patrolman demonstrates hand signals for traffic control.*



raid on Savannah River with government agents, who infiltrated the plant with forged documents, took hostages, and seized control of one of the reactors. The relative ease of this raid led to a Congressional hearing on security and it soon became obvious that security at Savannah River would have to be improved.

Even though Du Pont had been responsible for all aspects of the SRP operation, including security, the company was not interested in developing the capability to deal with the terrorist threat. Upgrading security to the level necessary to thwart a direct attack would require offensive training in Paramilitary fashion and Du Pont felt they could not, with safety as a top priority, expose their employees to such a high-risk activity. As a result, the Department of Energy contracted Wackenhut Services Inc. to provide security services for the site in 1983. Drawing on their experience in securing industrial and national sites from the Alaska pipeline to the Kennedy Space Center, Wackenhut immediately made plans to upgrade the plant's security protocol. Curtis Boseman, one of the few men to make the transition from Dupont to Wackenhut, offered his take on the difference between the two companies:



*The selection of Wackenhut (WSI) from a field of 19 bidders was announced August 12, 1983.*

DuPont Security, while it was security oriented it was more safety by far. Now Wackenhut puts strong emphasis on safety, but decided to incorporate Safety and Security on the same level. We can do both. There were times when I was with DuPont security that, safety sometimes would take precedence over something where it could have been worked out with Security at the same time. For one of the things there was no running. You responded to practice alarm and walked. Wackenhut, from day one, you ran. At the alarm, you ran. That's when we knew,

for those of us that worked at DuPont, there was a new sheriff in town. You can be safe at the end of the day and get the mission accomplished.

The transition took three or four months. Because very few of the Du Pont patrolmen made the switch, the burden was put on Wackenhut to hire more people and train them. The transition was executed in stages with Wackenhut taking responsibility for 100P Area on November 7, 1983. "The final [area] turned over was the Traffic and Perimeter Barricades on February 13, 1984. At midnight of each one of these dates, Du Pont Patrol turned over all their weapons to Wackenhut that moment and they had the responsibility." Du Pont retained a special force of patrolmen for a year and a half; a trained, unarmed patrolman on each shift provided a liaison between Wackenhut and Operations, should questions arise, enabling a smooth transition. Security was tightened around the reactors, the separations areas, and the fuel manufacturing facilities with the addition of double perimeter fencing and other improvements, and helicopters, machine guns, and flak jackets soon became the security norm at SRP.

## VII. SUPPORT AND SERVICES

The many and varied functions performed by the Du Pont Company that were non-technical in nature, plant-wide in application, and that could not be economically performed by other departments acting individually, fell under the departmental heading of General Services. Within this area, tasks were organized and divided amongst four major departments: Personnel, Clerical, Traffic and Transportation, and Service. All of these support groups allowed the site to function as an independent industrial entity that, in size and complexity, could best be likened to a city. As was the case in Chapter IV, the functions carried out by these departments are too numerous for a comprehensive discussion. As such, this chapter will focus on the most vital of these activities.



*Employment Reception Room, Building 719-A, September 10, 1954.*

### PERSONNEL DEPARTMENT

The Du Pont Personnel Department functioned through three major divisions: Employment, Industrial Relations, and Training. It was the responsibility of the Employment Division to procure applicants, determine occupational qualifications, and manage clerical details including the preliminary processing of security clearance (discussed in Chapter VI). Additional responsibilities were taken on as the workforce grew and included intra-plant transfers, carpool coordination, new employee orientation and termination interviewing. The Industrial Relations Division was responsible for the development and distribution of those policies and procedures that defined Du Pont's relationship with its employees. This division also oversaw activities designed to promote harmonious interaction

and included the SRP newspaper and the Operations Recreation Association. The primary purpose of the Training Division was to assist departmental supervision in the training of an efficient workforce.

The Personnel Department of SRP grew out of need and its establishment cannot be narrowed down to any particular date; however, an interviewer that transferred from the Dana Plant in November 1951 was the first employee that could be categorized as functioning in a personnel related capacity. His responsibility was to hire employees to meet the early needs of the project. The first hires included non-manual employees: typists, stenographers, clerks, buyers, custodians, and patrolmen. Clerical workers were scarce; Camp Gordon had drained the available labor pool so clerical help had to be recruited. The first Personnel Supervisor was transferred to SRP in January 1952 and in the succeeding months, supervisors from other departments were borrowed to assist in employment activities and the formulation of personnel policies and procedures.

Augusta's Municipal Auditorium housed the first employment office until construction of the TC-2 building was completed in May of 1951. However, by April of 1952 the Employment Division's operation had grown so large it was moved temporarily to the Ellenton School Building until October when the Division took up permanent occupancy in its offices in 719-A. At this time the Division was also able to assume responsibility for employee investigations, which had until then been fulfilled by the Construction Division.

In general, a potential employee had to be between 18 and 64 years of age. There was a pre-interview, interview, and physical examination to pass before a new employee could sign up. A prospective employee could be turned back for medical reasons, lack of qualifications, or because they did not pass the security requirements. If hired, an individual was assigned a payroll number, photographed for a badge, and fingerprinted. Further forms were required for a necessary security clearance. All workers received a mandatory half-day orientation on safety and security. For some that was just the beginning of the training program. An extensive supervisory training program was in effect, on-the-job training was available to office personnel, and a short-term skill improvement-training program was instituted for 107 apprentices in the electrician and ironworkers crafts.<sup>1</sup>

Early employees came from nearly every state in the nation to work at the new plant. In 1953, "every state in the Union, except Utah, is represented in the list of immediate former addresses of plant personnel. And added in for good measure are Washington, DC, Alaska, Panama, Cuba, Okinawa and Argentina."<sup>2</sup> Peak employment at the Savannah River Project would reach 38,582 during the construction period as laborers, skilled and unskilled, poured into the Southeast to work on the project. Craftsmen alerted by their unions about job opportunities, engineers recruited out of school and college-placement services, and Du Pont personnel blended into the first workforce.

Manual construction labor was recruited through the American Federation of Labor building-trades unions, with two exceptions. Displaced residents of the project area were given priority in hiring and between 20 and 30 previous residents were hired.<sup>3</sup> Du Pont also ordered a specific number of workers to be hired "at the gate." Despite this official policy, hiring at the gate rarely happened. Typically, the unions would fill labor "requisitions" prepared in advance by Du Pont; therefore, the company ended up hiring only union-referred workers. Even with this advance notice, the unions were also forced to recruit as the local availability of various craftsmen and their



*Construction workers put the finishing touches on Building 703-A, 1952.*

experience level varied tremendously.<sup>4</sup> “In order to recruit [skilled craftsmen] they went first from a 45 hour week and then a 54 hour week. We had six nine-hour days I guess. The reason was partly to get the job done, but more so to inflate the wages to attract the people [the project] needed.”<sup>5</sup>

Because there was also a serious lack of engineering candidates for employment in the immediate area, an active recruitment program for engineers was launched in June 1951. Recruiters from the Wilmington office developed applications for professional agencies and engineering societies located throughout the eastern United States, college placement offices, and state employment agencies. Blind ads for positions and advertising in *Engineering News Record* were used to lure young engineers to the plant. A booklet was produced that showed amenities in the Aiken-Augusta area in order to introduce the new plant area to the engineer and his or her family. The recruiting office staff grew to 15 as the need for qualified engineers mounted. The recruiters first worked “Region Five,” which included South Carolina, Georgia, Florida, Alabama, Mississippi, and Tennessee. The region was later expanded in January 1952 and the expansion paid off. In the month of February 1952, 59 engineers were recruited, and March brought 77 more to the plant. The recruitment effort was most successful in June 1952 when 149 engineers were hired.

**Table 7. Early Employment Statistics**

Year	Month	Employment Division Employees				Work Processed			
		Wilmington	Clerical Workers Assigned to ED	Other	Total	Employment Interviews Conducted	Employees Hired	Pre-Employment Tests Conducted	Personnel Safety Questionnaires Processed
		Salaried Employees							
1951	Nov	1	0	0	1	19	-	-	-
	Dec	2	0	0	2	38	-	-	-
1952	Jan	4	0	0	4	47	132	-	-
	Feb	4	3	0	7	314	44	-	-
	Mar	5	5	0	10	728	88	5	55
	Apr	8	11	1	20	1898	183	193	115
	May	8	23	2	33	2198	308	1092	234
	June	11	32	4	47	2240	386	1349	160
	July	10	37	8	55	2588	361	1454	266
	Aug	10	32	9	51	2462	307	4401	289
	Sep	8	36	11	55	2126	298	4148	247
	Oct	5	37	11	53	1590	479	2461	288
	Nov	5	33	11	49	1515	297	2255	203
	Dec	6	36	14	56	1394	321	2161	192
1953	Jan	6	36	14	56	1170	287	2825	237
	Feb	9	35	13	57	1847	283	2019	249
	Mar	10	40	14	64	2256	477	2147	430
	Apr	10	40	15	65	1087	405	1845	432
	May	9	42	15	66	1972	322	1615	336
	June	9	44	15	68	2941	608	1987	308
	July	9	45	15	69	2200	510	2664	533
	Aug	9	42	15	67	1920	350	1146	303
	Sep	8	37	16	59	1340	220	512	171
	Oct	8	35	14	57	1590	110	155	34
	Nov	6	33	14	53	2020	220	246	51
	Dec	6	33	14	53	1500	100	527	194
1954	Jan	6	34	14	54	1540	195	748	210
	Feb	5	32	14	51	1395	140	1059	264
	Mar	5	38	14	57	1850	215	1235	323
	Apr	7	38	14	59	1730	195	1108	328
	May	8	36	12	56	1400	160	850	159
	June	8	33	12	53	1900	270	599	327

(Source: Savannah River Plant History, All Areas, August 1950 - June 1953 & 53-54).

Table 7 provides employment statistics for the formative years at SRP highlighting the number of individuals that were involved with hiring the plant’s first work force. The number of interviews completed is staggering and the ratio of those hired from those interviewed is roughly one hire for every three to four interviewees. This pace began to slow down in 1957 as the construction era ended and operations began and then stabilized by

1965 (Table 8). During this time, SRP began a cooperative program with selected southeastern colleges and universities whereby students could work at SRP on a part time basis. Five students from the Georgia Institute of Technology, the University of Florida, and Alabama Polytechnic Institute arrived in 1957 to take advantage of the new program. Later other schools would participate and the ranks of students grew to a record number of 99 in 1980. Summer hiring was also a part of the work year with over 100 individuals finding employment in 1960.

In 1965, 887 individuals were interviewed for employment; only 98 were hired. The number of interviewees doubled by 1970 and then made a quantum leap in 1975 when 10,089 individuals were interviewed for 441 positions. SRP was in a growth mode as DOE and its predecessor agencies began the ramp up to meet production goals for the plant. To assure that the personnel department made the best selections, personnel from the technical side of operations would be detailed to the personnel department for counsel and advice.

**Table 8. Personnel Statistics, 1957-1985**

Year	Interviews	Wilmington Salary Roll Hired	Local Roll Hired	Total Hired	Terminations	University Coop Students	Summer Employees	Total Plant Force
1957	1989	54	88	142	1151	5	86	7169
1960	2985	65	99	164	284	24	113	6535
1965	887	44	54	98	186	34	46	5591
1970	1663	46	34	80	154	28	64	5138
1975	10,089	53	388	441	171	48	53	5263
1980	Not given	163	474	637	306	99	18	6100
1985	11,110	222	813	1035	197*			7729

\*includes transfers

Sources: Savannah River Plant History, July 1954 - December 1972, All Areas; Savannah River Plant History, January 1973 - December 1986.



*Women were well represented in the pool of individuals seeking employment at SRP.*

The 1967 section within the Savannah River Plant History for All Areas is the first to provide figures on equal employment opportunities under the program, “Plans for Progress.” Thirty-eight African Americans, representing 18 percent of that year’s hires, became part of SRP’s workforce. In addition, 120 black employees were upgraded or promoted within the ranks of nonexempt employees. Plant representatives also visited local high schools and colleges with majority African American enrollment to recruit from their ranks for summer employment. All yearly summaries after 1967 show SRP’s adherence to affirmative action showing data on the burgeoning black workforce and the female workforce charting yearly hiring practices, promotions, and the recruitment of promising candidates in area high schools and at historically black universities. In 1975, black employees composed 14.7 percent of the plant population; women composed 11.2 percent. Forty-six percent of the local roll employees hired in 1975 were black while 30 percent were female. Ninety-one percent of the summer employees were black. Ten years later, SRP’s efforts began to pay off. Minority employees on the nonexempt rolls increased to 27.5 percent in 1985; the growth of the female workforce however was slight, increasing to 31.3 percent.

Just as the workforce became diversified, so did the duties of the Personnel Department. Its scope of services circa 1952 was a far cry from what was needed in the 1980s. Training, recruitment, counseling, participation in summer technical programs and employee development programs, relocation services joined insurance management, employment benefit plans, and the handling of grievances as a more sophisticated workforce and a different work environment changed how the department served the plant’s workforce.



*African American employees composed just 14.7 percent of the workforce in 1975.*

### *SRP News and Views*

As soon as construction was underway, the plant’s first newspaper went into print, and was published on alternate Fridays throughout initial construction. Named the *SRP News and Views*, the paper was produced to foster plant identity and community. Politics, controversy, private advertising, embarrassing news to individuals, and sensitive issues were to be avoided according to Du Pont policy. As Editor Don Law would note in an interview, “We didn’t cover bad news.”<sup>6</sup>

When the first issue came out, the masthead featured a large question mark rather than a title. The selection of the new paper’s title was used as a way to involve site employees in aspects of site operation that went beyond their work. John Campbell, an electrician with electrical sub-contractor Miller-Dunn Electric Company, won a fifty-dollar savings bond for suggesting the name in an employee contest.

Articles included items of interest to locals and new arrivals, from birth and marriage notices to information about places to live. Beauty queens, especially those who worked at the plant, were photographed and interviewed. The recreation association’s events were covered in words and in photographs that generously showed their games, dances, and talks. Historical pieces on the surrounding communities and on the pre-federal history of

the plant were written. If a Savannah River Plant family was in need, a brief article was written highlighting their situation and informing all where funds could be sent.

Safety was a theme that recurred in nearly every issue. Traffic accidents both onsite and off were noted, and the "Traffic Score" ran in a small box on the front page of most issues, giving the number of accidents, warrants, and arrests broken out by the areas in which drivers worked. Community involvement was also encouraged through the promotion of the Community Chest program. Award winners for the Suggestion program or "Plumbob" award winners were prominently featured. Of a more general nature, events significant to the nation (especially those related to atomic energy) and to Du Pont were covered. Many issues had a "Meet the Management" article, where one of Du Pont's construction managers was introduced. Items of a more specific interest included stories about former site residents, sports scores, and human interest columns like Mim Woodring's "One Gal's Opinion" or "Fin, Feather, and Fur" written by Tom Latsch.<sup>7</sup>

The site paper remained a constant at SRP through the 1990s. Printed off site and made available at the gates during the construction era, it was later mailed to operations employees' homes. The human interest stories became less prevalent over time as the paper and its writers matured with the population it served. Don Law, long time editor of first the construction era paper and then the operations paper in 1955, talked about the paper's beginnings and growing pains:

I was working in Orangeburg, as a Managing Editor of the Times and Democrat. A guy from DuPont came over to talk to the Rotary Club about the huge new construction project under way, not too far from Orangeburg, and I interviewed him. As I tell people, whenever I interviewed anybody I'd always ask them for a job in those days because I was working about a 14-hour day on a daily newspaper.

Well, I was hired to start a newspaper for the construction force, which got up to about 30,000 people at that time. So I started a bi-weekly tabloid for the construction and it got up to 38,000.... had one of the biggest circulation of any paper in the state, I guess.

I was always out in areas interviewing, trying to find interesting stories. We had five brothers, who were all pipe fitters I think. We had two midgets who were hired specially to do pipe work in small areas; enclosed areas. I think one of them was in a Hollywood movie. I forgot what movie. We had all kinds, you know with 39,000 people, you get some of everything. Most of them were from within a 60 or 70-mile area. We had people commuting from Charleston, which was 100 miles. But, generally, they were from the neighboring counties.

I did that for about two or three years and then I transferred over to Operations. I was editor of the paper for 20 years or so.... The Operations newspaper had been started a year after I started the construction paper. Another guy started the operations newspaper and I went over and replaced him. I would say I had to deal with a lot of old DuPonters when I moved into Operations. I had encountered a lot of people in management who wanted to get involved;



# News and Views

THE NEWSPAPER OF THE SAVANNAH RIVER PROJECT

VOLUME FOUR

FRIDAY, MARCH 25, 1955

NUMBER THREE

## 'Savannah River Story', Soon to Be Issued, One of 8 Films Produced by SRP Cameras

There are no "stars", and the casts consist of average employees going about their work, but Savannah River can claim some distinction as a movie locale.

To date, eight moving pictures complete with sound have been turned out on project cameras and another is yet to be completed. For the most part, the films were produced to serve as training aids in a time when it was necessary to train thousands of new employes for a job that had to be done quickly.

In a different category is another film which will be issued soon for showing to government and company officials concerned with the construction of the Savannah River Project. "The Savannah River Story", a color movie running 41 minutes, is a documentary 16-mm film illustrating the scope and complexity of the project and showing the progress of construction from the early planning stages through near completion.

The film deals with management programs carried out at the project, the financial status

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SHOOTING SCENE from Savannah River Story. Cameraman Fred Rande, right, focuses his lens on a "big 4" session that includes, clockwise from left, Robert C. Blair, manager of the AEC's Savannah River Operations Office; Construction FPM Robert E. Hanson; Curtis A. Nelson, whom Mr. Blair succeeded as SARG manager; and R. C. Stanton, former assistant field project manager in Construction. Shooting took place last fall. At left in doorway are R. H. Sackett of History Section and Dave Mahaffey, formerly of Training. Script for the story was written by Guyton Colchester, who also, along with Rande, edited the film.

## New Badges Being Made For Project Employees

Making use of a "studio on wheels", Personnel's Badge Group is completing the job of re-photographing every Construction employe.

New type badges, larger and more easily recognizable, will be issued soon. Target date for distribution has been set for May 1, depending on delivery of materials to be used in making them up.

To expedite the job of re-photographing all employes, Service Department supervision arranged to install photographic equipment in a bus no longer used in plant work. Employees in Administration Area were photographed first, and then the two-man crew took the bus to the various areas.

The method not only speeded up the operation, but took employes from their jobs for a minimum amount of time.

The new badge will meet AEC requirements for uniformity at its installations. The pictures, besides being larger, will be up-to-date likenesses, in contrast to some photos now in use which are four years old.

## E. W. O'Brien To Talk April 7 At ASME Meet

A leading Southern technical editor will address a meeting of the American Society of Mechanical Engineers' Central Savannah River Section on April 7.

The meeting will be held at the Richmond Hotel in Augusta. A social hour will begin at 6:30 p. m. and will be followed by dinner at 7:30. President M. E. Kirkpatrick of Operations announced.

Speaker for the occasion will be E. W. O'Brien, editor of the Southern Power Journal and the publication, Southern Power and Industry. His topic April 7 will be "How to Help Engineers Grow in Their Profession". Mr. O'Brien conducted a survey on that subject for the Engineering Council for Professional Development, an organization in which a number of professional societies are represented.

Alex Brunner of Development Engineering Division is program chairman.

Reservations may be made by contacting L. M. Parker, Rm. 93 in TC Administration.

A section spokesman announced that the society has made arrangements for a second trip to Plant Urquhart and that those who were unable to go on the previous tour can register for the second trip by contacting Mr. Parker.

## K. L. Stevens Transferred To Wilmington Safety

K. L. (Ken) Stevens, who headed Savannah River's Safety Department during peak construction days, has been given a new assignment in Wilmington.

He will report to the Louviers Building next Monday as assistant safety superintendent for the Construction Division, reporting to Division Safety Supt. J. A. DeLaca. News of the new assignment came last week, and Mr. Stevens left yesterday to begin his new duties.

Among the early arrivals at the Savannah River Project, he was assigned here as safety superintendent in January 1951.



Mr. Stevens

During the next three years, the project achieved an accident prevention record that is still unparalleled in the construction industry.

Mr. Stevens' most recent assignment had been as assistant service superintendent.

He began his De Post service in 1940 in the labor department at Belle Works in his native West Virginia. He earlier attended Potomac State College in Keyser, W. Va., a division of the University of West Virginia.

### WORKED AT HANFORD

Mr. Stevens also worked at the KLV Plant, a wartime Navy project operated by Du Post at Belle, and subsequently went to Hanford. After another assignment at Gopher Ordnance, St. Paul, Minn., he was sent to Waynesboro, Va., and later to the Experimental Station at Wilmington. He served at May Plant-Construction and a Deaca before coming to Savannah River.

In Wilmington Mr. Stevens will be joined shortly by his wife, the former Miss Betty Tenney of Buckhannon, W. Va., and their two daughters, Janet, 11, and Jean, 4.

Savannah River associates of Mr. Stevens gave a farewell dinner in his honor Wednesday night at the Ship Ahoy in Augusta.

## Traffic Score

(Traffic incidents listed below are accumulative from Jan. 1)

	AC.	WA.	AR.	TD.
Admin. . . . .	0	4	0	4
200-F & H . . .	0	6	2	8
Misc. Const. . .	4	1	3	8
C. S. . . . .	1	6	5	12

(AC. - Accidents; WA. - Warnings; AR. - Arrests; TD. - Total.)

The traffic incidents are listed according to the area in which the drivers work.

## Banking Facilities To Be Transferred To Columbia Thursday

Employees have been reminded that next Thursday will be the final day of operation for the project bank.

Banking facilities of the South Carolina National Bank on next Friday will be transferred to the Columbia office of the bank.

The Columbia office will handle not only checking and savings accounts of employees who wish

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NOBLE STUDIO used in taking photographs for new badges has a customer in G. M. Head, Du Post's chief engineer and head of the Engineering Department. Mr. Head has his picture made for the new type badge by Earl Bates of the Badge Group in the converted bus which has toured the project in recent weeks.



IN THE HOME STRETCH on team leaders in Savannah River's bowling league are, from left, Lawrence, Don Spence, Ed Higgins, Ken Eggleston, Rough Riders; and Dave Kilbourne, Rebels; standing, John B. Lindsey, Pipe Office; Earl O'Neal, Little Wheels; Fred West, Hi-Men; and Don Mitchell, Shop. The bowlers wind up their 20-week season on April 6.

**BOWLING STANDINGS**

Woo Lost	
Bull Dogs	31 13
Rebels	29 15
Little Wheels	24 20
Pipe Office	22 22
Rough Riders	22 22
Hi-Men	20 24
Pipe Shop	14 30
Instruments	14 30
1st high team 3-game series--	
Rebels, 2451	
1st high individual game--	
Manning, Rough Riders, 221	
2nd high individual game--	
Stewart, Pipe Shop, 201	
1st high individual series--	
H. May, Rebels, 352	
2nd high individual series--	
Stewart, Pipe Shop, 340	

TEAM LEADERS	
Rebels	Kilbourne, .161
Instruments	Williams, B. .146
Bull Dogs	Spence, .170
Pipe Shop	Tichnell, .143
Little Wheels	Flippo, .156
Pipe Office	Myers, .158
Hi-Men	West, .162
Rough Riders	Eggleston, .168

**Blue Cross, Shield Now Cover 83,000**

More than 83,000 active and retired Du Pont employees were protected against medical emergencies by the Company's Blue Cross-Blue Shield hospital and surgical plan in 1954.

Added in 1952 to the panel of medical and benefit plans designed to improve health and to help the employe weather emergencies and illnesses, the hospital-surgical plan covers more than 78,000 employes with one or more years of service and 4,500 retired employes. Cost of the plan in 1954 exceeded \$2,800,000.

**Lindsey on Visit**

John B. Lindsey, former training superintendent at Savannah River arrived yesterday for a two-day visit to the project. Now training supervisor for the Engineering Department, Mr. Lindsey is spending yesterday and today conferring with management regarding training programs.

**Savannah River...**

Continued from Page 1 and the physical progress. The work of a small group of employes who have produced movies in addition to performing other duties, "The Savannah River Story" is the longest and most complete film produced at the project to date. Another movie, a history of the project dealing in more general subjects, will be completed later, making use of film shot throughout the progress of construction. It will show in 35-mm color film scenes of Ellenton before its evacuation and will follow the project through various phases of construction.

Yet to be named, the new film was begun at the request of the Atomic Energy Commission for its film library.

**LIMITED STAFF**

Project movies issued to date make an impressive showing, particularly in view of the fact that the production staff consisted usually of a cameraman and a writer. However, the pictures would have been impossible without the help of crews of employes representing many crafts and departments. The casts for the film run to thousands, all of them employes. Scenes range from close-ups of field, shop and office to shots of mass safety meetings attended by vast numbers.

While most of the films are not of general public interest, one, "Builders of Tomorrow" has been shown to many civic groups in surrounding communities and to safety meetings in many parts of the nation. The 32-minute color film depicts modern accident-prevention techniques--many of them developed at Savannah River--which have resulted in the outstanding safety accomplishment for which the project was recognized.

"Builders of Tomorrow" was produced by the Safety Department, while "The Savannah River Story" and the still incomplete history are the work of History Section.

**TRAINING FILMS**

Early in construction a need was felt for films to assist in the training of a fast-growing work force, most of whom were unfamiliar with Du Pont techniques and many of whom were inexperienced in heavy construction. In the spring of 1952 the Training Department began work on the first of six training films to be used as audio-visual aids.

The first, "Carpenter Shop Operations", depicts the operation of a modern, centrally-located carpenter shop on a large construction site, emphasizing new shop techniques for greater efficiency and safety.

Other Training films which followed were: two films entitled "Pipe Shop Operations"; "Crane Panels and Mass Concrete"; "Rubber Water Seals"; and "Programs for Productivity", a film showing how Labor and Masonry Department developed and used employe-incentive programs to improve the safety and efficiency of its personnel.

**Banking...**

Continued from Page 1 to continue their banking with the South Carolina National but also payroll accounts of Du Pont and cost-plus-fixed-fee sub-contractors. With the discontinuing of check-cashing service on the project, employes were also reminded that arrangements are being continued with 13 banks in near-by communities for the cashing of payroll checks without charge.



In spite of the bad weather last week-end, several fishing parties reported fair catches. Ralph Robertson of Division 2, and his party reported a catch in Santee Cooper of nine crappies and one four-pound rockfish. Bad weather forced Ralph and his party to return early, otherwise they might have improved on the previous week-end catch of 17 crappies. The interesting aspect of both of these catches is that the crappies averaged out at about two pounds each. They were all caught on silver minnows.

If any one is interested in an apparently good fishing spot, Ralph states that this spot is easily accessible from the landing at Linaw Springs, S. C. It is located directly across the lake from the landing and is marked by numerous snags and stumps. Those not familiar with crossing open water should exercise a little caution, however, since it can get pretty rough there in a short period of time.

Ed Gatlin, also of Division 2, reports several large catches of bream at Ocean Lake, which is located on the Savannah River, just below Garnet, S. C.

Reports from the coast indicate that the bad weather has had its effect on salt water fishing. Very few fish have been caught recently.

Now that the quail season has officially closed, SRP hunters seem divided as to the quantity of birds seen during the season. Some had generally excellent hunting, while other complained of the birds remaining in wood-

ed and inaccessible areas. A few had the experience in some locations of getting only covey shots. In these instances, the birds would head for the "timber" and picking up singles was almost impossible. The writer is still of the opinion that quail, like other wild life, go where they can get food and protection. If food is plentiful in a particular spot, quail will usually sacrifice some degree of protection to get at that food.

So, if you fellows want better hunting next season, why not consider planting a few strategically located strips of locolor (sagebrush, beans, or other good bird food), especially, is cheap and easy to plant. If you do not own the land, but have hunting privileges, the owner generally will be willing to cooperate 100 per cent.

The writer hunted this past season on a farm, which had a number of "locolor" bird strips. The owner of the farm could, almost without fail, predict where a covey would be at any time of the day. He in fact had been able to name and identify the coveys because of their consistency.

(Stan Fishburne, who has written Fin, Fur and Feathers for the past several months, is leaving Construction today for a new assignment in Operations. Rich thanks for the excellent job he has done. News and Views wishes him the best of luck in his new work. A new columnist will be invited to continue the column. In the meantime, outstanding with interesting stories tips or other information are invited to contact Editor from Law of Ads, 215 or write News and Views, TC-1, A-15.)

**CAN DO**

The man who gives up and says "I can't" is usually right about it.---Clinton Cellophane News.

**Bolin Assigned To Head Newly Created Div. 25**

E. W. Bolin has been named assistant field superintendent for a newly-designated division in Construction organization. Mr. Bolin, formerly AFS for 100-C and 300-700 Areas, will head Division 25, which is responsible for all construction work done on the military program. His duties are in connection with preparations for the assignment of an Army anti-aircraft unit for the defense of the project.

Other divisions under a reorganization adopted last month are Division I, responsible for 100-B, P, K, L, C, 300-M, 700-A 400-D, CMX, Outside Lines and TC Construction and Maintenance in Central Shops and TC-1 Areas, J. F. Eppen, AFS; Division II, 200-W and H Areas, including 717-F Mock-Up, H. W. Gooney, AFS; Division A, Layout, Testing and Inspection, Instrumentation and Pittsburgh Testing Laboratory, J. H. Tyson, AFS.

**YOU'RE KILLING ME**

A small porcupine was taking a morning walk. Suddenly he stepped back into a cactus plant and asked, "Is that you, Ma?"---Clinton Cellophane News.



"HOLD THAT TIGER!" in this case a very frightened kitty cat, in good advice for Patrolman Richard O'Neal who captured the T-1 prowler in H Ring after it was cornered in a vacant room. Observers speculated that the cat may never have had contact with human beings, and it was thought by persons who caught fleeting glimpses of the animal that it might even be a wildcat. Captain disclosed it to be an ordinary though overgrown tabby, displaying its anger and fright by fluffing up its tail. After the picture was made the cat was claimed by Patrolman Dave Allen and taken home in a box.

**THE 1954 OPERATING INCOME DOLLAR**  
... where it went!

35.1'	To Suppliers for Materials, Services, Miscellaneous Items
26.3'	To Employees Wages, Salaries, Benefits
2.0'	To Owners
15.9'	For Taxes
1.9'	Weld for Business Needs
9.2'	To Owners
6.6'	For Depreciation and Obsolescence

bosses who wanted to take a more active role in supervising a newspaper, and that was one of my problems. They set up this terrible procedure when they started the operations newspaper. They had a committee of practically the whole [DuPont] staff [that] had to read everything that went into the newspaper.

Management. They would say, well, why don't you do it over, do so and so, you know. Well, you couldn't just get a lot done. But pretty quickly, I think they realized that, you know a committee wasn't a real good way to run a newspaper.

It was frustrating some, but, I got over it, and it worked out very well. I didn't have any bad experiences. That continued only for a year or so, until I got things, I got a boss who kind of went to bat for me and told these guys to leave me alone, because a lot of them didn't know anything about editing a newspaper. They were very capable production people industry-wise, but they really didn't know much about newspapers.

Well, the primary responsibility [of the paper] was communication between management and employees; portraying the Company in a favorable light to employees. A lot of it goes public too, to give the public a good impression of the Plant and its employees. The morale of the employees was a lot to recognize, employees who had done something significant on the job or off the job. Community activities were played up and that kind of thing. Of course, [we were] particularly responsible for promoting safety and, to some extent, security.

I felt like I might have made some contribution in creating goodwill among employees and between employees and management. That was my job as much as anything.... I think when we did stories on families, for their service anniversary or because they had done something significant in the community. I thought that it made those people feel like they were recognized and appreciated.<sup>8</sup>

The plant newspaper would continue to inform the SRP community from the 1950s onward until the internet and electronic communications made inroads into its mission in the 1990s. It handled everything from the birth of children to plant employees to the peaceful uses of atomic energy and the discovery of the neutrino. While its editorial policy remained essentially the same, its appearance and means of circulation changed over time as did its content that always reflected the decade and culture that produced it. Visually engaging particularly during the 1950s and 1960s with its many cartoons, photographs and personal articles, it remains one of the best windows into SRP's past. Each issue offers highlights on the people, community and company that pioneered nuclear development in the CSRA.



*A member of the 200-F building softball team gets a hit at one of the Operations Recreation Association sponsored sporting events.*

### Operations Recreation Association

A front-page banner headline in the SRP News and Views for July 3, 1952, notified employees that recreation areas were to be established, on site property just outside of the perimeter fence. They would provide areas for “baseball, softball, volley ball and horse shoe pitching,” as well as children’s playgrounds and picnic facilities. The Operations Recreation Association (ORA) was established in early 1953. Frank White, former all-American basketball player, was named director of the program. Fifteen recreation associations were organized by area, and would establish their own programs and collect their own operating fees. A central recreation committee would work on special plant-wide events.

Relying on proceeds from soft drink machine sales and nominal membership fees (\$1.50), the ORA managed what would become “one of the largest recreational programs for any one plant in the world.” The first outing was held at Lake Olmstead and featured sack races, broom balancing and a tug of war, with some of the participants wearing a coat and tie. Later activities included not only athletics but also picnics, dances, and variety of other entertainment events like a boxing exhibition presented by world champion Beau Jack or top name big bands such as Tex Beneke and Blue Barron. Over 2300 attended the Carpenter’s Ball held in Bell Auditorium June 14, 1952.

There were initially two recreation associations. Set up in August 1952, the Colored Recreation Association provided entertainment for African-American construction employees. When the association was discontinued at the end of 1954, it was noted to have been the largest and most active recreation group at the plant, with a



*Colored Recreation Association Fish Fry, Sat. April 4th, 1952 at Oak Grove Park near Barnwell. "A crowd of more than 2,000 is expected to attend the full day's event. Besides the fish fry, other events on the program include a preaching service, a baseball game and a boxing exhibition by Beau Jack, former world's lightweight champion." (SRP News)*

peak membership of 3,358. After 1955, instead of separate organizations, separate events were organized by the ORA, which had both black and white members. This pattern was influenced by local custom. Many of the hotels, restaurants, lounges, and other venues of recreation activities in the area remained segregated into the 1960s, which would have effectively segregated offsite recreation activities.

The plant newspaper helped spread the word about events and provided strong coverage of all association activities with articles and event photographs in each edition. Du Pont management encouraged this attention to promote employee morale. Editor Don Law noted that the policy worked: "They were very much behind it. It was a morale thing.

Well, it was a big happy family. Du Pont was very paternalistic and they wanted a big happy family and that was one way to have one.... The things like the family picnics; the picnics were for families. Du Pont prided itself on being family oriented and if you had sickness in your family, your supervisor made it his business to be concerned, to inquire and be concerned and offer help. All the Du Pont Employee Relations plans were slanted in that direction with the Blue Cross and Blue Shield, later dental insurance, and things that covered the family, and life insurance for people. Young employees who died, families were left with nice insurance settlements. That would have been unheard of in previous days and in rural South Carolina, let's say.<sup>9</sup>



*Central Shops Blacksmith's Bar-B-Que at Recreation Park No. 2.*

In 1960, 50 percent of SRP's eligible employees were members of the association. The association continued to flourish until 1965 when its membership decreased to 30 percent. The Plant History offered the following reasons for this abrupt change: a decrease in planned activities and that most ORA functions were based in the August area in 1965. Membership remained at the 30 percent level through 1970 but grew slightly by 1975. In that year the membership contained eligible employees, retirees, and survivors of retirees.

ORA membership continued to grow. By 1980, it reached the 52 percent level of eligible employees and its rolls contained hundreds of additional pensioners or survivors of pensioners. The ORA signed an agreement in 1982 with the plant to receive profits from Coke machine sales at SRP. The additional funding, estimated at \$200,000 per year, was to be used by the association for operations and to acquire offplant recreational facilities where a softball complex would later be sited. The next year, the Savannah River Plant History noted that 1983 "was ORA's finest year." Membership reached a high of 62 percent, negotiations for a 210-acre tract with a lake eight miles from the plant were mostly completed, and employee activities (softball, children's roller skating and children's Christmas party) were very well attended. In addition, the ORA opened a store in the original SRP cafeteria (708-A) that catered to the needs of plant employees, small items (cards, birthday balloons) as well as golf balls and hats with the SRS logo could be purchased. When the cafeteria in A Area was demolished, the store was reestablished in the H Area training facility. The ORA's popularity continues to flourish under the guidance of its own staff and remains a vital part of SRS's workplace, creating fellowship among the Savannah River community through its events and programming.



*(From left to right) C. A. Creech, Lorenzo Lawson, W. Miller, W. A. Goodwin, O. Allen), Automotive Shop, Building 716-A, 1978.*

## TRAFFIC AND TRANSPORTATION DEPARTMENT

Five major divisions made up the Traffic and Transportation Department (T&T): Traffic, Labor and Heavy Equipment, Automotive and Equipment Maintenance, and the Railroad Division. The main responsibilities of the Traffic Division were to provide transportation services to employees transferring or reporting to the plant; this included the movement of household goods and personal effects. Secondly, they provided travel services such as reservations to employees traveling on official business. This division also kept track of shipping schedules and associated rates. Labor and Heavy Equipment was responsible for the maintenance of site roads, parking lots, walks and grounds. They also carried out the removal of contaminated materials to burial grounds, the movement of coal on site, and supplied a manual labor force when needed. The Automotive Division was responsible for furnishing transportation services to meet plant needs; in addition to maintaining a fleet inventory of over 600 vehicles, it operated motor pools within the plant property and shuttle services for employees held beyond normal working hours. The Equipment Maintenance Division was responsible for servicing, maintaining and repairing all automotive and heavy equipment. The Railroad Division was responsible for the movement of rail cars on site as well as the maintenance of rail tracks and roadbeds associated with the railroad.

This department was integral to all operations across the site; activities ranged from breaking down beaver dams that imperiled site roads to moving mammoth heat exchangers into the reactors. A 1955 SRP news article noted that the cumulative mileage for one month for all the site’s vehicles add up to a total of 835,000 miles, “a distance also equal to 33 trips around the earth or over three trips to the moon.” To run the fleet of trucks, tractors, and light equipment alone required nearly 800,000 gallons of gasoline monthly along with 50,000 quarts of oil. Heavy equipment (riggers, cranes, bulldozers, etc.) needed to handle a miscellany of site operations was garaged in Central Shops.

SRP’s railroad operations were stretched over 60 miles of standard gauge track; the Classification Yard near the Dunbarton town site was the hub of activity. This division was responsible for the operation of the rolling stock and maintenance of the site’s tracks. The site’s tracks connected with the Charleston & Western Railroad at the site of Ellenton and the Atlantic Coast Line tracks at the site of Dunbarton. Four crews were assembled to handle the workload in 1955, in which the site’s eight diesel engines handled about 2,700 cars (including coal deliveries) a month.<sup>10</sup> The Railroad Division was also responsible for the delivery of irradiated fuels from the 100 Areas to the 200 Areas. Fuel elements and targets were delivered to the 100 Areas by truck. Table 9 provides some idea of the size and scope of the materials handled by the Traffic and Transportation Department over a 10-year period, showing a lessening of activity in the mid 1970s particularly via the site railroad.

**Table 9. Traffic and Transportation Department Statistics, 1965-1975**

Date	RR cars received	RR cars forwarded	Intra plant cars moved	Loaded trucks received	Loaded trucks forwarded	Coal cars handled	Automotive Fleet
1960	11,599	83	4,404	4,543	843	10,650	Not given
1965	10,608	48	3,434	2,157	618	10,565	Not given
1970	9,562	64	2,719	Not given	Not given	10,472	673
1975	12	160	1,134	Not given	Not given	8,563	686

(Sources: Savannah River Plant History, July 1954 to December 1972, All Areas; Savannah River Plant History, January 1973-December 1986)

Shepherd Archie, who worked early on in the Traffic and Transportation Department, gives his remembrances of his experience at the plant in an oral history interview:

When I came out of the Army, I had an auntie living here in Augusta, and I came to Augusta, and her husband—and he was working for the VA [Veterans Administration] Hospital, he advised me to apply at the plant, so I went out there and applied at the plant.

He said that, “If I was you, I would go out to apply at the—” They called it then the bombing plant. So I went out there and applied. He thought that would be a good place because it was just getting off the ground, you know, just building, and he was thinking that would be a good place to start at the ground root and work yourself up in the plant.

When I first came here, they had a high opinion of the plant. That was really the golden spot of this area, the Savannah River Plant. They didn’t say the “Savannah Plant.” Most people called



*Shuttle service was provided to employees that were asked to work past their normal working hours.*

it the bombing plant. They paid more money than any other place here, because at that time the labor salary was seventy-five cents an hour, and a dollar. And I went out there working, and my first week working was a dollar and twelve cents an hour, see, but that was more than anybody else was paying.

They called me for supervisor, and I was placed in—you might not want to hear what

I'm fixing to say—but I was placed in a position in T and T [Traffic and Transportation]. Being in T and T, they didn't have the top-grade peoples, you know. You put in there what they call "rednecks," supervisors. They wouldn't even speak to me. But I had a good supervisor named Don Grogan. He was over here. He was a real nice man.

But I want to get back. The best person I ever met at the plant was a plant manager named J.D. Ellett. He was a real nice man. So when I went in there, I said, "What am I going to do? I'm in a place here where nobody won't show me nothing. I've got a job I have never did before. Nobody's going to show me anything." So I didn't know what in the world I was going to do in there. I didn't tell my wife, I didn't tell nobody, just sitting there. I was in here looking at television, and I looked at a show—I imagine you was a little boy—called "Wild Kingdom."

And there were a pack of wild dogs. They picked out a caribou. He was weak, and they followed him around until they got him. I picked out me a man at the Savannah River Plant, a white guy, he would talk to me, and me and him got to talking and talking and talking, and we got to be close, and before they knew it, he had done sold me to everybody, and everybody came around. This one particular man sold it to them.

So that's when I started moving. After I got in there, I let them know that I wasn't a radical man, that I wanted the same thing they wanted, and I was eager to learn. Then they went to showing me. The best thing to know about a person, don't know everything. You might know how to move this from there over to there, but go to him and ask him, "How would I move that from here over to there?"

So that's what I did, so I started moving up in the plant, and I didn't have no problems. They went to showing me everything, the whole plant. This one was going to show me what he was doing, this one was going to show me what he was doing, and what they didn't know anything, I had got everything from everybody. And that is how I made it at the Savannah River Plant.

When I first come in, why I got hired so fast, the first thing, when they open up a plant, they need what? Janitors. So I applied for a janitor. I wanted to get in there. So they applied me for a janitor. I worked as a janitor eleven months, then I went to T and T, transportation. I was in the old schoolhouse in Ellenton. That was my first job, down in the schoolhouse down there. I was a janitor down there. They had an office down there, in Ellenton, South Carolina. So that was my first job.

What happened, you cannot force no one to do the right thing. You've got to let them do it on their own. You've got to carry yourself in the way they will give it to you, not you go try to take it. See, I could ask you for something, you will give it to me, but if I try to take it, you're going to rebel. You're going to take longer giving it to me. So we decided we wouldn't do that. Most of them came up through the segregation world, and we know how, and we were trying to make it better for our kids by going along whatever they do.

We knew we couldn't go in the cafeteria and eat like other people; we had to go in the corner. We'd bring our lunch. We sat up in a group and eat. We know we didn't have bathrooms to go to, wash our hands. When we'd go in the field to do jobs, we would carry fifty-five-gallon drums with water on it to wash our hands. So we didn't rebel.

As it come, and when it did come—they integrated all the bathrooms—we didn't just run in there, and say, "I'm going to take this locker, I'm going to take that locker." We eased into what locker is available, easing in. So, trying to make it better for the next generation to come. So that is how we worked it.

Now these things here, the supervision didn't know nothing about it. We talked that among ourselves, and we tried to be a part of the plant. Just like I'd tell them, said, "Now we might not run the reactors, we might not run the powerhouse, we might not run the administration building, but we repair the road for them to get there." We're making a big contribution towards the plant. We repair the roads to get there, we repair the water lines, we do that. We're making a great part of it for these people who are running the reactor, because they couldn't run the reactor if they couldn't get to it. They couldn't run the reactor if they didn't have water. So we're doing the greater part. Your job ain't low. Your job is just as big as the man pushing the buttons in the reactor.<sup>11</sup>

Mr. Archie worked at SRP from 1953 until his retirement. His career spanned the plant's construction and its operation throughout the Cold War and his remembrances bear witness to not only these events but also to the history of race relations in the South during this period.

In 1980, SRP began to receive radioactive waste from other DOE sites that entailed the acquisition of new transportation equipment as well as the expansion of a sanitary landfill. The Traffic and Transportation Department played a role these changes. In addition, a long-range plan was adopted to increase the amount of secondary

roads, to elevate the standard of maintenance and to upgrade/replace secondary roads and bridges. The latter effort was developed to enable the USFS to more efficiently achieve their timber harvesting efforts.



*Clerical employee, Edna Bergan, in the Central File Room, located in the basement of Building 703-A, 1957.*

## CLERICAL DEPARTMENT

One of the main functions of the Clerical Department was to supply clerical staff for the following activities on site: Purchasing, Stores, Payroll, Mail Delivery, Reproduction, Communications, Stenographic Pool, Expense Accounts, and Records. Briefly, the responsibilities for the different sections were as follows: Purchasing procured supplies, equipment and services required to operate the plant. Stores received and checked all materials shipped to and from SRP and maintained an inventory of general supplies, spare parts and machinery. Clerical employees assigned to Payroll were responsible for timekeeping, preparation of reports and statistics

pertaining to wages and, maybe most importantly, the distribution of paychecks, which were delivered to each area by employees designated assistant paymasters. The Mail and Stationery Section received and distributed mail to and from all areas, as well as procuring stationery supplies for the whole plant. Reproduction was responsible for just that, reproduction. Originally, this section used Photostat, mimeograph, ditto and microfilm to reproduce documents. Communications managed the telephone exchange located in 702-A as well as all other activity related to telephones, telegraph and Teletype on site. In addition, this section was responsible for the procurement and repair of office equipment for the entire site. The Expense Account Section dealt with expenses for miscellaneous services or materials not covered by formal purchase order, including traveling and moving expenses. The Records Section was responsible for the formulation and administration of the records management program; this section also controlled storage, retention, disposal and preservation of all plant records.



*Jim Penn of the Disbursement Section shows off one month's supply of bills and purchase orders, 1-14-1957.*

For some, a clerical position was their first job at the plant. Raine Weimortz remembers at age 16 making the decision to apply to SRP:

At 16 I said, "Well, I can either go to work at SRP, they pay really well, [or] I could look at a degree. What I want to do, I can go to work and go get a degree if I want to. Okay, that's what



*The Telephone Exchange was located in Building 702-A.*

I'll do." And I just made up my mind back in '76 you could, if you put in an application to come to work out here it took about a year for them to review your application. So I put my application, me and a girlfriend put our applications in when I was 17. I said, "Okay, if I put my application in at 17, at 18 they'll hire me.

And they did. And I came in as a clerk, delivering the mail in "P" Area, in the reactors and then I picked up, because we didn't have computers, I would pick up the process data from all the running reactors and take it here to "A" Area where they would process and I had to handle secret material, you know, and sign for it and I just

felt so responsible about that and always admired the folks who actually ran the processors and did the work, and there weren't any females doing it. I think there was like, two. And I can remember the first one, because they called her Charley. Her name was Loretta. But you know, they didn't have any women doing that. I know I worked very hard doing the mail and then after that I became an Area clerk in "K" Area. And we worked really hard. Me and the girl in there, the typist, they had a clerk and a typist and that was it. We took care of all the paper work and all the procedures and all everything for the whole building. And I know that we worked harder than most of those reactor operators did and we made a whole lot less money.<sup>12</sup>

Raine Weimortz spoke from experience as she would become a reactor operator and shift manager within the Reactor department later in her career.

## SERVICE DEPARTMENT

The activities of the Service Department were divided amongst five divisions: Safety, Housing, Janitor and Laundry Service, Cafeteria, and Fire Protection. The topic of Safety, paramount at SRP, warranted its own chapter and can be found preceding this chapter.

### Employee Housing Program

The decision not to create a government town, but instead to rely on local communities and private enterprise to meet the essential housing and community service needs of SRP, was a major step for the AEC. Initially, their

hands-off policy seemed a neat solution, allowing them to concentrate on building the production facility rather than dealing with the construction and administration, and the associated problems, of a government town. Its stated policy was to estimate the projected workforce and its character for local community leaders, so that they could plan for housing and for providing services. The AEC would also call for help from sister Federal agencies that specialized in housing and in developing funding for community services in defense areas. The AEC would then provide data from past AEC installation experience, cooperate, and informally expedite the “program.”<sup>13</sup>

While this policy sounded practical, the “program,” without any central authority to orchestrate it, wasn’t really a program. The AEC began taking the heat for the housing situation early in 1951. An exasperated AEC staff member wrote, “The hard fact (is) that in the minds of the people of this area, the AEC is responsible for the whole impact of this Project. It is to the AEC that these communities look for action, and it is the AEC that has been, to date, the recipient of the ‘gripes’ and criticisms that arise. To them, the AEC is the government, so far as this Project and its impact are concerned.”<sup>14</sup> To be successful, the program called for a coalition between Du Pont, the Federal Housing Administration (FHA), Housing and Home Finance Agency (HHFA), private builders, and local planning agencies to provide the needed housing and services. Such a coalition was not occurring naturally, so the AEC, trying to move forward, recommended that Du Pont take the lead. The contractor was asked to estimate the project’s impact on the plant communities; these estimates were to be based on manpower requirements for building the plant and for later operating the plant.



*A Construction-Era Trailer Park.*

All agreed that housing problems for the labor force were twofold. First, housing was needed for the temporary population increase engendered by construction. Du Pont forecasted that 17,000 temporary employees would need housing by August 1951; 24,000 by October 1951; 31,000 by January 1952; 34,500 by April 1952;

and 36,000 by June 1952. Second, housing was needed for the operation staff. Thus, the following incremental forecast was made for permanent employees: 250 by January 1952; 3,300 by July 1952; 5,100 by January 1953; 5,600 by January 1954; and 6,000 by July 1954. To better shape the forecast, several other assumptions were made about the incoming forces. Sixty percent would have families; the remainder of the workers would be single. Local labor would supply only one-third of the workforce. One-third of incoming families would be trailer owners. Many of these variables were based on data from other AEC sites.<sup>15</sup> With the determination of engineers used to problem solving, housing estimates were formulated using the best data at hand. Well-reasoned, but incorrect, they simply did not reflect the many possible variables, cultural and economic, that could be involved in how a family or individual picks a home. Du Pont's housing personnel did the best with the resources at hand, but the overall effort and the coordination among federal agencies required to provide the needed housing and community services was not in place.



*Interior of one of the Construction-Era Trailers.*

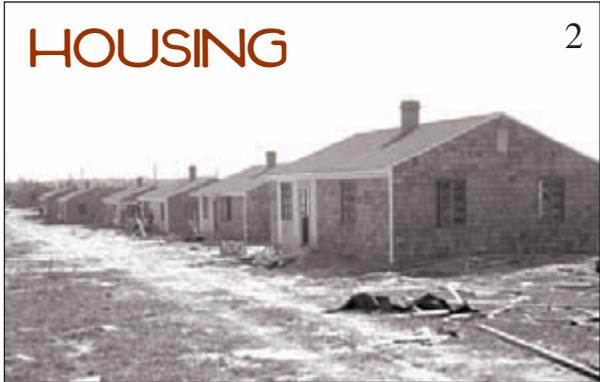
A pre-acquisition survey indicated that not only was area housing limited, but that it was also considered substandard. Fifty-three percent of Augusta's 21,000 residential units were considered substandard in a report titled *Consolidated Report on Savannah River Plant*.<sup>16</sup> Other area communities were similarly evaluated. Given

the number and location of bridges over the Savannah River, Augusta was the only likely Georgia community to absorb some of the workforce. However, the simultaneous expansion of Camp Gordon, Oliver General Hospital, and the Augusta Arsenal actually put military personnel in competition with plant personnel for housing. Regulation X, issued by the Federal Reserve System in September 1950, was a critical thorn in the AEC's battle for housing. Underneath that regulation, strict limits were placed on residential real estate credit, thus creating a tight mortgage market and extremely unfavorable lending circumstances for developers or builders. The Federal Housing Administration only insured 58 mortgages in Aiken, Allendale, and Barnwell counties in South Carolina, and Richmond County, Georgia, in 1950.<sup>17</sup>

Augusta and Richmond County had active planning and zoning commissions with funding for full-time staff in place. A city-county zoning plan was under development and city-county subdivision control was in effect shortly after the plant selection announcement. In addition, the city and county had enforced trailer-park ordinances. Augusta and Richmond County were better equipped to handle the change ahead. The South Carolina communities were not. A state act passed quickly after the plant announcement that allowed counties experiencing a sudden influx of population to establish planning commissions with limited zoning powers. Aiken revised its zoning ordinances and adopted trailer-park regulations, with cooperation from a representative of the Trailer Coach Manufacturer's Association.<sup>18</sup>

The ability of local resources to respond to the housing problem was limited. The efforts of the Western Carolina Council were notable. This organization, formed in May 1951, represented the interests of eight of South Carolina's counties within a 50-mile radius of the plant. John A. May was the president of the council.<sup>19</sup> While the Council was effective as a pressure group lobbying for federal funds, it did not rally local or state resources to help with the approaching housing shortage. An Area Defense Mobilization Committee organized by the Office of Defense Mobilization (ODM) was short-lived and ineffective. While the ODM designated a local official to coordinate the federal programs of housing and community services, the position was not backed by congressional authority. Rent-control legislation was enacted and federal programs that would assist with transportation, health, and welfare issues were also invoked. The real problems - housing, community facilities, and local planning - could not really be addressed without federal legislation and appropriations.<sup>20</sup>

The AEC requested that Du Pont find temporary housing for the incoming force; in response, Du Pont hired a housing specialist. Du Pont's housing personnel, working through newspaper advertisements, room-scouts, and word of mouth, had been successful in finding rooms and houses for the first newcomers, but by mid-July these resources were running dry. Early progress reports for October and December 1951 show that incoming employees for Du Pont were staying at the Bon Air Hotel or in private homes while they waited for available housing or loans to buy a home.<sup>21</sup> Approximately 80 hotel rooms and 100 homes were leased to Du Pont to handle immediate housing. The AEC's request for the FHA and the Office of the Housing Expeditor to waive veteran's preferences on 182 existing units had been granted, and Du Pont had reserved these rentals for AEC and Du Pont personnel. However, in order to hold these units, Du Pont was forced to pay rent on those that were unoccupied. The AEC had also requested that the Army restrict any further expansion of Camp Gordon.<sup>22</sup> Despite working all of these angles, the shortage of housing units in comparison to the forecast of incoming laborers was grim.



Ranch housing set on curving streets and "boxlike" dwellings regimented in a line characterized the majority of the early 1950s housing. Courtesy of SRS Archives.

- 1 - "Buy or Build," Site for Lynnhurst Housing Development, North Augusta, 1951. Negative DPESF-6962.
- 2 - Operations housing, Williston, 1951. This type of housing was also constructed in neighboring Barnwell. Negative M-700-3.
- 3 - Operations housing, Crosland Park, Aiken, 1951. Negative M-725-3.
- 4 - Housing constructed by Creadick, Aiken. Negative M-639.
- 5 - Savannah Heights, Augusta, 1951. Negative DPESF-6963.
- 6 - Housing units for African-American employees, Williston. Negative M-1354.
- 7 - Pine View Annex, Knox-Carolina Homes, 1951. Negative 6989-1.

True relief came with the passing of Public Law 139, The Defense Housing and Community Facilities and Services Act. Enacted late in 1951 by the 82<sup>nd</sup> Congress, it authorized the expenditure of \$100 million and later appropriations equaling \$28,625 million for housing and services in critical defense areas across the nation. The benefits of the act, which did not include local planning assistance or field interagency coordination, were available through June 30, 1953; Public Law 94 of the 83<sup>rd</sup> Congress extended the 1953 deadline. The housing provisions of this act primarily benefited defense workers and, in the Central Savannah River Area (CSRA), it was used to provide housing for the operations staff. The act first called for the designation of a critical defense-housing area. In the project area, the critical defense area was defined as the counties surrounding the plant: Richmond County, Georgia, and Aiken, Barnwell, and Allendale counties in South Carolina. The area was later expanded to cover all of Columbia and McDuffie counties in Georgia; Militia District 9 (Wrens Town) in Jefferson County, Georgia; and Bamberg and Orangeburg counties in South Carolina.

Within the defined area, the act allowed for the relaxation of credit controls on residential construction, provided special FHA mortgage-insurance terms on certain types of new sale and rental housing to be “programmed” by HHFA for the area, and offered special FNMA mortgage purchase assistance. With such enticements available, it was hoped that private builders and developers would meet housing needs. If they did not after 90 days, the federal government as a last resort could construct and operate housing. The latter did not occur in the CSRA for housing targeted for the permanent work force. The HHFA administered the housing program funded under the new legislation; approximately \$6 million dollars of aid was spent in the CSRA. A total of 3,225 rental units and 625 sale units were built in the CSRA; 78.9 percent were constructed in Augusta/North Augusta/Aiken and the remaining number were distributed among the other towns.<sup>23</sup>

New residential housing in the project environs began to appear as the assistance programs provided under Public Law 139 got under way. By 1953, the FHA was insuring mortgages for 3,319 homes; two years earlier that number stood at 58. A University of North Carolina (UNC) study group estimated the number of new dwellings, programmed and non-programmed, at 8,690.<sup>24</sup> Most incoming personnel moved into rental or programmed housing initially, then bought or built houses when they were able.<sup>25</sup> A 1953 AEC study showed that there was an overwhelming preference for the Aiken area. Sixty-seven percent of AEC and Du Pont workers who lived in programmed housing settled in Aiken. The distribution of programmed rental housing by town showed Augusta with 1,090 units, Aiken with 875 units, North Augusta with 578 units, Barnwell with 287 units, Williston with 186 units, Blackville with 123 units, and Allendale with 85. In addition, there were 625 housing units constructed for sale.<sup>26</sup>

Two- and three-bedroom units were preferred, and those who had large families and were in need of four-bedroom homes had difficulty finding adequate accommodations. According to the UNC study, one-bedroom units typically rented for \$60 a month, two-bedroom units for \$65, and three-bedrooms units for \$75. These rents were usually the maximum allowed by HHFA regulations. A Du Pont monthly report to Wilmington in October 1951 states that the “popular demand appears to be a 3-4 bedroom single house renting at \$100 to \$125 per month.”<sup>27</sup> This is considerably higher than the monthly rate identified by the UNC study. In some cases, members of the construction force were in a better financial position to pay such rentals than were some of the incoming operations workers. About 73 percent of the incoming construction force interviewed by the University of North

Carolina study made \$500 a month or more. Only 38 percent of the operations force interviewed made \$500 a month or above.<sup>28</sup>

Between November 28, 1950, and January 1953, a total of 5,465 non-programmed houses were also constructed. The FHA financed some, but many were financed through other means. Augusta had the lion's share at 2,700, then Aiken at 1,420. North Augusta, Barnwell, Williston, Allendale, New Ellenton, Blackville, and Jackson had 620, 225, 140, 120, 105, 70, and 65, respectively. In addition, the town of New Ellenton, just established, had 195 homes that had been moved from the plant area. A total of 132 additional homes were moved to Jackson from the plant area. Also the Hollow Creek section on Highway 781, about six miles west of New Ellenton, and a settlement north and west of Ellenton became home to concentrations of African-American households. The majority of homes in these new settlements had been moved from the plant area. Barnwell, Williston, and roads that led to the plant were also venues where plant area homes had been relocated.

A summary of plat information for available lots or homes under development in the early 1950s was compiled by the Du Pont Housing Office to apprise new personnel about potential housing.<sup>29</sup> Most of the plats show high-density expectations with average lot sizes of 70 x 125 feet. The SRP plat book provided the basic information on what individual subdivisions, currently under development, had to offer for prospective owners/renters and identifies the developers within the area. Unfortunately, there was no notation within the plat book that indicated which, if any, of the developments were considered programmed housing. However, the UNC study did state that the residential developments in areas other than Aiken and Augusta received more federal help than the two more urbanized areas. The identification of owners/developers shows some firms had multiple residential developments and that at least one firm had multiple programmed housing for sale. Articles from the area newspapers and from the plant newspapers helped flesh out the plat book information.

The plat book cites Richmond Hills, Kendon Park, Forest Hills, Thomas Woods, Glendale, Walker Villa, and the Marion Homes as possible home locations in Augusta for the permanent work force. Eugene Martini built the Marion Homes subdivision off Sand Bar Ferry Road in Augusta. This subdivision contained 120 single-family homes and 40 duplexes on its seven blocks. Martini, an Atlanta-based landscape architect and owner of the Marion Homes Corporation, was associated with the Virginia Acres development in Aiken and also the Glendale subdivision in Augusta. Thomas Woods, located off Deans Bridge Road, contained 123 lots within an eight-block layout. The South Carolina firm of Lyles, Bisset, Carlisle & Wolff and Emory Holyrod Jr. Associates of Columbia were credited with its development. Kendon Park was located near Bungalow Road, Forest Hills near Deans Bridge Road, Richmond Hills near Whiskey Lake, and Walker Villa by Laney Walker Boulevard. Not mentioned in the plat book were Richmond Apartments near Fleming Heights by Knox Homes of Thomson, Myrtle Court by Sherman and Hemstreet, and Golf Court by Blanchard and Calhoun.<sup>30</sup>

Only two new North Augusta subdivisions were shown in the SRP plat book: Summerfield by the Knox Corporation and Green Acres by John McDonald. This suggests that both were programmed housing. Lynnhurst, Hammond Hills, Washington Homes, Savannah Terrace, Smithfield, Mayfair, Belvedere Ridge, Fowke Hurst, Mealing Heights, and Lakewood were other North Augusta subdivisions associated with the 1950s housing expansion.

Aiken's largest subdivision was Crosland Park. Characterized by one oral history interviewee as the "in" place for supervisory personnel <sup>31</sup>, it was designed by the architectural firm of Lyles, Bisset, Carlisle & Wolff, Emory Holyrod Jr. Associates of Columbia. It was built by Gross-Morton on an approximately 200-acre tract north of Aiken. A total of 542 homes were constructed, of which 437 were rented at \$75/month to Savannah River Plant employees. The remaining homes were sold to qualified buyers at \$9,990. The setting for Crosland Park was described as a rolling wooded tract on York Street a half mile north of Aiken's business district. The one-story homes were of "modified Colonial design including eleven different elevations and three different floor plans." This subdivision won nationwide recognition when Gross-Morton received an award for outstanding achievement in home design in the Merit Award Program of the National Association of Home Builders. The judges noted that the homes "present a lot of livability in a small area."<sup>32</sup>

The same architectural firm was responsible for Virginia Acres, which featured one-story duplexes and single homes located south of Aiken's business district along Highway 19, and also Thomas Woods on Dean's Bridge Road in Augusta, Barnwell Heights in Barnwell, and Williston Woods in Williston. While no documentation was found, it is probable that Virginia Acres also represented a second programmed development. The duplex apartments in Virginia Acres were popular due to their proximity to the plant and their low rental costs per month. Remnants of this subdivision still exist around the H. O. Weeks Recreation Center. Barnwell Heights, designed by the Columbia firm, was a programmed housing development.

Dartmoor Acres located near Aiken's South Boundary Drive had 64 lots with "Lovely Pine and Magnolia Trees Restricted to Homes of 1200 square feet or more. Custom Built to owner's plan or to ours." Aiken Heights, built by E. A. Kunding on a 50-acre tract located south of Old Trolley Line Road, featured "practical" house types "to accommodate a good-sized family and within the price range of the average family." Their model home, "The Jewel," and others like it could be purchased with FHA or VA financing. Kunding, a Michigan firm, also built a hotel-type housing unit in Williston and a trailer camp for plant workers.<sup>33</sup>

Barnwell's residential building stock swelled with programmed housing, including the Kilkenny Acres development that included 130 single homes, and expansions of Barnwell Heights, Peachtree Gardens, and Hagood Heights. A total of 291 homes were built under federal programs in Barnwell.<sup>34</sup>

Table 10 describes the subdivisions that were associated with SRP between 1951 and 1953. After the construction era, the DOE and its predecessor agencies would no longer be involved with housing the SRP community. Many of the subdivisions, such as Crosland Park, constructed during this era are still standing and many are still occupied by Savannah River Site personnel.

**Table 10. Local Subdivisions Associated with SRP Development, 1951-1953**

Subdivision Name	Number of Lots	Date	Location	Architect/Developer
Crosland Park	575	1951	Aiken	Gross-Morton
Silver Bluff	72	nd	Aiken	Not noted
Governor Aiken Park		1951	Aiken	Robert B. Russell, Engineer
Colonial Village	104	1951	Aiken	Survey by Columbia Engineering
Virginia Acres	71	1951	Aiken	Wm. G. Lyles, Bisset, Carlisle & Wolff, A&E, R. Emory Holroyd, Jr. Associates, Columbia, Eugene R. Martini, LA, Atlanta, Ga
Forest Heights	356	Dec-51	Aiken	Plat drawn by W.A. Sanders
Dartmoor Woods	64	Oct-53	Aiken	Combs-McDonald Construction Co.
Lynnhurst Annex	–	Aug-51	Aiken Co.	Not noted
Elmwood Park	66	nd	Aiken Co.	Robert E. Penland and Hamilton Dicks
Lawton Acres	77	Mar-52	Allendale	A.L. Ervin, Florence
Parkwood Terrace	112	1952	Allendale	Parkwood Company
Richmond Hills	135	Nov-51	Augusta	E. Eugene Tovell, Reg. Engineer
Walker Villa	128	nd	Augusta	Not noted
Kendon Park	111	Jan-50	Augusta	Approved by Augusta City Planning Commission
Forest Hills	–	Feb-52	Augusta	Not noted
Marion Homes	160	Jan-52	Augusta	Eugene R. Martini, LA, Owner Marion Homes Corp.
Glendale	73	Jul-52	Richmond Co.	Eugene R. Martini, LA and Surveyor
Thomas Woods	123	Jun-52	Richmond Co	Wm. G. Lyles, Bissett, Carlisle & Wolff, A&E, R. Emory Holroyd, Jr. Associates, Columbia
Kilkenny Acres	216	nd	Barnwell	Not noted
Peachtree Gardens	46	nd	Barnwell	“Proposed Re-Subdivision- Peachtree Gardens for Barnwell Peanut Co.” Knox Corp, Thomson
Barnwell Heights	–	1951	Barnwell	Wm. G. Lyles, Bissett Carlisle & Wolff, A&E
Blackville Gardens	–	nd	Blackville	Bernard B. Saigal, AIA
Green Acres	–	nd	N. Augusta	John McDonald
Summerfield	–	nd	N. Augusta	Knox Corp, Thomson, Ga
Williston Homes		Jan-52	Williston	Wm. G. Lyles Bissett Carlisle & Wolff, A&E
Sherwood Acres	184	Oct-51	Williston	Owners-Craig Roberson Construction Co
Kenland Acres	–	Nov-51	Williston	Kenneth B. Simmons, ASLA, Columbia, William Stork Jr. AIA, Columbia

Source: Binder Containing Plats of Subdivisions in Aiken, SC; Allendale, SC; and Augusta, Ga, SRP Personnel-Employment Division. Courtesy of SRS Archives.

The AEC’s brush with the housing market was brief but notable. Savannah River Plant’s establishment ushered in 1950s residential architectural plans that changed the area’s look and physical context. It should be noted that it was also a factor in bringing 1950s commercial design to the newly established New Ellenton as well as to

Jackson as those who were forced to relocate chose popular ranch and more modern styles for their homes and business, almost appearing to eschew more traditional designs that were associated with their past.

## MEDICAL

The health of employees was the domain of the Medical Department, which was responsible for pre-employment physicals, annual physicals, and emergency treatment. Beginning January 1951, a staff that consisted of two doctors, one nurse and two receptionists began pre-employment screening of job applicants, performing approximately 60 to 70 examinations a day. Not long after, a field first aid station was established at the Bush House and other stations were established as construction began in the various areas.

The Medical Section moved to the site on May 28, 1951, where they occupied an entire wing in TC-2, coined "Central Medical." The facility had the capacity to treat 250 patients and perform 500 pre-employment examinations per day. It was fully equipped to treat all accidents, including those requiring surgery. Additionally, there were thirteen first aid facilities dispersed throughout the site during peak construction.



*Medical Department employees pose for a feature article in the SRP News and Views, 1953.*

Du Pont experienced difficulties in hiring physicians the first two years of the project. The first Medical Superintendent was Dr. Cecil Bradford who transferred from Du Pont's Chattanooga Plant to Savannah River in 1952. Dr. Bradford and Mary Hannah, the plant's first nurse, worked out of 704-D initially. With the completion of the main Medical Building (719-A), A Area became the central focus of the Medical Department with smaller medical stations established in each of the building areas.

As Operations got underway, physicians were assigned to each area where annual examinations and disability wage follow-ups were given. A nurse would rotate from area to area on a schedule, providing twenty-four hour coverage to all the outlying stations in the operating areas. In June of 1955, the department employed 10 doctors, 38 nurses, 10 medical technicians, and 9 clerical employees. Training programs were undertaken to provide the medical staff with information about Du Pont Company medical health plans and policies and to train these individuals in the treatment of patients involved in hazards particular to Savannah River. The staff was reduced by 1960 by four nurses and one physician.<sup>35</sup>



*Dr. George A. Poda examines a patient in Building 719-A.*

upon between Fort Gordon and the Plant during his tenure. Under Dr. Poda, health services were expanded to include audiometric testing, pulmonary function studies, and expanded laboratory tests that included blood chemistry and a blood count and hematology. All Savannah River nurses were trained as Emergency Medical Technicians, audiometric technicians, and pulmonary function technicians in order to carry out their expanded mission.

Overall, the department's responsibilities evolved into seven tasks: pre-employment physical examinations; continuing education about wellness; periodical physical examinations; the provision of emergency treatment for on/off jobs or injuries; practicing and educating employees about preventative medicine; providing some

Dr. Bradford retired in 1964; Dr. Donald Eckles was superintendent for the next two years. The plant's third medical superintendent, Dr. George A. Poda, promoted to the position in 1966 and active in that role for over two decades, became synonymous with health and wellness at Savannah River. Dr. Poda also strengthened community ties. He was appointed assistant clinical professor at the Medical College of Georgia where he taught industrial medicine in addition to his position at SRP. Also, a mutual assistance pact, hammered out by AEC's Karl E. Herde, was agreed

immunizations; referrals to private physicians; and providing physical examinations for retirees. The latter included the completion of a questionnaire, height, weight, and blood pressure checks, urinalysis, blood chemistry (13 parameters), complete blood count and hematology, eye examination, audiogram, chest x-ray and pulmonary function, and physician's examination.<sup>36</sup>

Dell Harvey, a nurse at the site from the construction era onward, provides a fuller picture of what it was like to work in medicine at the new plant from a nurse's perspective:

My father died when I was very young and I was raised by a brother, and he was working at St. Simons Island on the bridge to Jekyll Island. So, we went through the first three of four grades in Brunswick, Georgia. Then I came back for a couple of years in Baxley, he was stationed there. Most of the rest of the time was across South Georgia, like in Fitzgerald. I graduated from high school in Fitzgerald and I went to one year of college in Valdosta, Georgia. Then in the following year, I went to Crawford Long; it's part of Emory now, School of Nursing. I finished there and I got married in my senior year and my husband had come home with the Navy and had to go back. So I went out to California. While I was out there I took a post-graduate course in surgery, which at that time was my specialty. I worked out there for a couple of years and then they would draft Surgical Nurses, so I went overseas for almost a year as a Surgical Nurse and I served in Calcutta, India. When I came back I completed my BS degree through the Medical College at Georgia. Then I worked with an Eye Surgeon and a General Surgeon in surgery until I came down here in 1952.

I was one of the first nurses who would move the supplies from the old schoolhouse [Ellenton Schoolhouse] over to medical. But it was real interesting; things like the X-Ray, just part of it's moved there, the rest of it 719-A. The Lab was there also. Dr. Bradford was there at the time. He was Head of Medical.

The Ellenton Schoolhouse. That's where all the physicals, the majority of them. Most of the physicals, you know, were done in town before they actually set up anything. But then the physicals they started doing out there. And it was hot! You came down from Atlanta into these gnats and things. You knew how hot it was, but, we came in and we were processed there and because we were supposed to have a training period. I did not get for two weeks because the one nurse that I was replacing was pregnant. They had a very rigid rule that at the end of three or four months they had to leave, so I had to go directly on shifts. I got a baptism of fire. I thought I'd learned something in the military, but with the thousands of people that were here on construction and this on flow, we would have them on the emergency business. So we were taught about the H<sub>2</sub>S and I'd never heard of a mass spectrometer and things like that. But we learned. It was just tremendous and the people, of course, we were all learning. We were all different people from every walk of life. We were all basically learning. It was a really, really interesting job.



*Nurse Norma Hedrick with New Ambulance, 1974.*

Actually the Department Heads did a lot of this [training] by word of mouth. The H<sub>2</sub>S and the heavy water, you see, were a wonderful lab down at CMX and TNX, which you knew about. Those people came in, and by word of mouth, we were taught, of course, the dangers of the different acids and things like that.

So many of our people came from Tennessee, from Oak Ridge. And they were real interesting because Tennessee people are very adamant about, even their popcorn is better than you can get here in South Carolina. But they knew their job and were very rigid about the people that were coming in there.

Of course, we had some very brilliant people who came down here from all different places. It was such an education to get to know the people and you'd learn so much about different functions that we would never, because it was not all medical. We were very busy most of the time... You had to know the background of why this chemical did this or this machine did this. Then you know of course, you probably have already heard about the terrible death. It was one of the first that we had out there when cleaning out the tank. He was scalded. That was a pretty serious fall, where the guy was permanently damaged. But our safety record, in my book, was excellent. You just, it came first. It really came first; that and security. We know now that we bent over backwards. So many things happened that we should have called the families in. But we were not allowed to do so. And any unusual incident ....

It was a very rare occasion [when contamination occurred], so we made a real deal out of it, you see, when it did happen because, honestly, you can't imagine. I don't know of any other place I've ever worked and I worked in hospitals, doctors' offices, where safety was just, you really got banged on the head and if you've ever been through a safety investigation out there, you don't ever want to break the rules again. See if they would leave a breaker open, when they locked out anything it had a double lock. If you ever broke that rule, you'd better fall on your knees, 'cause the Lord was the only person who could help you. I learned a really great deal from a lot of the people in "F" area. It was the only one that was around the clock. Now, I don't know if anybody mentioned, but along, about that period of time or very shortly thereafter, we started having rotating nurses. ... Our area was the first to go on line. Well, when I finished setting "F" up and we were going, and we were averaging 100-125 patients a day there, they were coming through. We were doing physicals...

We had a full-time doctor, Dr. Shepard. He did work a little bit over in "H" at that time, 'cause "H" was just starting up. I went to 700...probably in the late 50's, early 60's. That, when you were there, you see, you relieved in all the areas. By the end, all the areas had a day nurse, and you relieved if one of them happened to be ill, out on vacation, or if they needed help you went out.<sup>37</sup>

Dell Harvey worked in A Area until 1983 but returned part time in 1989, noting some changes in filing and the use of computers.

## SUMMARY

This chapter shows only a small percentage of the diverse jobs in some of the services offered in A Area and the individuals that filled them. Nurses, clerks, cafeteria workers, accountants, members of the Traffic and Transportation Department, archivists and myriad other personnel met each day to provide support services to that enabled the site to function.

## VIII. 700/A AREA TODAY

By the time Westinghouse Savannah River Company assumed the facility from Du Pont in April 1989, all of the reactors were shut down, and the U. S. had ceased the production of weapons grade fissionable materials altogether. In the same year, the Department of Energy (DOE) formally announced that its primary mission had changed from weapons production to a comprehensive program of environmental compliance and cleanup, along with a reduction of total used square footage. This policy engendered the deactivation and decommissioning (D & D), often to include the demolition, of facilities that were no longer in use. Though the first areas at SRS to be affected were process and production facilities, A Area would not remain immune to this trend.

700/A Area D & D activities began in earnest in 2004. The majority of site administration was relocated to four modern and homogenous, multi-story buildings in B Area. Unlike A Area, where the two primary organizations worked out of the same venue, they are now housed in separate facilities. Supportive functions, once intermingled with administration, have been removed to yet other areas in the Site's interior.

The first structure to fall prey in A Area was the Main Cafeteria (708-A), considered by some to be a strategic move on DOE's part. Remove the food and the people are soon to follow. To date, more than half of the National Register of Historic Places (NRHP) eligible buildings in 700/A Area that were associated with administration or support have been demolished: Gatehouses (701-2A, 701-3A), Safety and Fire Protection Building (709-A), Electric Linemen's Headquarters (710-A), Central Stores (713-A), Spare Machinery Storage (714-A), Automotive Repair Shop (716-A), Medical and Employment Building (719-A). Other structures are slated for demolition and the fate of some is still up in the air.

One edifice whose future is uncertain is the Main Administration Building (703-A). Originally scheduled to be demolished, DOE has yet to reach a decision concerning the final outcome for this individually significant building, once the nerve center of the plant. Currently, 703-A remains standing, however vacant and partially gutted. One of the only portions of the building that remains in use is the basement level of A Wing, which houses the site's Emergency Operations Center; in this regard the building remains a nerve center for the Site.

Regardless, little remains of 700/A Area's original configuration and bustle. The area, which used to see close to two thousand workers come through the gates daily, is a virtual ghost town. Brick buildings constructed in the 1980s are the most prominent buildings in the area now and only concrete pads are left as reminders of Du Pont and Voorhees Walker Foley & Smith's original design, the effect being quite fragmented. An exception to the rule is the Savannah River National Laboratory (SRNL), which will remain in active pursuit of new technologies its original building, along with its network of expansion buildings, for the foreseeable future.

Regarding the future, plans for a Savannah River Site Heritage Center are well underway. The SRS Heritage Foundation has been working towards this goal for several years and was recently awarded a grant of \$20,000 to fund a preliminary design for the museum, which will be located in 700/A Area. This new "mission" certainly has the potential to breathe new life into the area, and will be a fitting tribute to the thousands of men and

women who worked at the Site in the best interest of our nation's defense during a time of great uncertainty in the world.

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# GLOSSARY

## A

### **Alpha Particle**

A positively-charged particle from the nucleus of an atom, emitted during radioactive decay.

### **Atom**

A particle of matter which cannot be broken up by chemical means. Atoms have a nucleus consisting of positively-charged protons and uncharged neutrons of the same mass. The positive charges on the protons are balanced by a number of negatively-charged electrons in motion around the nucleus.

### **Atomic Bomb**

An explosive device whose energy comes from the fission of heavy elements such as uranium or plutonium.

## B

### **Becquerel (Bq)**

A unit of radiation equal to one disintegration per second.

### **Beta Particle**

A particle emitted from an atom during radioactive decay.

### **Biological Shield**

A mass of absorbing material (e.g., thick concrete walls) placed around a reactor or radioactive material to reduce the radiation (especially neutrons and gamma rays respectively) to a level safe for humans.

### **Breed**

To form fissile nuclei, usually as a result of neutron capture, possibly followed by radioactive decay.

## C

### **Chain Reaction**

A reaction that stimulates its own repetition, in particular where the neutrons originating from nuclear fission cause an ongoing series of fission reactions.

### **Containment Building**

A containment building houses the reactor, pressurizer, reactor coolant pumps, steam generator and other equipment or piping containing reactor coolant. The containment building is an airtight structure made of steel-reinforced concrete. The base slab is approximately 9 feet thick; the vertical walls are 3 3/4 feet thick; and the dome is 3 feet thick.

### **Control Rods**

Devices to absorb neutrons so that the chain reaction in a reactor core may be slowed or stopped.

### **Coolant**

This is a fluid, usually water, circulated through the core of a nuclear power reactor to remove and transfer heat energy.

### **Core**

The central part of a nuclear reactor containing the fuel elements and any moderator.

### **Critical Mass**

The smallest mass of fissile material that will support a self-sustaining chain reaction under specified conditions.

**Curie (Ci)**

A unit of radiation measurement, equal to  $3.7 \times 10^{10}$  disintegrations per second.

**D****Decay**

Decrease in activity of a radioactive substance due to the disintegration of an atomic nucleus resulting in the release of alpha or beta particles or gamma radiation.

**Decommissioning**

Removal of a facility (e.g., reactor) from service, also the subsequent actions of safe storage, dismantling and making the site available for unrestricted use.

**Depleted Uranium**

Uranium having less than the natural 0.7% U-235. As a by-product of enrichment in the fuel cycle it generally has 0.25-0.30% U-235, the rest being U-238. Can be blended with highly-enriched uranium (e.g., from weapons) to make reactor fuel.

**Deuterium**

"Heavy Hydrogen", an isotope having one proton and one neutron in the nucleus. It occurs in nature as 1 atom to 6,500 atoms of normal hydrogen, (Hydrogen atoms contain one proton and no neutrons).

**Dose Equivalent**

The absolute measurement of exposure to a dose of ionising radiation depends upon the type of particle and the body tissue with which it interacts - hence the conversion to dose equivalent, which has units of rem. Rads are converted to rems by multiplying by a factor that depends upon the type of ionising radiation and its biological effect. For example, with gamma radiation the factor is 1 and a rad is equal to a rem.

**E****Element**

A chemical substance that cannot be divided into simple substances by chemical means; atomic species with same number of protons.

**Enriched Uranium**

Uranium in which the proportion of U-235 (to U-238) has been increased above the natural 0.7%. Reactor-grade uranium is usually enriched to about 3.5% U-235, weapons-grade uranium is more than 90% U-235.

**Enrichment**

Physical process of increasing the proportion of U-235 to U-238.

**F****Fast Breeder Reactor (FBR)**

A fast neutron reactor (q<sub>v</sub>) configured to produce more fissile material than it consumes, using fertile material such as depleted uranium.

**Fast Neutron Reactor (FNR)**

A reactor with little or no moderator and hence utilising fast neutrons and able to utilise fertile material such as depleted uranium.

**Fertile (of an isotope)**

Capable of becoming fissile, by capturing one or more neutrons, possibly followed by radioactive decay. U-238 is an example.

**Fissile (of an isotope)**

Capable of capturing a neutron and undergoing nuclear fission, e.g., U-235, Pu-239.

**Fission**

The splitting of a heavy nucleus into two, accompanied by the release of a relatively large amount of heat and generally one or more neutrons. It may be spontaneous but usually is due to a nucleus absorbing a neutron.

**Fission Products**

Daughter nuclei resulting either from the fission of heavy elements such as uranium, or the radioactive decay of those primary daughters. Usually highly radioactive.

**Fuel Assemblies**

These are a group of fuel rods.

**Fuel Fabrication**

Making reactor fuel elements.

## G

**Gamma Rays**

High energy electro-magnetic radiation.

**Graphite**

A form of carbon used in a very pure form as a reactor moderator.

## H

**Half-Life**

The period required for half of the atoms of a particular radioactive isotope to decay and become an isotope of another element.

**Heavy Water**

Water containing an elevated concentration of molecules with deuterium ("heavy hydrogen") atoms.

**Heavy Water Reactor (HWR)**

A reactor which uses heavy water as its moderator.

**High-Level Wastes**

Extremely radioactive fission products and transuranic elements (usually other than plutonium) separated as a result of reprocessing spent nuclear fuel.

**Highly (or High)-Enriched Uranium (HEU)**

Uranium enriched to at least 20% U-235. Uranium in weapons is about 90% U-235.

**I****Isotope**

An atomic form of an element having a particular number of neutrons. Different isotopes of an element have the same number of protons but different numbers of neutrons and hence different atomic masses, e.g., U-235, U-238.

**J****Joule**

A unit of energy.

**K****KeV**

One thousand electron-volts. An electronvolt (symbol: eV) is the amount of energy gained by a single unbound electron when it falls through an electrostatic potential difference of one volt. This is a very small amount of energy.

**Kilowatt**

A Kilowatt is a unit of electric energy equal to 1,000 watts.

**Kilowatt-Hour**

This is a unit of energy consumption that equals 1,000 watts used for one hour. For example, ten 100-watt light bulbs burned for one hour use one kilowatt-hour of electricity.

**L****Lattice**

Structural configuration in a reactor organizing positioning of fuel rods, control rods, and safety rods.

**Light Water**

Ordinary water (H<sub>2</sub>O) as distinct from heavy water.

**Light Water Reactor (LWR)**

A common nuclear reactor cooled and usually moderated by ordinary water.

**Low-Enriched Uranium (LEU)**

Uranium enriched to less than 20% U-235. Uranium in power reactors is about 3.5% U-235.

**M****Megawatt (MW)**

A unit of power, = 10<sup>6</sup> Watts. MWe refers to electric output from a generator, MWt to thermal output from a reactor or heat source (e.g., the gross heat output of a reactor itself, typically three times the MWe figure).

**Metal Fuels**

Natural uranium metal as used in a gas-cooled reactor.

**Micro**

One millionth of a unit (e.g., microsievert is one millionth of a Sv).

**Millirem**

This is a measurement of the biological effects of different types of radiation equaling 1/1000th of a REM.

**Mixed Oxide Fuel (MOX)**

Reactor fuel which consists of both uranium and plutonium oxides, usually with about 5% Pu.

**Moderator**

A material such as light or heavy water or graphite used in a reactor to slow down fast neutrons so as to expedite further fission.

## N

**Natural Uranium**

Uranium with an isotopic composition as found in nature, containing 99.3% U-238, 0.7% U-235 and a trace of U-234.

**Neutron**

An uncharged elementary particle found in the nucleus of every atom except hydrogen. Solitary mobile neutrons travelling at various speeds originate from fission reactions. Slow neutrons can in turn readily cause fission in atoms of some isotopes, e.g., U-235, and fast neutrons can readily cause fission in atoms of others, e.g., Pu-239. Sometimes atomic nuclei simply capture neutrons.

**Nuclear Reactor**

A device in which a nuclear fission chain reaction occurs under controlled conditions so that the heat yield can be harnessed or the neutron beams utilised. All commercial reactors are thermal reactors, using a moderator to slow down the neutrons.

## O

**Oxide Fuels**

Enriched or natural uranium in the form of the oxide UO<sub>2</sub>, used in many types of reactor.

## P

**Plutonium**

A transuranic element, formed in a nuclear reactor by neutron capture. It has several isotopes, some of which are fissile and some of which undergo spontaneous fission, releasing neutrons. Weapons-grade plutonium is produced with >90% Pu-239, reactor-grade plutonium contains about 30% non-fissile isotopes.

**Pressurised Water Reactor (PWR)**

The most common type of light water reactor (LWR).

## R

**Radiation**

The emission and propagation of energy by means of electromagnetic waves or sub-atomic particles.

**Radioactivity**

The spontaneous decay of an unstable atomic nucleus, giving rise to the emission of radiation.

**Radionuclide**

A radioactive isotope of an element.

**Radiotoxicity**

The adverse health effect of a radionuclide due to its radioactivity.

**Rads**

A unit to measure the absorption of radiation by the body. A rad is equivalent to 100 ergs of energy from ionising radiation absorbed per gram of soft tissue.

**Reactor Vessel**

It is the steel pressure vessel that holds the fuel elements in a reactor.

**rem (Roentgen Equivalent Man)**

REM is the common unit for measuring human radiation doses, usually in millirems (1,000 millirems = 1 rem).

**Reprocessing**

Chemical treatment of spent reactor fuel to separate uranium and plutonium from the small quantity of fission products (and from each other), leaving a much reduced quantity of high-level waste.

**S****Shielding**

Material, such as lead or concrete, that is used around a nuclear reactor to prevent the escape of radiation and to protect workers and equipment.

**Spent Fuel**

This is used nuclear fuel awaiting disposal.

**Stable**

Incapable of spontaneous radioactive decay.

**T****Thermal Reactor**

A reactor in which the fission chain reaction is sustained primarily by slow neutrons (as distinct from Fast Neutron Reactor).

**Transuranic Element**

A very heavy element formed artificially by neutron capture and subsequent beta decay(s). Has a higher atomic number than uranium (92). All are radioactive. Neptunium, plutonium and americium are the best-known.

**U****Uranium**

A mildly radioactive element with two isotopes which are fissile (U-235 and U-233) and two which are fertile (U-238 and U-234). Uranium is the basic raw material of nuclear energy.

**Uranium Oxide Concentrate (U308)**

The mixture of uranium oxides produced after milling uranium ore from a mine. Sometimes loosely called yellowcake. It is khaki in colour and is usually represented by the empirical formula U<sub>3</sub>O<sub>8</sub>. Uranium is exported from Australia in this form.

## V

### **Vitrification**

The incorporation of high-level wastes into borosilicate glass, to make up about 14% of the product by mass.

## W

### **Waste**

High-level waste (HLW) is highly radioactive material arising from nuclear fission. It is recovered from reprocessing spent fuel, though some countries regard spent fuel itself as HLW and plan to dispose of it in that form. It requires very careful handling, storage and disposal.

### **Waste**

Low-level waste is mildly radioactive material usually disposed of by incineration and burial.

## Y

### **Yellowcake**

Ammonium diuranate, the penultimate uranium compound in U308 production, but the form in which mine product was sold until about 1970.

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# APPENDIX A

## MANAGER BIOGRAPHIES



## CURTIS A. NELSON

Curtis Nelson, a Nebraska native and engineer, was the first manager of the Atomic Energy Commission's newly established Savannah River Operations Office. He was responsible for overseeing the Savannah River Project's design and construction, and for establishing an identity for the new plant, both within the AEC complex and within the local communities.

Posted months before the project was announced, Mr. Nelson brought a wealth of construction experience to his position at SRP. He had gained that experience as a member of the Corps of Engineers, the Civilian Conservation Corps, and the Federal Works Agency, supervising the large-scale construction of buildings, dams, and railroads and engineering aspects of lake restoration and river diversions during the 1930s. Mr. Nelson had more than ten years active duty with the U.S. Army, and held a reserve commission as colonel in the U.S. Army Corps of Engineers. As Captain Nelson, he was assigned as constructing quartermaster to Joliet, Illinois, where he became responsible for the construction of the Ordnance Plant in 1941.

His experience with atomic energy began in 1943 when he was assigned to the Manhattan Engineering District, Army Corps of Engineers at Oak Ridge. In 1947, he became the U.S. liaison to Canada's heavy-water production facility at Chalk River, Ontario. This assignment helped prepare him for his future work at SRP. Mr. Nelson was assigned to SRP in June of 1950, where he oversaw design and construction of what was then the largest construction project ever undertaken by the Atomic Energy Commission. He served as SRP's manager through January of 1955, after which, he became the first director of the Atomic Energy Commission's Inspection Division in Washington, which was newly created under the Atomic Energy Act of 1954. He retired from federal service in 1969.

Sources: A.E.C. Savannah River Operations Office, Biography donated by Nelson Family; *SRP News and Views*, Volume 3, No. 25, January 28, 1955; *SRP News and Views*, Volume 2, No. 26, February 4, 1955; Savannah River Operations Office, Press Release No. 668, "C.A. Nelson, First AEC Manager at Savannah River Plant, Will Retire from Federal Service," October 28, 1969. Courtesy of SRS Archives, negative CurtisNelson.jpg.



## ROBERT C. BLAIR

Robert Blair succeeded Curtis Nelson in February of 1955, after having worked as deputy manager under Curtis Nelson since the beginning of the Savannah River Project. His tenure, which lasted through 1965, witnessed the startup of operations, the training of a mostly agricultural workforce into industrial workers, and the absorption of the plant and its workers into the fabric of the Central Savannah River Area. During the Nelson and Blair years, the plant was a catalyst for the growth of academic programs in science and engineering in the region's schools and universities, and for the development of professional organizations within engineering disciplines.

Robert Blair was a native of Urbana, Illinois, and studied civil engineering at the University of Illinois, after which he served with the U.S. Army Corps of Engineers in Tennessee, and later with the St. Louis District. At the outbreak of World War II, he was head engineer of the Syracuse New York District. He entered military service in 1942, advancing to lieutenant colonel in 1943, when he was serving in the Manhattan Engineer District. Blair was one of the first engineers chosen by Col. James C. Marshall, MED District Engineer, to join the newly formed Corps district in 1942. An organization chart for April 1943 shows him third in command as executive engineer. He continued in this post through the summer of 1943, participating in the site-selection process for Oak Ridge. When the leadership of the Manhattan District changed in July of 1943, Blair and others of the "old guard," under Col. Marshall, left the MED and went overseas. At the close of the war, Blair was in the Southwest Pacific Theater as commander of the 5222 Engineer Brigade (Construction), Headquarters and Headquarters Company in the Philippines and Japan. For his war service, he was awarded the Bronze Star and the Legion of Merit. During the postwar years, Blair initially returned to the Corps of Engineers, but left there to pursue work in the private sector in a position with an American engineering firm based in Argentina. On his return to the U.S. in 1949, he accepted a position with the Military Application Division of the AEC in Washington. From that job, he was transferred with Nelson to the new operations office in Augusta.

During the decade that he managed the plant, Mr. Blair received many accolades within his profession. He received an honorary doctorate in engineering from Clemson University in 1957 for "outstanding public service in applying the basic principles of engineering to the national interests in an atomic age." He was named South Carolina Engineer of the Year in 1961, and he served as president of two professional organizations: the South Carolina Section

of the American Society of Civil Engineers and the South Carolina Society of Professional Engineers. He was also recognized for his record of community service with the Rotary Club, Aiken Chamber of Commerce, American Legion, Aiken Salvation Army, Aiken County United Fund, and the Georgia-Carolina Boy Scout Council. He was honored with Aiken's "Man of the Year" award in 1964. Mr. Blair retired from federal service in 1965 in Aiken, setting a precedent that future Savannah River Operations Office managers would follow.

Sources: *SRP News and Views*, Volume 3, No. 25, January 28, 1955, *SRP News and Views*, Volume 2, No. 26, February 4, 1955, *SRP News and Views*, Volume 13, No. 13, December 10, 1965; *Aiken Standard and Review*, December, 1, 1965. Courtesy of SRS Archives, negative RobertCBlair.jpg.



### **NATHANIEL STETSON**

Nathaniel Stetson, a New Bedford, Massachusetts, native, headed the Savannah River Operations Office of the Department of Energy and its predecessor agencies for fourteen years, keeping pace with the Cold War defense production mission set by the federal government. Under Mr. Stetson's guidance, SRP developed programs to further peaceful applications for atomic energy. Specifically, he administered a program to verify the quantities of nuclear materials consumed and produced through operation of some of the nation's privately owned power reactors. He also administered the AEC's interests in the development and operation of the first privately owned plant for reprocessing spent reactor fuels from the nuclear power industry. In the early 1960s, he established cooperative programs involving the heavy-water power production system with Canada, Great Britain, France, Norway, and Sweden. He served as the Vice Chairman of the Fuel Cycle Committee of the Nuclear Energy Agency, headquartered in Paris. Regional partnership in education in the fields of science and technology remained a focus under Mr. Stetson. His tenure also witnessed changes in American society that stemmed from the Vietnam War, the civil rights movement, and environmentalism. He set a path for the plant's future within this changing national environment.

In 1941, Mr. Stetson was employed in the research and development department of Celanese Corporation of America in Maryland. While there, he studied problems associated with pigmented yarn and developed an olive drab pigment for use in yarns and fabric that was used by the U.S. Army in their coat linings. He began a one-year stint with the U.S. Chemical Warfare Service in Denver in charge of plant maintenance, after which he joined the Tennessee Eastman Corporation at Oak Ridge. Mr. Stetson was in the forefront of the nation's atomic

energy program. At Oak Ridge, he helped direct the startup and operation of the electromagnetic process for the separation of uranium-235 in 1944. He was associated with Carbide and Carbon Chemical Company at Oak Ridge between 1947 and 1952, directing research in the Electromagnetic Research Division. He was instrumental in the design and development associated with particle accelerators and physics research associated with the behavior of electromagnetic fields. In addition, he helped organize and administer a radioisotopes production program on the 86-inch cyclotron.

Mr. Stetson joined the Savannah River staff of the Atomic Energy Commission in 1952 as a production engineer. From that position, he progressed into management. He was named Assistant Director for Operations in 1955 and later Deputy Director of the Technical and Production Division. He also was part of a detail assigned to establish the Civilian Reactor Division of the AEC and was later named Director of that group. He held this position until he was transferred to AEC headquarters in 1962. Between 1962 and 1966, Nathaniel Stetson served as Deputy Director of the Division of Production until he was named Manager, Savannah River Operations office on January 1, 1966, succeeding Robert Blair as manager.

Mr. Stetson was educated at the New Bedford Textile Institute; he earned his bachelor's degree at North Carolina State University in chemical engineering. He continued with post-graduate studies at Illinois Institute of Technology and was awarded an honorary Doctor of Science degree from Southeastern Massachusetts University in 1968. When he retired in 1980, he maintained membership in such professional organizations as the American Chemical Society, the American Nuclear Society, and the American Association for the Advancement of Science. He is listed in *Who's Who in America* and *Who's Who In Government*.

Community service was a significant part of Mr. Stetson's career. He was instrumental in the formation of the Citizens for Nuclear Technology Awareness and served on its board. Notably, he served on the Aiken County Commission on Higher Education from 1968 and acted as vice chairman of the commission in 1980. The Aiken Rotary Club, Aiken Businessman's Club, Aiken County Red Cross Chapter, the Salvation Army, the United Way of Aiken County, the Georgia-Carolina Council of Boy Scouts, and the Augusta Radiation Therapy Center, all benefited from his service in a variety of capacities.

Sources: *Savannah River Plant News*, Volume XXVII, No. 24, February 7, 1980; *Savannah River Plant News*, Volume XXVII, No. 26, March 6, 1980; *Aiken*

*Standard and Review*, December, 1, 1965; *The Augusta Chronicle*, March 13, 2001; and A.E.C. Savannah River Operations Office Biography, not dated. Courtesy of SRS Archives, negative Nathaniel Stetson.jpg.



## **ROBERT L. MORGAN**

Robert Morgan, a West Point graduate and Massachusetts Institute of Technology alumnus with advanced degrees in civil and nuclear engineering, served as deputy manager at SRP under Mr. Stetson between 1973 and 1976. He also served as assistant manager for Health, Safety and Environment in 1978 before becoming SROO manager in 1980. Mr. Morgan managed SRP during the tumultuous 1980s. L Reactor restart, the upgrading of the main process facilities, and expansion of the administrative complex in the 700 Area all occurred under his tenure.

Mr. Morgan joined the Atomic Energy Commission in 1965, working within the commission's reactor development programs. He was senior site representative at the Agency's Canoga Park Office in California; he had also served as director of Savannah River's Heavy Water Cooled Reactor Division. Between 1977 and 1978, he was detailed to Washington, serving as acting director of Field Operations Management for the Assistant Secretary for Energy Technology, and the following year, he was acting director of the Office of Nuclear Waste Management.

Mr. Morgan's eight-year tenure was spent between SRS and DOE headquarters, as he maintained duties in both the field and at headquarters. In 1981, he served as acting Assistant Secretary for defense programs in Washington, and completed a three-month stint as acting Deputy Undersecretary (July 1981 through September 1981). Mr. Morgan's responsibilities in Washington continued between 1983 and 1984 when he directed the development of the Nuclear Waste Policy Act and then served as DOE's Deputy Assistant Secretary for Defense Programs. Mr. Morgan provided a complex-wide leadership role in increasing production that is considered to have accelerated the end of the Cold War. He returned to his SROO post in 1984, residing in Aiken with his family. Mr. Morgan retired four years later, after 39 years of federal service.

Sources: *Savannah River Plant News*, Volume XXVII, No. 26, March 6, 1980; *Savannah River News*, Volume XXXV, No. 4, March 3, 1988. Courtesy of SRS Archives, negative RobertMorgan.jpg.



### **PAUL W. (BILL) KASPAR**

Mr. Kaspar, formerly acting Deputy Assistant Secretary for Operations in DOE's defense programs at headquarters, managed the plant for a short but significant time for SRS. His tenure coincided with many pivotal events: the end of the Cold War, the transition of the plant into a site; and contract change when Westinghouse assumed responsibility for the plant.

Having worked in DOE's San Francisco Operations Office as an assistant manager for energy research in technology, Mr. Kaspar later served as assistant manager for safety and environment at Oak Ridge during the early 1980s. He subsequently served as deputy manager at that location from 1984 to 1987. He was acting Deputy Assistant Secretary for operations between 1987 and 1988 in Washington. Mr. Kaspar is retired.

Sources: *Savannah River Plant News*, Volume XXVII, No. 26, March 6, 1980; *Savannah River News*, Volume XXXV, No. 4, March 3, 1988. Courtesy of SRS Archives, negative PWBillKasper.jpg.



### **PETER M. HEKMAN**

Vice Admiral Hekman, a graduate of the U.S. Naval Academy with a degree in naval science, and a MS in management degree from the Naval Postgraduate School, was appointed manager of the Savannah River Field Office in 1991. Nick Aquilina, manager of the Nevada Field Office, served temporarily in this capacity until Vice Admiral Hekman's appointment. Although the groundbreaking for the Defense Waste Production Facility occurred in the 1980s, the facility began operations in 1992 under Vice Admiral Hekman's management.

Vice Admiral Hekman, a California native, enjoyed a 39-year Navy career, including command of the USS Benjamin Stoddert and the USS Mississippi. Following his promotion to Rear Admiral in 1982, Admiral Hekman's flag rank assignments include: Deputy Director of Operations, National Military Command Center, Office of the Joint Chiefs of Staff; Commander, Cruiser-Destroyer Group One; Commander, Task Force SEVENTY-FIVE; Deputy Director, Office of Research, Development, Test, and Evaluation, in the Office of the Chief of Naval Operations; and Deputy Director of Surface Combatants, Naval Sea Systems Command. In 1988 he assumed command of the Naval Sea Systems Command. He received the Defense Superior Service Medal, Legion of Merit (with three gold stars), the Bronze Star medal, the Navy Commendation Medal,

the Navy Achievement Medal, the Armed Forces Expeditionary Medal, and numerous service and campaign ribbons.

Source: U.S. Department of Energy, Savannah River Operations Office, Biography, August, 1991. Courtesy of SRS Archives, negative PeterHeckman.jpg.



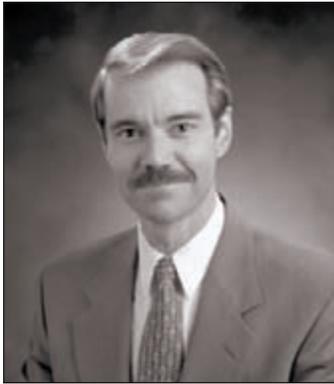
### **MARIO P. FIORI**

Mario P. Fiori, a resident of Martinez, GA, managed SRS during a period of reassessment of past missions and the environmental legacy they created, and the exploration of new missions for the future. Under his management, the site was the recipient of scores of awards for safety, environmental innovation, and technology transfer on the local, state, and federal level. During this process of redefinition came the need to honor the past; the current Cold War historical programs on site also emanate from Mr. Fiori's vision.

Dr. Fiori earned his undergraduate degree at the U.S. Naval Academy. His graduate work was completed at the Massachusetts Institute of Technology, where he earned an MS in mechanical engineering, a nuclear engineering degree, and a Ph.D. in nuclear engineering. During 26 years of service in the United States Navy, Dr. Fiori served as Commander, Submarine Squadron Four; Assistant to the President's Science Advisor; Commander, USS Spadefish (a nuclear attack submarine); and senior executive of the Naval Underwater Systems Center, a major Naval Research and Development facility.

As the Department of Energy's representative to the Defense Nuclear Facilities Safety Board (DNFSB) from October 1991 to January 1993, Dr. Fiori was responsible for facilitating the DNFSB's efforts in fulfilling its congressionally mandated safety oversight role. The DNFSB was established by statute to provide independent external oversight of the Department of Energy's defense-related operations and facilities.

Source: U.S. Department of Energy, Savannah River Operations Office, Biography, May, 1997. Courtesy of SRS Archives, negative Mario Fiori.jpg.



### **GREG RUDY (1998-2002)**

Greg Rudy began his duties as Savannah River Operations Office Manager in October 1997 as Acting Manager, having ten months' previous experience at the Site as Deputy Manager. Mr. Rudy was responsible for bringing the Site into the 21st century, safely handling the environmental legacy of the Site's Cold War defense mission, and continuing the Site's tradition of innovation, research, and development in the nation's interest. The Site received numerous awards under his management for safety, scientific achievement, pollution prevention, and had received the Weapons Complex Award of Excellence. His experience within the Department's national defense and nuclear energy-related programs provided him with a familiarity with naval reactors, civilian nuclear energy, commercial nuclear fuel services, the nuclear weapons program, and the disposition of surplus weapons plutonium and highly enriched plutonium.

Born in Hammond, Indiana, Mr. Rudy earned his graduate degree from Purdue University's Krannert School of Management. He first participated in the Department of Energy's nuclear energy program in 1977 when he served on the headquarters staff of Admiral Hyman Rickover, the Director of the Naval Nuclear Propulsion Program. Later Mr. Rudy would serve on numerous departmental task forces and special assignments, representing DOE in interagency, domestic, and international forums. Prior to 1987, he served in Washington as the Special Assistant to the Department's Assistant Secretary for Nuclear Energy. Between 1987 and 1990, he acted as the Deputy Director for Marketing and Sales in the Department of Energy's Uranium Enrichment Services.

Mr. Rudy served as the Executive Director for Policy, Planning and National Environmental Policy Act Coordination in the Department's Office of Defense Programs between November 1990 and January 1994. From that assignment, he led DOE's Office of Fissile Materials Disposition as Acting Director and Deputy Director prior to his appointment as Acting Manager to SRS in October 1997.

Source: U.S. Department of Energy, Savannah River Operations Office, Biography, October 1999. Courtesy of SRS Archives, negative Greg Rudy.jpg.



### **JEFFREY M. ALLISON (2003-PRESENT)**

Jeffrey M. Allison was appointed Manager of the Savannah River Operations Office (SR) in March 2003. Mr. Allison is a career member of the Senior Executive Service with more than 22 years of experience in engineering, safety, health, process development, and management of Department of Energy (DOE) nuclear facilities, including chemical processing facilities, waste management facilities, and laboratories.

Prior to his current assignment, Mr. Allison was SR's Acting Manager from June 2002. As SR's Assistant Manager for Health, Safety and Technical Support from December 1999 to June 2002, he led the Savannah River Site in implementing a model Integrated Safety Management System. Additionally, he was directing and overseeing Site efforts in a range of areas such as engineering, construction management, project management, regulatory and safety compliance, nuclear safety documentation, emergency preparedness and others.

Mr. Allison has held several other senior level positions at the Savannah River Site, including Acting Assistant Manager for High-Level Waste from December 2000 through February 2001. In this position, he directed and oversaw operations of the high-level waste system, including the Defense Waste Processing Facility, H and F Tank Farms, the Effluent Treatment Facility, Saltstone, and other components of the waste system. From June 1996 through November 1999, Mr. Allison was the Deputy Assistant Manager for Health, Safety and Technical Support, and prior to that Mr. Allison was the Deputy Assistant Manager for Engineering and Projects from April 1995 to May 1996. As Deputy Assistant Manager for Engineering and Projects, Mr. Allison led the Site in achieving significant cost-saving accomplishments, including the privatization of the D-Area Powerhouse, implementation of commercial business practices in all non-nuclear infrastructure facilities; and increased utilization of fixed-price contracting for design, engineering and construction activities.

Mr. Allison began his federal service in the Department's High-Level Waste Division, Office of Environmental Management, DOE Headquarters, in December 1991, as a team leader. In this role, he was responsible for overseeing all programmatic aspects of the Savannah River Site Tank Farms and developing the Waste Acceptance Product Specifications for use in establishing criteria for acceptance of waste at the geological repository.

Prior to joining the Department, Mr. Allison worked eight years for Westinghouse Hanford Company in a range of ever increasing engineering assignments,

including process simulation, process design/development, systems engineering, design engineering and hazardous waste disposal.

Mr. Allison holds a Bachelor of Science, Engineering degree in Chemical Engineering from Princeton University.

Source: U.S. Department of Energy, Savannah River Operations Office, Biography, April 2006.

## PRIME CONTRACTOR



### **DON A. MILLER**

Born in Plantsville, Connecticut, in 1906, Don A. Miller graduated from Tufts College with a degree in chemistry. He joined Du Pont as a chemist at Eastern Laboratory in Gibbstown, New Jersey, on graduation. In 1936, Mr. Miller became part of the production staff at the Du Pont Explosives Department. After several assignments, he was sent to the GOCO plant in Charlestown, Indiana, where he became general superintendent in 1944.

Don Miller was then assigned to the government's atomic energy project as a technical specialist in 1945. Shortly thereafter, he became plant manager of the Hanford Engineering Works at Richland, Washington. He managed the heavy-water production facility known as the Dana Plant in Newport, Indiana, prior to coming to Savannah River Plant as manager in March 1952. He was handpicked for the job. Mr. Miller managed SRP until October 1957, placing the enormous plant into operation, training a new workforce, and helping to root the plant into its new community. In accordance with Du Pont company philosophy in which managers serve about five years and then are reassigned, he was detailed to Du Pont's Niagara Falls facility in 1957. In the early 1990s, when asked about his contribution to the site's history, Don Miller noted that the training of the site's new personnel was his strongest contribution.

Source: *SRP News and Views*, Volume I, No. 2, March 14, 1952. Courtesy of SRS Archives.



### **JULIAN D. ELLETT**

A Virginia native, Julian D. Ellett received his education in chemical engineering at Virginia Tech, and then worked for Du Pont's Spruance Plant in Richmond

as shift supervisor beginning in 1936. During World War II, Ellett served at Chickasaw Ordnance Works in Memphis, Tennessee, Kankakee Ordnance Works in Joliet, Illinois, and the Oklahoma Ordnance Works. He was later assigned to Du Pont's program for the Manhattan District in 1943 and then the Hanford facility in Washington where he became assistant superintendent of the Separations Department. Between 1946–50, Ellett moved back into commercial operations as a production supervisor at the Arlington, New Jersey, Plastics Works and as a construction consultant, area supervisor and superintendent at the Washington Polychemicals Works in Parkersburg, West Virginia.

He reentered the Atomic Energy Division in 1950 when Du Pont undertook the design, construction and operation of the Savannah River Plant. In 1952, he moved to SRP with the position of general superintendent of Production. Five years later, he was promoted to manager of SRP, a position he held until December 1966. Mr. Ellett's nine-year tenure as manager witnessed the development of plant processes and the push toward diversification, the construction of the Heavy Water Components Test Reactor, and record reactor power levels. After completing his tenure at SRP, Mr. Ellett took a post as director of manufacture in the Explosives Atomic Energy Division in Wilmington, Delaware.

While living in Aiken, Mr. Ellett was active in the First Baptist Church and the Augusta Rotary Club. He was also chairman of the Yamassee Boy Scout District, president of the Aiken County United Fund Community Services, and chairman of the Aiken County Hospital Board of Trustees.

Source: *Savannah River Plant News*, Volume XIV, No. 24, December 23, 1966. Courtesy of SRS Archives, negative 28086-4.



### **J. ARMAND MONIER, JR.**

J. Armand Monier, Jr. received all of his degrees, including a Ph.D. in organic chemistry from the Massachusetts Institute of Technology. In 1933, he became a chemist with Du Pont at the Experimental Station in Wilmington, Delaware. He was then transferred to the Belle, West Virginia, Works in 1936 and later the Morgantown, West Virginia, Ordnance Works in 1943. After World War II, he returned to Belle and subsequently moved to a position at Sabine River, Texas, in 1947 as production superintendent.

In 1951 he entered into atomic energy work as technical superintendent at the Dana heavy-water plant in Indiana. He became assistant plant manager there in 1952 and transferred to Savannah River Plant in 1955 as general

superintendent of Production. Dr. Monier was promoted to plant manager at SRP in January 1967, and remained at that post until December 1972.

Dr. Monier and his family were Augusta residents. Like his predecessors, he was also active in the community, serving as a member of the board of directors and chairman of the Community Planning Committee of the Augusta-North Augusta United Fund, and serving several terms as president and vice president of that organization. Dr. Monier was active in the Junior Achievement of Augusta.

Source: *Savannah River Plant News*, Volume XIV, No. 24, December 23, 1966. Courtesy of SRS Archives, negative 28086-4.



### **KENNETH W. FRENCH**

Kenneth W. French, a native of Sabetha, Kentucky, began working with Du Pont upon his graduation from the University of Nebraska in 1936. During World War II, he served in supervisory positions at Oak Ridge and Hanford with Du Pont. Mr. French came to the Savannah River Plant in the 1950s, was involved in its initial staffing, and participated in R Reactor achieving criticality. He was superintendent of the reactor and heavy-water departments, and then served as general superintendent of production beginning in June 1966. Mr. French became assistant plant manager at the Savannah River Plant in January 1967, and plant manager in January 1973, after twenty years at SRP. He retired in December 1976, after forty years of service with Du Pont.

French was a deacon, president of the Men of the Church, and superintendent of the senior department of the Sunday School at First Presbyterian Church in Aiken. He also served as chairman of the Yamassee Boy Scout District, president of the Aiken Rotary Club, vice chairman of the Aiken County Technical Education Commission, director of the Palmetto Federal Savings and Loan Association, and a member of the Business Men's Club and the Salvation Army Advisory Board.

Sources: *Savannah River Plant News*, Volume XXIV, No. 22, December 16, 1976; *The Augusta Chronicle*, January 10, 2000. Courtesy of SRS Archives, negative 28086-4.



### **WILLIAM J. MOTTEL**

William J. Mottel grew up in Michigan and received a chemical engineering degree from Michigan State University. He served in the Army's nuclear

weapons program, and attained the rank of major in the Army Reserve. He began his employment with Du Pont at the Savannah River Laboratory in 1953 and transferred to the Savannah River Plant in 1964 as an area supervisor in Separations Technology. He became assistant plant manager in September 1975 and the fifth plant manager upon Kenneth W. French's retirement in December 1976.

While Mr. Mottel served as manager, SRP observed its twenty-fifth year of operation without a nuclear-related injury. The plant held a record as one of the four safest industrial plants in the world during his tenure. Mottel left SRP in November 1979, to become production manager for polyester and acrylic intermediates in the Petrochemicals Department in Wilmington, Delaware. He would later co-author a book, *Industrial Safety is Good Business: The Du Pont Story*. While working at SRP, Mottel served as chairman of the Aiken County Public Service Authority and was also a member of the North Augusta City Council.

Sources: *Savannah River Plant News*, Volume XXIV, No. 22, December 16, 1976; *Savannah River Plant News*, Volume XXVII, No.18, November 6, 1979. Courtesy of SRS Archives, negative 27462-1.



### **JOHN T. GRANAGHAN**

A native of Jacksonville, Florida, John T. Granaghan graduated from Auburn University in 1950, with a BS in chemical engineering. After graduation, Du Pont hired him at the Sabine River Works in Orange, Texas. He left in 1952, to serve with the U.S. Army Corps of Engineers in Korea. He returned to the Sabine River Works in 1954, but transferred a year later to Wilmington, Delaware. He then became assistant power superintendent and division maintenance superintendent at the Washington Works in Parkersburg, West Virginia.

Mr. Granaghan found himself again, at the Sabine River Works in 1965, where he held a variety of positions, including division superintendent for methanol production, maintenance superintendent for the nylon area, and assistant employee relations superintendent. He moved to Du Pont's Pontchartrain Plant at LaPlace, Louisiana, in 1970, and became general plant superintendent. Later, Mr. Granaghan became assistant plant manager at the Victoria, Texas, plant, and then manager of the Cape Fear Petrochemicals Plant in Wilmington, North Carolina, in 1977. He was assigned to the Savannah River Plant as plant manager in 1979.

In his tenure at SRP, the facility witnessed over 50 million man-hours without a lost-time accident, a record that approached world-record levels for safety performance. In addition, employees' average radiation exposure levels dropped to record lows. The number of employees increased from 5,769 to more than 8,000 and the facilities themselves also expanded. Billions of dollars of construction began, including the Defense Waste Processing Facility. He was manager when Du Pont decided to not renew its contract with DOE and was also the plant's leader through the difficult 1980s when the plant was in the throes of change. Mr. Granaghan maintained his position as plant manager until his retirement from Du Pont in 1988.

Mr. Granaghan and his family are Aiken residents. He belongs to a number of local civic groups. So many, in fact, he refers to himself as Mr. Momo, or Man of Many Organizations. Some of these groups include the Aiken Rotary Club, the Greater Aiken Chamber of Commerce, the Heart Association, the Aiken Chapter of the Red Cross, the Palmetto Forum (an organization for senior executives at major corporations), the Aiken Business Men's Club, and the Board of Visitors at Clemson University. In 1999, he accepted the chair of the 50th Anniversary committee, a group assembled to guide events in celebration of the site's fifty-year history.

Sources: *Savannah River Plant News*, Volume XXVII, No.18, November 6, 1979; *Savannah River News*, Volume XXXV, No. 21, October 27, 1988. Courtesy of SRS Archives.



## **JOHN T. LOWE**

John T. Lowe is a graduate of Georgia Tech and received his Ph.D. in physical chemistry from the University of Illinois. He began at Du Pont in 1965 as a researcher. From 1971 to 1974, Dr. Lowe worked as research supervisor at the Experimental Station in Wilmington, Delaware, and at the Sabine River Laboratory in Orange, Texas. Beginning in 1974, Dr. Lowe held a number of positions including technical superintendent at the Victoria, Texas, plant, director of the Sabine River Laboratory, and Adiponitrile Plant Superintendent in Victoria. He returned to the Savannah River Plant in 1983 as program manager. He became the director of the Savannah River Laboratory in May 1984 and maintained that position until October 1988, when Dr. Lowe took over John Granaghan's position as Savannah River Plant manager in October.

Lowe was a member of the Aiken Rotary Club, the Aiken County Commission for Technical Education at the Aiken Technical College, and the Aiken Chamber

of Commerce. He was a past chairman of the visiting committee for the Chemical Engineering Department at the University of Texas and was also active in several local colleges and universities.

Source: *Savannah River News*, Volume XXXV, No. 21, October 27, 1988.



### **JAMES S. MOORE**

James S. Moore attended school at the Carnegie Institute of Technology where he received an MS in nuclear engineering in 1963. From 1975 to 1979, Moore was president of Westinghouse Nuclear Europe based in Belgium. He directed marketing, engineering, construction, and operations support of Westinghouse Nuclear Systems throughout Western Europe and Scandinavia. After returning to the U.S., Moore was appointed general manager and vice president of the Westinghouse Water Reactor Division, a post he held until 1986. He then became vice president and general manager of the Westinghouse Government Operations Business Unit where he directed GOCO operations of the Westinghouse Materials Company of Ohio, the Westinghouse Idaho Nuclear Company, the West Valley Nuclear Services Company in New York, the Waste Isolation Division in New Mexico, and the Machinery Technology Division in Pittsburgh.

In 1989, Moore was appointed President of the Westinghouse Savannah River Company, which is the highest executive position at the Savannah River Site. During his career, Moore pioneered and advanced nuclear safety in the U.S. and throughout the world, and led Westinghouse's interaction with the Atomic Energy Commission and the U.S. Nuclear Regulatory Commission.

Mr. Moore served in a number of community activities, including positions on the board of directors for C&S Bank of South Carolina, the Augusta Symphony, and the Aiken United Way. He was also a member of the Aiken County Commission for Higher Education, the President's Advisory Councils of the Medical College of Georgia, and advisory groups of Clemson University.

Source: Westinghouse Savannah River Company Profile. Courtesy of SRS Archives, negative JimMoore.jpg.

### **AMBROSE L. SCHWALLIE**

Ambrose L. Schwallie received two degrees in mechanical engineering from Ohio State University. He joined Westinghouse in 1972 upon his graduation. In 1979 he was named manager of Core Design for the Clinch River Breeder



Reactor project. While there he directed the regulatory licensing of the core, safety documentation, and interaction with the U.S. Nuclear Regulatory Commission for the project.

During his career with Westinghouse, he also served as engineering manager for the corporation's Advanced Energy Systems Division, proposal manager for Savannah River Site's management and operating contract proposal, and executive vice president of Westinghouse Savannah River Company (WSRC). He was named president of WSRC in 1991 and maintained that position until August 1999.

Mr. Schwallie was on the board of directors for Palmetto Federal and S.C. Business Center for Excellence in Education. He was also a member of the Metro Augusta Chamber of Commerce, the Palmetto Business Forum, the President's Advisory Council at Clemson University, and the Aiken Rotary Club.

Source: Westinghouse Savannah River Company Profile, April 9, 1996. Courtesy of SRS Archives, negative AmbroseSchwallie.jpg.



### **JOSEPH J. BUGGY**

Joseph J. Buggy graduated from Villanova University with a degree in mechanical engineering in 1963. He served as a lieutenant in the U.S. Nuclear Submarine Program from 1963 to 1967, and then joined the Westinghouse Company as an engineer in the former Advanced Reactor Division. During his ten years there, he held several positions including manager of the Liquid Metal Fast Breeder Reactor Plant and Thermal Systems, manager of General Electric programs, and technical assistant to the project manager.

Mr. Buggy then transferred to the Westinghouse Advanced Energy Systems Division in 1977, where he developed a diversified energy-systems background as manager of Solar Energy, Fuel Cells, and Energy Programs and Operations. In 1988, he became vice president and deputy manager of West Valley Nuclear Services Company, a Westinghouse subsidiary, which is the management and operations contractor for the U.S. Department of Energy in western New York. Just three years later, he was named president and general manager of the company, and was responsible for all aspects of management and operations related to the environmental restoration of a former nuclear fuel reprocessing facility. Mr. Buggy was then appointed executive vice president of the Westinghouse Savannah River Company in 1991, and later became president in September 1999.

Mr. Buggy has been active in the United Way of Aiken County, is a member of the Aiken County Commission for Technical and Comprehensive Education, and has advised the City of Aiken on strategic planning. He also serves on the executive council of the Energy Facility Contractors Group.

Sources: Westinghouse Savannah River Company Profile, August 9, 1999. *Savannah River News*, September, 1999. Courtesy of SRS Archives, negative JoeBuggy.jpg.



### **ROBERT A. PEDDE**

Robert A. Pedde served as President of the Washington Savannah River Company (WSRC) from August 2001 until March 2007. Prior to his appointment as President, Mr. Pedde served as Executive Vice President of WSRC from September 1999 until August 2001 and Vice President and General Manager, Defense Programs, from 1995 to 1999, where he maintained responsibility for the SRS tritium program. Prior to that position, Mr. Pedde was Project Manager and later Program Manager of the Replacement Tritium Facility, and then Tritium Area Manager. He joined Westinghouse Savannah River Company in 1989 as Project Manager, P Reactor Restart. From 1970 to 1989, Mr. Pedde held a series of engineering and management positions with the Tennessee Valley Authority, both at Knoxville and at the Watts Bar Nuclear Plant in Spring City, Tenn. His last position with TVA was Site Director of Watts Bar, where he was responsible for technical and administrative direction for all site activities.

During Mr. Pedde's presidency, he served on the Board of Directors for Augusta Tomorrow Inc., the Energy Facilities Contractors Group, the United Way of the CSRA, University of South Carolina Research Foundation, the South Carolina Manufacturers Alliance, the South Carolina Department of Commerce Crescent Fund, and the South Carolina Chamber of Commerce Board. He also serves on the South Carolina State University Board of Visitors and the Board of Trustees for the Heritage Academy. Mr. Pedde is an active member of the First Presbyterian Church of Augusta.

Mr. Pedde received his Bachelor of Science degree in Civil Engineering from Michigan State University. He lives in Martinez, Ga., with his wife, Linda.

Source: Washington Group International Biography, October 25, 2006. Courtesy of Washington Savannah River Company.



### **LEO H. SAIN**

As President of the Washington Savannah River Company (WSRC), Leo Sain holds the highest executive position at the Savannah River Site (SRS). In his current assignment, Mr. Sain provides executive leadership; assures that all safety, security and environmental regulations are strictly maintained; assures safe operation of all facilities; leads the site's community and government communications; and develops long-range strategic performance objectives that will maintain the facility as an integral part of our nation's nuclear defense capabilities.

Before he was appointed President in March 2007, Mr. Sain served since March 2006 as Executive Vice President of WSRC. He was responsible for managing the site's Management and Operations organization, including development efforts in a wide range of industrial competitiveness, technology management, and strategic planning. These activities included identifying and qualifying new business opportunities, structuring and negotiating funding and actively participating with management (both at the Board level and on a day-to-day basis) in the development and continuous implementation of all aspects of the company's business plan. Prior to that, Mr. Sain served as Chief Closure Officer, where he was responsible for all closure activities at the Savannah River Site, including waste solidification, liquid waste disposition, soil and groundwater remediation, facility disposition, meeting specified end states in the F Area complex, and completing disposition of materials in the H Area complex. In F Area, activities included deinventorying F Canyon and FB Line, then deactivating those facilities; decommissioning and demolishing more than 50 support facilities; and deactivating and demolishing the Naval Fuels complex.

Mr. Sain has 31 years experience in nuclear facility operations, training and strategies for plant startups, and improving troubled plants through the use of Integrated Safety Management Systems (ISMS). Prior to his position at SRS, he was President of Washington Safety Management Solutions (WSMS). In this position, he was responsible for directing all activities and operations at WSMS, which is a wholly owned subsidiary of Washington Group International. WSMS is recognized by the Department of Energy (DOE) as a "Center of Excellence" for Integrated Safety Management and safety analysis. The company has regional offices in Oak Ridge, Tenn., and Los Alamos, N.M. WSMS employs more than 500 professionals, who provide safety and operational support for DOE, the Department of Defense, and commercial clients. Mr. Sain's experience also includes several years at SRS, where he gained plutonium experience related

to dissolving spent fuel, crucibles, slag and other Pu products, and converting the solutions to metal buttons and uranium oxides for stabilization. In support of SRS's national security mission, he was instrumental in the success of the startup of the Replacement Tritium Facility and the operation of Tritium Facilities. He also had overall responsibility for the procedures upgrade program, and for operator and supervisor certification for K Reactor restart. In addition, he was responsible for successful performance in operational readiness reviews at RTF, F Canyon, FB Line, H Canyon and HB Line. His accomplishments in installing Integrated Safety Management at SRS made significant contributions to the establishment of nuclear standards and disciplined conduct of operations at the site.

Mr. Sain also brings significant experience from his years in commercial nuclear power operations, having directed the Tennessee Valley Authority's (TVA) extensive training programs for nuclear, fossil and hydro. He achieved a Senior Reactor Operator (SRO) hot licensing certification on TVA's Sequoyah Nuclear Plant. He also attained a Nuclear Regulatory Commission license for the Oconee Nuclear Station Units 1, 2 & 3 and an SRO cold license certification on the Bellefonte Nuclear Plant. Prior to TVA, he was employed by Babcock and Wilcox in the Nuclear Power Generation Division. Mr. Sain also served in the United States Navy for eight years.

Mr. Sain earned his Bachelor of Science in Nuclear Physics from the University of Tennessee.

He lives in Aiken with his wife, Susan. They have three grown children.

Source: Washington Group International Biography, 2007.  
Courtesy of Washington Savannah River Company.

# APPENDIX B

## ORAL HISTORY TRANSCRIPTIONS

## Oral History Interview – Shepherd Archie

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Shepherd Archie was born in Springfield, Massachusetts. His father died while he was still young, and his mother had to move back South. Archie grew up in Waynesboro, Georgia, and went to public schools there and in Augusta. He joined the Army in 1951, but returned to the area in 1953. At that time, he applied for work at the Savannah River Plant, and was hired almost immediately.

As an African American, Archie experienced many of the milder forms of racial discrimination that were common at Savannah River Plant during the 1950s. This situation improved dramatically in the years that followed. Archie, who started out his SRP career as a janitor, moved up to become a mechanic in the 1960s. By the 1970s, he was a supervisor in Traffic and Transportation (T&T), followed by a similar position in Central Shops Works Engineering. Archie retired from the plant in September 1993.

**Interviewee:** Shepherd Archie

**Interviewer:** Steve Gaither, New South Associates

**Date of Interview:** April 20, 1999

Steve Gaither: This is an interview with Shepherd Archie, conducted by Steve Gaither, historian with New South Associates. It's being conducted on the 20th of April, 1999, at Mr. Archie's residence. This interview is being conducted as part of the Savannah River Site History Project, which is documenting the fifty-year history of the site and its impact on the surrounding area and the people who have lived in that area. Mr. Archie is being interviewed because of his long association with transportation at the site. Do you mind if I ask you your date of birth?

Archie: 5/18/1929.

SG: And where were you born?

SA: Springfield, Massachusetts.

SG: What, can you tell me, would you say is your relationship to the Savannah River Site, in your own words?

SA: Yes, I had a good relationship with the Savannah River Plant. I went to work there March the 5th of 1993, and I have not regretted from that day that I went to work there.

SG: 1953.

SA: I mean 1953, I'm sorry. 1953. And I have not regretted not a day I've been there. I got along good with supervision and everybody out there.

SG: You lived in Springfield?

SA: As a small boy, I came South with my mother. My father died in Massachusetts, and my mother came back South. She was from the South, and she come back home.

SG: Where was her home?

SA: In Waynesboro, Georgia.

SG: How far is that from here?

SA: That's twenty miles, twenty-five miles from here, something like that.

SG: So you grew up in Waynesboro?

SA: Yes, I went to school in Waynesboro, and Augusta here. I had some uncle living in Augusta here. I went to school here, and then some in Waynesboro.

SG: How did you find out about the job at the plant, or how did you get the job?

SA: I was inducted into the Army in 1951, and after I came out of the Army in '53, I came to Augusta and I heard about this Savannah River Plant, and I was interested in it. I was Q-cleared in the Army, so I said, I might have a good chance of getting a job out there, so I went to work out there.

SG: What did you do in the Army?

SA: I was a gunner on the 155, Howzer [Howitzer].

SG: And that required a Q-clearance?

SA: I was working in the Q-cleared fuels.

SG: Can you tell me about how you got the job here? You were interested in getting a job here.

- SA: I was really lucky. I went out there on a Monday and applied for the job. Tuesday, I went back for the physical. They told me on Tuesday to come back to work on Thursday, so I went back to work on Thursday.
- SG: Wow. Fast.
- SA: So that is where I have been there ever since.
- SG: When you came out of the Army, did you go back to Waynesboro?
- SA: No, no. Before I went to the Army, I was working for a company called Knox Brothers Construction Company.
- SG: And where was that?
- SA: Atlanta, Georgia. I mean, they was from Thompson, Georgia, but they sent me to Atlanta, Georgia, and I was working in Atlanta when I was drafted into the Army. When I came out of the Army, I had an auntie living here in Augusta, and I came to Augusta, and her husband—and he was working for the VA [Veterans Administration] Hospital, he advised me to apply at the plant, so I went out there and applied at the plant.
- SG: He advised you to apply?
- SA: He asked me. He said that, “If I was you, I would go out to apply at the—” They called it then the bombing plant. So I went out there and applied.
- SG: Why did you and your uncle think that this would be a good place to work?
- SA: He thought that would be a good place because it was just getting off the ground, you know, just building, and he was thinking that would be a good place to start at the ground root and work yourself up in the plant.
- SG: What did you know about the plant when you first started working there?
- SA: I didn’t know anything. See, I was in Atlanta when they started to build it in 1950, and then I went in the Army for two years. When I came out, there was construction, and they was just fixing to go into operation. So that’s when I come in on the grass root and started.
- SG: Can you tell me anything about local opinion of the plant back at that time, in 1953?
- SA: When I first came here, they had a high opinion of the plant. That was really the golden spot of this area, the Savannah River Plant. They didn’t say the “Savannah plant.” Most people called it the bombing plant. They paid more money than any other place here, because at that time the labor salary was seventy-five cents an hour, and a dollar. And I went out there working, and my first week working was a dollar and twelve cents an hour, see, but that was more than anybody else was paying.
- SG: At that time, did anybody have negative opinions of the plant?
- SA: You didn’t find too many people who had negative opinions of the plant at that time. There was a few peoples that I met that had to migrate from the plant. They didn’t want to leave their homes. But other than that, they didn’t feel no negative part of the plant being out there. But I met some friends of mine, they had to move from down there and move to a new place, and they didn’t like that, but other than that, I would say 95 percent of the peoples didn’t have no hard feelings about the plant being there.
- SG: our friends that had to move from the site, where did they live?
- SA: Some lived over on 278 Highway, over in Aiken, and one lived around the corner there.

- SG: Where did they live on the plant?
- SA: They lived in Ellenton.
- SG: They lived in Ellenton?
- SA: Yes, Ellenton.
- SG: Were they farmers?
- SA: They was farmers. Some of them worked to a little place down there they called Leigh Banana Case. They built boxes. It was something like a box plant down in there.
- SG: Oh, yes. I've seen that.
- SA: Leigh Banana Company.
- SG: Lemman Ellen?
- SA: In Ellenton, South Carolina. That's where it was.
- SG: Can you tell me anything about how their lives changed?
- SA: I associated a lot with the minority of black. Their lives changed tremendous from poor to middle class. They got a better life out of that, by this plant coming, because just like I was trying to tell some of the guys that were working, I said, "You ought to be thankful the plant come here, because this land you was farming was just something to keep the earth together, the land was so poor." I said, but now most of them own homes, nice homes and all, so they benefit.
- Most everybody benefit by this plant coming here, and by that Savannah River Plant coming here, it not only helped the people that moved out of the area, the people that worked out there, but the industries inside Augusta, in the surrounding area, had to go up and match the salary, or come close to matching the salary at the Savannah River Plant to keep their employees.
- So that being that Savannah River Plant over there, it helped the whole area. Helped everybody. It didn't just help the people that worked out at the Savannah River Plant, the people at Babcock and Wilcox, Miriam Brothers and everybody, they had to bring their salaries up to keep their employees, because they were leaving here and going out there. Even the police department. They were going, leaving the police department, going to work for Du Pont security department and different places.
- SG: Do you mind if I ask where you first lived when you first started working out there?
- SA: First I lived in Augusta here over on Anderson Avenue with this uncle. See, I wasn't married. I lived with this uncle I was telling you about, and I lived with he and his wife.
- SG: And that was on Allison Avenue?
- SA: Anderson Avenue, in Augusta here, 1130 Anderson Avenue.
- SG: Can you tell me a little bit about how-well, I guess first I should say, Anderson Avenue, is it close to here? Is it a few blocks or few miles?
- SA: Oh, it's about two miles from here, not far from here.
- SG: And after you lived on Anderson, where did you live?
- SA: After I left Anderson in 1955, I moved. This place was just building houses here. See, I was travelling out this road going to work, and I saw that they was building this subdivision here, and I bought a house here. I loved it, so I'm still here.
- SG: So you've lived here since 1955?

SA: I've lived here ever since November of 1955. All my kids—I wasn't even married when I moved here, and I've been here ever since. I didn't feel like moving no place else. I was close to work, I didn't have no traffic problems. Just drive on straight to work. I didn't have no problems.

SG: How has this area changed throughout the years?

SA: It changed. Some of the peoples left and some—the guy next door there, he worked over there, but he died in '81. But it's been the same. Kind of changes every—you don't have no hard feelings about the plant out there. Everybody really cared for the Savannah River Plant, because why, they felt like they were kind of safe with the Savannah up there, but they don't trust these chemical companies here now. But Savannah River Plant, they trusted Savannah River Plant. Savannah River Plant tried to practice what they preached. And another thing that made Savannah River Plant great, they hired inside the families. See, I have a son working out there now. My wife and I raised her sister's boy, a nephew. He's out there. And I have a niece out there. See, that made a big—part of the safety record was to—see, I brought safety home with me. I'd tell my kids about house safety and what to do, what to don't do, how to drive a car, what they don't do, and Savannah River Plant helped a lot of families. You hardly ever hear kids, that their family was employed at the Savannah River Plant, get in trouble, because of the family, the peoples, the family that took care of them.

That man out there, he have five kids. He have two sons, three daughters, and they're always doing well. And nine times out of ten, everybody that had families worked at the Savannah River Plant, they did good. I sent all three of my kids to college, from working at the Savannah River Plant. My son, he's out there now, in the fire department. The one on the end out there, she's a doctor in Morehouse College, Atlanta. And this one right there in the middle, she went to Paine College.

So the Savannah River Plant really upgraded this section of the Southeast, not only here, all around Beaufort and all of those places down there. I worked with a lot of peoples from down there. So I think that it did us a good thing by moving in here. That's why I hope they keep it there.

SG: Were there any reasons for not wanting to work there?

SA: I don't know. There's no reason nobody could say for not wanting to work out there, because they took care of their employees. Back in the fifties and sixties, everywhere was rough for minorities. You know what I'm talking about. But at Savannah River Plant, when I went to Savannah River Plant, you only had different bathrooms, different water fountain. They had one water fountain, but they had cups. They always used cups. Different bathrooms and stuff like that. But we didn't rebel about that, because we knew it was better days coming. And the older employees there, we got together and we'd talk about it, say, "We're not going to rebel, we're not going to demonstrate, we're not going up and tell nobody about [unclear]. We know some day it's going to get better." So that's what we did. We just realized on that. We didn't have no black supervisors, we didn't have no black female secretaries. When I went to work, I dated one black lady there, and her purpose was to clean the ladies' bathrooms. But we ignored all that. We knows a better day is coming. So all this time that I was humiliated out there, I didn't feel too good about it. I cleaned up a bathroom and used it. A gentleman came in there and ran me out, told me I shouldn't use that bathroom, to go down in the basement and use that one. So I said, "I just cleaned it. If there's something wrong, I'll re-clean it." But I didn't let that get to me. I didn't tell nobody. I kept that to myself. I did, because I was used to that.

I was in the Army when they integrated it. That's my first seeing an integrated Army, and I worked through that. That come out good. When Du Pont integrated the whole plant into one, I was there.

SG: About when was that?

SA: The Army was integrated in '52. Du Pont integrated in '64, and I went and worked through that. So I went to veterans school for a mechanic, applied for it out there. They told me, "No, we couldn't hire you because of your color."

SG: So this was before 1964?

SA: No, that was after 1964. That was in '68. So I didn't say, didn't rebel. '69, they called me, so we set everything right, and I worked for three years, integrated, for a mechanic then in there, and worked with the mechanics there, white mechanics. They didn't want to help us, but we finally got through with that, and a new group come in. So that's what we did.

Then '72, that's when it came up. They called me for supervisor, and I was placed in—you might not want to hear what I'm fixing to say—but I was placed in a position in T and T [Traffic and Transportation]. Being in T and T, they didn't have the top-grade peoples, you know. You put in there what they call "rednecks," supervisors. They wouldn't even speak to me.

SG: They wouldn't speak to you?

SA: No. Some of the supervisors. But I had a good supervisor named Don Grogan. He was over here. He was a real nice man.

But I want to get back. The best person I ever met at the plant was a plant manager named J.D. Ellett. He was a real nice man. So when I went in there, I said, "What am I going to do? I'm in a place here where nobody won't show me nothing. I've got a job I have never did before. Nobody's going to show me anything." So I didn't know what in the world I was going to do in there. I didn't tell my wife, I didn't tell nobody, just sitting there. I was in here looking at television, and I looked at a show—I imagine you was a little boy—called "Wild Kingdom."

SG: I know the show.

SA: And there were a pack of wild dogs. They picked out a caribou. He was weak, and they followed him around until they got him. I picked out me a man at the Savannah River Plant, a white guy, he would talk to me, and me and him got to talking and talking and talking, and we got to be close, and before they knew it, he had done sold me to everybody, and everybody came around. This one particular man sold it to them.

So that's when I started moving. After I got in there, I let them know that I wasn't a radical man, that I wanted the same thing they wanted, and I was eager to learn. Then they went to showing me. The best thing to know about a person, don't know everything. You might know how to move this from there over to there, but go to him and ask him, "How would I move that from here over to there?"

So that's what I did, so I started moving up in the plant, and I didn't have no problems. They went to showing me everything, the whole plant. This one was going to show me what he was doing, this one was going to show me what he was doing, and what they didn't know anything, I had got everything from everybody. And that is how I made it at the Savannah River Plant.

SG: I'd like to back up a couple of steps. What was your first job at the plant?

- SA: When I first come in, why I got hired so fast, the first thing, when they open up a plant, they need what? Janitors. So I applied for a janitor. I wanted to get in there. So they applied me for a janitor. I worked as a janitor eleven months, then I went to T and T, transportation. I was in the old schoolhouse in Ellenton. That was my first job, down in the schoolhouse down there. I was a janitor down there. They had an office down there, in Ellenton, South Carolina. So that was my first job.
- SG: When you said that, in the early years, that you and others decided not to rebel against conditions, why? What influenced that decision?
- SA: What happened, you cannot force no one to do the right thing. You've got to let them do it on their own. You've got to carry yourself in the way they will give it to you, not you go try to take it. See, I could ask you for something, you will give it to me, but if I try to take it, you're going to rebel. You're going to take longer giving it to me. So we decided we wouldn't do that. Most of them came up through the segregation world, and we know how, and we were trying to make it better for our kids by going along whatever they do. We knew we couldn't go in the cafeteria and eat like other people; we had to go in the corner. We'd bring our lunch. We sat up in a group and eat. We know we didn't have bathrooms to go to, wash our hands. When we'd go in the field to do jobs, we would carry fifty-five-gallon drums with water on it to wash our hands. So we didn't rebel.
- As it come, and when it did come—they integrated all the bathrooms—we didn't just run in there, and say, "I'm going to take this locker, I'm going to take that locker." We eased into what locker is available, easing in. So, trying to make it better for the next generation to come. So that is how we worked it.
- Now these things here, the supervision didn't know nothing about it. We talked that among ourselves, and we tried to be a part of the plant. Just like I'd tell them, said, "Now we might not run the reactors, we might not run the powerhouse, we might not run the administration building, but we repair the road for them to get there." We're making a big contribution towards the plant. We repair the roads to get there, we repair the water lines, we do that. We're making a great part of it for these people who are running the reactor, because they couldn't run the reactor if they couldn't get to it. They couldn't run the reactor if they didn't have water. So we're doing the greater part. Your job ain't low. Your job is just as big as the man pushing the buttons in the reactor.
- SG: You're right.
- SA: So that's what we was. That's what we decided, mostly decided. Over the years, I had good communication with both races, black and the white. I told them, when I made supervisor, I told them, the black, I said, "Now, you can take oil and water and put it together. It won't mix. One of them just goes. But you can pour Tide washing powders in it, and they'll mix. Now what I'm going to be is that Tide washing powder, to try to make the races mix." So all the while I was there, I had good relations with both. I didn't have no problems.
- SG: Was there anything about working for either the Savannah River Site or the Du Pont company that influenced that, or would the group of people that you were with, would you have acted the same way at any other company?
- SA: I couldn't tell, but I believe, working for Du Pont and Savannah River Plant, they would—you was in a position that you could do things that way. Other companies might have not. I didn't know about other companies,

but working for Du Pont, we would have a free range to do that, to talk to peoples and try to bring peoples together. But by working for Du Pont, many, many of us profitted from it.

If you had to do it over again, working at the Savannah River Plant, we would go back. And anything that we can do now to help it, we'll do it. I had a great influence over the plant and the peoples, and I had a lot of help from the top peoples, even after Westinghouse took over, come in. I got along with them real good. We got things did.

SG: You say you had a lot of influence?

SA: I would say, to carry yourself in a way that people would listen. I didn't believe in radical parts. I believe in negotiation. I don't care how bad a person is, that there's some good in him someplace. I have had bad, some experiences and some good ones, out there, and I had some peoples that nobody couldn't control. I had-you might cut this off. I can listen if you're going to edit. I had a young man that came, a white guy. He worked for another supervisor, and he came. He and the black guy in the thing couldn't get along. They were fussing and they were calling each other names and all.

SG: About what year was this?

SA: Oh, this was '93. No, no, no, about '91, something like that. They couldn't get along with him, so they transferred him from—he was working for the white supervisor—and transferred this white guy to me.

So that Monday morning he came in and he said, "You heard about what happened?"

I said, "Yeah, I heard about it," I said, "but I don't believe it."

He said, "They wrote me up."

I said, "You know what? You know what I think about that, even if they wrote about you?" They wrote it, I couldn't tear it up, but I ran a copy off of it. Sitting over my desk in front of him, I ran a copy of it. I took this copy, give it back to my supervisor, he puts it in the folder, but I had the copy. He knowed that was the original. He thought it was the original.

I said, "You know what I think about you doing what you did?" I just tore it up and put it in the trash can, right in front of him. I said, "As far as I'm concerned, that's over." I said, "Let's start a new life." He's one of the best mens you ever wanted to know. He's working there now. Calls me here to the house now. People just didn't know how to handle him. So he gets along with everybody.

But I had some good experiences out there, and I hope to be out there. Westinghouse and Savannah River Plant and DOE [Department of Energy] did a good job. [Doorbell rings. Tape recorder turned off.]

So I learned a lot from out there, and I hope that we continues to keep the plant. I worked the whole plant. I worked the whole plant. If somebody wanted something did, after I came to be a supervisor, I was over all the heavy equipment in roads and grounds. If they wanted something did, I'd try to get it did. Regardless of how it was, I tried to get it done.

And then nine times out of ten, I got it did, because I had good peoples, and the onliest way to work with good peoples is to be good to them, and let them be a part of what's going on, make them feel a part of what you do. So we'd get in the line-up meeting in the morning. "We done got this job and we've got this going on there, so we're going to do so and so today. How do you want to do it?" And they've got some good ideas. So we get together, we go do it, and we can do it the easiest way and the safest way.

We didn't ever have no—we had some of the dangerous work out there. We didn't have no accidents. We turned one motor-grader over since I was there, one of the motor-graders turned over, but nobody didn't get hurt. But we realized on each other.

And something they're doing right now in T and T that I started when I was there, I did not work two blacks together, I did not work two whites together; I mixed them. You get a better line of work safety-wise and production when you do that. The two men, they compete. They didn't have nothing in common last night. Their wives didn't go out to eat together last night. They ain't got nothing to hide from each other, to share with each other. The only thing they got in common is their safety and their job, and they did a tremendous job together by working like that. I left that—still doing it now. In the CSWE [Central Services Works Engineering], it's working like that, and that's working out fine.

SG: CSWE?

SA: That's where the Central Services Work Engineering is now.

SG: So how did you learn all this? You've learned a lot about how to deal with people. How did you learn that?

SA: I don't know. I just read books and picked it up. I had a stepdaddy that raised me, and a mother, very close. I was the oldest. My daddy's dead, but there's ten more under me, and my mother raised us and daddy—she told us, she said that, "In life, you're going to have problems, where one, two, or three of y'all, four of y'all can't solve, but you ain't going to have too many problems all eleven of y'all can't solve. So y'all got to be together." So that's what I believe in life. You've got to be together as a family. And that's the way I work my peoples, in trying to work like a family. If you see somebody do something, don't run back and tell me. Go to that person, say, tell him. He's just wrong. "Let's do it this way. That's unsafe. Do it that way." He'll listen. But if you come tell me, I'm going to go right and tell him you told me.

So I had the good crew. I had the first women dump truck drivers that ever hit Savannah River Plant, women dump truck drivers.

SG: Do you know when that was?

SA: That was in '88.

SG: The first woman dump truck driver?

SA: No, must be '87, women drivers, dump truck drivers. They was real good, too. They've still got some out there. Well, women make some good employees. Women can do a good job. They just need coaching, need somebody they can trust, somebody they can depend on. And my boss come in and say, "We've got to do this?" You don't go back and tell the people just like he tells you. You take the beating, but you go back and tell them in another way, sugarcoat it a little bit. That's the way to get along, and they come to love you. I didn't have no problems with women and mens.

Something I always visualized in my mind to do, and this happened at the Savannah River Plant, I would like to see young white boys, middle-aged white mens, elderly white mens, black and white, and womens and all, put into one group, and see how would they react. So I did it out there. I had young white boys. I had twenty-two peoples. I had mens in the sixties, black and white age limit, and I had a boy, twenty-three, womens, white women and black women, all in one group, and, you know, that was fantastic.

SG: Was it?

- SA: Real good. They worked so good, it cost me two hundred dollars. I went and bought two hundred dollars' worth of steaks and got permission from my boss, and we went to Forestry headquarters and cooked them. And I fed them and all sat down and eat. They all sit in there and eat, and I stood up there and looked, but they didn't know what I was thinking. I was thanking the Lord for making what I wanted to do come true, to see all these type of peoples working together as one. And one of them was from Buckaloo, I think Buckaloo something, Mississippi. He was all-they all was sitting there together. But it come true. And I don't think that could have happened nowhere else but at the Savannah River Plant.
- SG: Why is that?
- SA: Because you wouldn't have had the chance in other companies to do things that way. See, Savannah River Plant, the supervision out there, after they had confidence that you could do, produce what you wanted to do, they would give you the free reins to run it yourself. Everything I did, I didn't have to run back and ask my boss, say, "I want to blade that road. I want to put a sewer pipe in here." I had the freedom because he trusted me, and I don't think no other company would have done that.
- SG: About what year was the dinner that you had for that group?
- SA: That was about '91 or something, '92. That was just before I left. I left in '93. But in '91 when I had this dinner for them at the Forestry headquarters. When you go in the gate there from Augusta, it's a building sitting there on your right. It was at lunchtime, and we had fixed that up for them. They saw me stand up there. They just thought I was there. "Why you ain't eating?" I was just rejoicing to see what I wanted to see.
- SG: Can you describe what an average day was like when you had your first job as a janitor? Like, what time did you go to work?
- SA: At that time, we was going to work at 8:15 and getting off at 4:45. It was five days' work, working every day. I learned a lot of peoples, you know, office peoples in there, fishing my way around. The first day I came to work for Savannah River Plant, my goal was to learn everything, to meet everybody that I could, be nice to everybody. In return, they would be nice to me. So that's what I did. I didn't have—I was a janitor, I worked around the peoples, and I didn't have no fear. I worked in that school down there. Yesterday, one man that was working in there, I was over there in Beech Island, buying some parts for a lawnmower, and he came in there, he's old. Me and him both are old. He came in, hugging each other and talking. And so that was way back there when I first started. Day one, until I left, I never hit the top. When you get to the top of a tree, there ain't nothing else to go, but you're at the top. I've tried to fix it in my life that I would never get to the top. I always leave room to learn. When you get so you can't learn anything, you're dead. Really, you're gone. So I always fix it so you can learn. My grandson, he's ten years old. He come here every day. I learn things from him. So that is a way of life. And when we would hire young boys, coming in, young employees, they got good ideas. We didn't say, "Well, look, here comes this young buck in here. He thinks he knows everything. He can't tell me anything. I've been here thirty years." I don't care how long I've been there, I can learn something from this young man. He's bringing good ideas. So that's the way I always figured. From the time I started, till I retired in September of '93, I never hit the top. I always had room to learn more. And my biggest thing was, peoples, learn folks. Everybody is not the same attitude. You can't treat-you

can read it out of that book there and say what you're supposed to say to everybody, but you can't do it. Everybody is an individual. So that's the way I figured it out.

That is why when you're having a conflict, you just can't-what you're going to say, you can't say it to everybody. You've got to do it individually and talk, get their opinion. So that is the way I made it. It worked out for me. It must be working for my son. He's in the fire department out there now. He's the fire chief. Tell him every day. When he comes from work, he stops by here, about how he did today. So and so. He told me one day, he said, "Daddy," he said, "I had to get on a man today. He did so and so and so and so."

I said, "Who was there?" It was a Tuesday.

And he said, "Yeah, I had to get on him."

"Don't ever do that no more." I said, "That's wrong." I said, "You may got on him."

SG: What?

SA: I said, "You may got on him about it," I said, "but you should have carried him around the building. Don't get angry before nobody else. Don't ever do that. If you've got something, you get on one on one. Don't do it that day, wait till the next day, because both of y'all is hot. Wait till the next day, and then you come, say, 'Now, yesterday you did something that wasn't right. We don't want to do that no more.'" I said, "You won't have no problem. But if you go at him right then, you're going to have a big argument and that's when some fighting and everything is going to happen. You wait another day. Maybe wait two days and then go back to him and talk to him."

SG: Was that the way you managed?

SA: That's the way I managed. If somebody said something I didn't like, I didn't bother them then. There would be a meeting there, and one of the administrators said, "Well, how are you going to do so and so?" I didn't say a word. I just changed to another conversation until everybody go out. I didn't say nothing then. The next morning, I said, "Wait a minute." I say, "What you said yesterday wasn't right. Do you think it was right?"

But that's the way everybody got a different approach to everybody. That's what I had. And that is the way Savannah River Plant worked. I hope I left a great impression on them when I left there. I didn't never hit the top, but I tried.

And Mr. Walt Joseph, he gave us all the support. Believe me, I liked it real good. I had some good supervisors. Another guy out there now, Dan Clayton, he's out there now. And there's another man came in here from Westinghouse, Jack Hammond. He's a real nice man. What impresses me, the first I met him, we went to Hanahan, we worked in that hurricane-

## Side Two

SA: -in Charleston, tore up Charleston. I had been down there for two days.

SG: The hurricane?

SA: Hurricane. And I had been there for two days, and I hadn't contacted my family, nobody. So he asked me, said, "You haven't called home?"

I said, "No, I had no telephone."

He said, "Go look in my car and get that telephone. Call your wife and children." From that little bit, he and I have been friends ever since.

And I just love the Savannah River Plant, still do. Never downgraded it. I don't quite [unclear]. Some peoples going to catch things from out there. You're going to be careless, catch things. And after I left from down there, I found out that I had, in '94 I had a prostate problem. I couldn't put that on Savannah River Plant, because my family has a history of prostate. But other than that, at this point, I might die tonight, but I don't take no medicine. Don't have to take anything, but you can't put-you get careless if they give you, tell you, say, "Don't go in that building. If you've got on your clothes, you go." Now I know supervisors have took their-better not say this.

SG: Do you want me to turn it off?

SA: Yes, turn it off.

SG: Okay. [Tape recorder turned off.]

SA: So, anything else you want to know?

SG: Well, yes, I have plenty more questions.

SA: Okay.

SG: How did your job change after you got the job with transportation?

SA: My job changed. I went to-now, a good job I had when I was in transportation in the sixties, I was the messenger. I brought the top brasses from DOE, Du Pont, they came into the hotel, and I would pick them up in the limousine in the morning and then carry them out to the plant. Every morning, that was my job.

SG: This was in early-you said the sixties?

SA: In the sixties. I carried them out there every morning, to the plant. And they realized on me, because I had peoples to come in from India and Greece, you know, coming to visit the plant. They didn't tell them that their-say, "When you get to the hotel, ask for Archie," and I would take them out to the plant. Sometimes they'd party and they would oversleep. I would go to the desk and asked the lady for this person's name. She said, "He ain't down yet. I don't know what happened."

I would go up to his room, wake him up, "Hey, you're late. You'll ride the shuttlebus." And I would-just little things like that. You did things that would help.

When I found out that I had made supervisor, I got cards from those people. They knew I was making it before I did. Like this fellow, Mr. J.D. Ellett, he done moved to Wilmington, but he didn't send me a card, he called me and told me about it.

So I met all those type of people, and I knowed them and kept myself in the position that, I mean, you and I are riding along, talking, and you've got to have something to talk to somebody about. The first thing I would do in the morning, I would get the Atlanta Constitution, I got [unclear], I read the Augusta Chronicle and I read the New York Times and I got all the informations. Whatever he wanted to talk about, I had a little idea of what he would be talking about. So that's what I programmed myself to do to peoples. I didn't have no-back there then, the segregation was real bad. We had a big blow-up in Augusta. They burned the plant, everything.

SG: Again, this is in the sixties?

SA: In Augusta, yes, in the sixties, '68. And I called the plant after I got over here, and said, "Please, whatever you do (the dispatchers), don't send any white drivers over this way tonight. If you've got to come to

Augusta, go to the airport, send black drivers." They're used to it, so that's what we did. Yes.

SG: How did your job change with integration, or in black and white relations in the plant from the sixties and on up? Can you say more about how that's changed?

SA: Tell how my job changed?

SG: Yes.

SA: It changed gradually, you know, went to moving up to a different nature. Like I told you, that's when we went to mechanics, and then we'd move up to jobs, and in '72, I went to supervisor and all. And Du Pont peoples, we are in the community now. We're going back into our community, and this community where I live right now, we was at the mercy-see, we was just out of the city limits, and we were just before South Carolina.

SG: Just before what?

SA: Going over the bridge, over in South Carolina.

SG: Oh, right. Okay.

SA: And we wasn't in Augusta, because just a suburb of Augusta, so we didn't have any fire department. The city fire department wouldn't come, so we got together Du Ponters. Nobody believed the Savannah River Plant employees that lived in this area. We're going to do something about that. We're going to build us a fire station. So we did.

That fire station used to be across the bridge, the fire station right there, we built that, and nobody but the Savannah River people, we built that fire station. I was the first chief. We ain't had no fire truck. Where are you going to get a firetruck? We went to Savannah River Plant and they will auction off a fire truck, and we bidded on it. We pooled our money together, and we bid five thousand and one hundred dollars on that fire truck, and we got it. And that's when we started the volunteer fire department.

We built that fire station with no money. Me and another boy [unclear], brickyard. Asked the man about the brickyard. He told us how many bricks it would take and how much it would cost. I told him, I said, "We'll double that. [unclear] house in fire protection, we're fixing to build a fire station." He gave us the brick, gave us the cement, we did all the labor work. But we got all the materials from that to be donated, and we built that fire station, knowing we couldn't run it.

We enticed the county then to take it. This is just a building and you had your fire trucks, so, "Yes, we'll take it and we'll run it." So we gave it to them. So that was the people from the Savannah River Plant.

SG: What's the connection between the people who worked out at the Savannah River Site and doing things like that?

SA: We was all in it together. We worked together, we came up together, we learned to do things together at the plant.

SG: Was that different from other places?

SA: I don't think there's another company in Augusta or its surroundings could had the folks that put that fire station and this community together that way, because we had the know-how from the Savannah River Plant. See, some of the guys worked in the maintenance and some everywhere, and we know that we was together. We didn't never have any arguments together. We made sure of that. Three guys and I rode together for thirty-three years and we never had an argument.

SG: You rode together in a carpool?

- SA: Carpool. All of us stayed in this area. And that's the way we is now. But we put that fire station together. And somewhere down the line, I think somewhere I've got a picture with nothing but the Du Ponters around this fire truck. And we all put it together. We run it for two or three year, but we didn't have nobody, because during the day, we were working. The county took it, so now we've got fire protection. Made our insurance rates go down, and we can rest easy at night, because our fire station's right down there. So all that comes from being employed at the Savannah River Plant. So that is something they did for us as a community, and a minority community. On 781 [Highways 78 and 1], these guys got a fire department. They all worked at Savannah River Plant up there.
- SG: 781?
- SA: That's [Highway] 278, like you're going to—you go out from here, there's a guy you need to talk to. He's named Robert Lee Kelley. You go 278, like you're going to go into New Ellenton, and you find this guy. He runs a store over there, on the right-hand side, named Robert Lee Kelley, and all of that along there is most about-95 percent of the people living on that road worked at the Savannah River Plant, and they moved out of that area.
- SG: Do you know the name of the store that Mr. Kelley runs?
- SA: Kelley Grocery.
- SG: Kelley Grocery?
- SA: Yes.
- SG: Is that K-E-L-L-E-Y?
- SA: That's right. It's the only store after you leave Beech Island, going up that way, it's on the right-hand side, big store over there, that's his store.
- SG: The plant being out there, did it draw a lot of people in from other areas?
- SA: Yes, they moved in.
- SG: Did that change this area any?
- SA: A lot did come in, but when you come into an area, you're going to change with the people that live in the area. So they just come in, and just come into the group. We have some peoples, some black guys, move in here from, they move up on here but they didn't change much, they just come in with us. We had one guy, he came in from Minnesota. His name was Jones. He was an engineer. He came in here, he tried to change things. You know, he was going to come in and he was going to organize the black supervisors at the plant. He came to me, and I said, "We doing fine. I always feel if something ain't broke, don't fix it." I said, "This ain't broke. We don't need to fix it." So he went to a lot of them, but the person that had the most influence wins, so we didn't get the organization started because I didn't believe in it. I must have had more influence than he was. [Laughter] I don't know what happened to him. I don't know if he's still out there or wherever he is, but he came here with the impression that we wasn't paid right and the jobs wasn't right and all. But like I tell my son and children, "If you want the top job, you've got to prepare yourself for it. I didn't have a chance to go to college just like y'all you do. But get your college degree, you'll get the type of job you want." So that's what he did. They've got something out there now going. They called me. I had to put a little—threw a little water on the fire with something happening now. I've been gone five years, but they still call and ask me different things.

[Laughter]

But it's a good plant. You don't want to mess it up. You can negotiate and get anything you want by negotiating. You can't force nobody. I can't sue you to get nothing from you, but if I'm going to negotiate, I might not get everything I wanted, but I'll get a portion of it.

SG: During periods when operations at the plant brought a lot of people to the area, were there housing shortages in here?

SA: Well, see, I came here when they was building. That was when I was in the Army. That was in '51 and '52. They was building a lot of houses.

SG: They were building a lot of houses?

SA: Yes, they were house trailers. Now, where my house is sitting now, it was house trailers all around. They had big house trailers and stuff, and that was shortages. That was where peoples lived in. Then they stayed on in Barnwell and in Williston. They would commute to the plant every day, but they didn't-wasn't too much of a shortage. There was a house shortage, but not bad, not when I got here in '53.

SG: Were there ever, in years after that, shortages?

SA: No. They went to building a lot of houses in Augusta here. That was when the subdivision come up, and then the subdivision come up all over town, been going in here. And where my son live at now, most of them out there is people that work at the Savannah River Plant. They built a whole subdivision out there, and most of them living out there work out to the plant out there.

SG: What about schools or food supplies and health conditions?

SA: The schools here was real good, pretty good. My wife and I, we married in '56. Then I was putting two dollars every week in a saving plan, and I had saved. I'd been putting this money in there. So I asked her did she want to go to college, but to send her to college, I had to cut the two dollars off. [unclear] because it was going to be tight, because we had three kids. So she went to school, Paine College.

SG: What year was that?

SA: She started to school in 1961.

SG: At Paine.

SA: So she went to school in '61, and she finished-'62, she finished in '66. She went to teaching. I figured out, you couldn't put two dollars a week in the saving plan and it would benefit you 30,000 dollars a year, so that's where she went. We sent her. She went to school, then she went to Augusta College, got her master's, so she just retired last year. Thirty-one years. All that come from working at Savannah River Plant. You see them children, they come out of school, none got loans. They come from where? The Savannah River Plant. So most everybody you see, kids come out of school, they repaid it.

What the plant didn't know, we was together. We talked together outside the plant, black and white. We wasn't just only working there, but we came to be friends at the Savannah River Plant, but after we leave the Savannah River Plant, we was friends off the plant, and all that came from being employed at the Savannah River Plant.

So my wife and I did pretty good. We ain't have the best house in the world, but we're happy. We're living pretty good and we're eating pretty good. [Laughter] So that is what we--all that comes from where? From Savannah River Plant. A lot of peoples have profit from that plant. I think more people profit from it than died from it, and I don't think you're going to find too many people that work there will say nothing

bad about it. You could be in a conversation of peoples not working and they'll say, "Oh, that plant..." I walk in, I say, "Hey, what did you say about the plant?" I say, "Okay. I worked out there and I didn't see all what you see."

SG: You said that you were friends with people that you worked with off the plant.

SA: Yes.

SG: Did security and security concerns have any influence over who you were friends with?

SA: No, we have meetings, you know, security meeting. We know what to say, what not to say. We know what to talk about and what not to talk about. We didn't go spread out what I did at the Savannah River Plant. They say, "Some people call it the bombing plant. Y'all make bombs?"

I said, "I don't know. Ask somebody else. I don't know about that. I don't work in that department." So we know what to say.

They have the security meeting. They'll tell you, there are strangers, don't talk to strangers about what we make out there, which I didn't do it. So I'd be riding with these people when I was in the limousine, you know. They'd be asking. I'd say, "Well, I don't know, but you've got to ask the man you're going to report. I don't know about that." I said, "The only thing I know about, transportation drivers. I can tell you about the time at the hotels and stuff, but I don't know anything about that."

So that is how we kind of kept the safety, security. We didn't talk about that. We'd leave that plant, we didn't talk about that. And people wanted to know how could-see, when I was working, from the time I got there, seven o'clock, till I knocked off, the telephone or the radio [unclear], "How you sleep at night?"

I said, "When I come out of that gate, it's just like you click a light off. I cut that plant off, and I turn my other life on." That's the way I survive. If people see me, they wouldn't know I worked at the Savannah River Plant, because I take my badge off, put it away, put my thoughts of Savannah River Plant away, and picked up my new life. That is the way I survive. Safety. Now, I brought safety home with me, because I learned a lot of things.

SG: Did you learn that from Du Pont, or is that something you would have done?

SA: I learned that mostly from Du Pont, the safety-wise. And you embed it into a family, it'll stick with them. When they hired new employees and they come out of there, you didn't have to ask where your daddy or mama worked at. You could tell, if you worked at Savannah River Plant. You could tell by the safety, and you could tell if they didn't work out there, when you always had to teach them everything.

If somebody coming in and they tell another employee that he'll be here, I said, "Now, he's not a Du Pont or a Savannah River Plant employee family. You're going to have to take a look closer at him than you would so and so and so, so till you get him trained to be one of us." He might grab a ladder and walk to the top of it and get off, but if you're working with a Du Ponter, he's not going to do that. Or a Savannah River Plant man, he ain't going to do that. And that little things was way out in the field, which they didn't ever know.

See, we had to train them to move to these big jobs up there. When I left-I wonder how it is now-I had eighty-seven people I had sent names in for supervisor. When I left there, my supervisor, used to work for me, he said, "That's going to conflict," but it didn't conflict with me. He was the top man, but down at the bottom was where the information was coming from, through me to him, so he would never make a mistake. He's still out there. He calls me about once or twice a month. He ain't called me this month, but I'm looking

for him to call me after a while.

And I enjoyed working out there, and I hope it will be around for a long time, and anything that I can do to help them continuously, safety-wise, I'm willing to help.

SG: You've mentioned the family several times, meaning the family of the people you've worked with. Is that how you saw your relationship with your co-workers?

SA: Family. Yes, sir. As a family. I said, "We, as a family." And that was our family. That was my family when I left there. I loved them just like I did my kids. And every two years, our family, we have a family reunion, different places, maybe Augusta, Atlanta, Florida. I am the oldest grandkid—all the others are dead—in the family, so I always told them, I said, "Now, we, as a family, we've got to stay inside the pack. You see a bunch of wild dogs, they're all together in a pack. If one drifts away and go out, he get killed. Something will get him. But as long as you stay in this pack, we can protect you. But if you leave out, we can't protect you." My little nephew was down here Sunday. He said, "Uncle Shep, I'm still in that pack. I ain't going to leave that pack."

So that's what we did at the Savannah River Plant. We had these twenty-two peoples, and we stayed in there, we looked out for each other. And brother, you can go out there, it was good, because that was our family, as the family.

SG: The twenty-two people, that's the twenty-two in transportation, in T and T?

SA: Yes, and that blended over to other parts of CSWE and transportation. What we did, other supervisors started doing the same thing, and it's still working. We don't have no incident. That had one, a bad one, out there. It hurt me and I didn't work there. This year, a truckdriver, there's a body, drift up and hit the bridge, tore up the body, tore the whole truck up. Every day I would go to them—she was a woman driver—every day I would go to them. I said, "Make sure your power takeoff is out. Make sure you do this, make sure you do this, and make sure you do this." Remind them. I said, "Because you're moving on the road. The body start moving up, and you don't even know it, because you're looking ahead. You don't see what's behind." So that [unclear], and she went under that bridge.

I nearly about got run over last week. A truck was coming out of Aiken, a dump, one of them big trailers, and his body was coming up. I turned around and runned him down. I bet he thought I was crazy. I said, "Hey, man! Look, look, look!" And he was going to go up under that bridge in the next two or three miles and it was going to tear the whole truck up. So that's why I stopped him.

But I really enjoyed working for Savannah. Anything else you want to ask me?

SG: What are you most proud about, about your time out there?

SA: My most proud about was always working with peoples, the good that I thought I did for folks. I always worked in the way to not-to satisfy my boss. I worked to try to satisfy the peoples that worked for me, and the work they do would satisfy him. But you see, if I just go ahead and try to downgrade peoples just to satisfy the boss, I ain't doing nothing. I'm hurting these peoples. But I satisfied them, and whatever they want, I would try to help them, and they're going to do a good job, and that good job they do will satisfy my boss and the peoples above him. And that's my biggest problem, is peoples, because that was our biggest asset out there, was peoples.

SG: Your biggest access?

SA: It was the biggest thing we had out there was the peoples. If you didn't have good peoples, you couldn't

run the reactor, you couldn't run the separation. But you had to have good peoples. You've got to weed out the good peoples. You've got to see who will be able to do this particular job.

I had one gentleman working for me, I would think, and we have fished together now, George William, from Aiken. We call him "Gunsmoke." He didn't never—he didn't have no education, but he was one of the best operators that you would want, one of the best persons you wanted. He could do any type of job you'd give him to do, and do it good. So, peoples like that. Peoples that you would think everybody would cast off.

There were good peoples back there. I would take them peoples and bring it out. Like this boy here from Mississippi. He was way out in the field, a job about ten miles, and I sent a black boy out there in a truck—his vehicle broke down—to get him. When he went to pick this boy up, pick this man up and brought him out there, he brought him back in. So he was back in, so he had—the radio in that truck was playing, he had some blues or rap music or something playing, so the guy riding in the truck along with him said, "Cut that nigger music off." [Laughter]

So the guy got back to the building—I wasn't in the office, he came in there, and another guy was in there, a white named Kirby, so he told Kirby what this guy had said. So Kirby carried the man down—he didn't get me, he carried the man down, and they're going to discipline, going to send the man home for two days without pay. And so when I got there, I said, "I thought this guy is working for me. Why are you going to send him home for two days? Don't let them send the man home for two days. That man got a sick wife and a child. He was saying things that he heard people say years ago. Let me handle it. Y'all just get out of it and give it to me." So I got the guy in there.

You learn to control peoples with two things: fear and money. If a man got a lot of money, he controls peoples. If a man is scared of you, you can control him. You've got to get a little something on him. So I got that fellow out, told him, I said, "Now, Newby, I don't want to hear that no more. Don't say that no more. That ain't nice. Don't say that no more. You go and get your job and you go back to work." Never had no more trouble with him. Because why? I had something on him: fear. That was that one. I didn't have the money, I had fear. He didn't do it no more.

But you see, if I control people with money, they won't do it no more because they're scared you're going to cut their money off of them. And if you control them with fear, he's scared you're going to do something to him, then he's going to do what you say. So that's what you control him by. I didn't never, never have no more trouble with him, which I didn't believe sending him home.

And another man I had, he was rough. He tried to run over me with an end-loader. A white guy, from Maine.

SG: Tried to run you over?

SA: Yes. I stopped to ask him for some overtime, and he took his end-loader, run over there, "Get your black face off of me. I don't want to talk to you." Okay.

SG: When was this?

SA: This was back in—must be the eighties, '83 or '85, something like that. And they sent him home. I was on vacation. They sent him home. When I got back, he was home, so I told them, "Bring him back." They didn't send him home by [unclear], [unclear] did, because they didn't know about that. They brought him back, and he said, "I know they done told you what happened." I said, "Yeah." I said, "Well, you're going

to be working for me, but you know what, we sentenced you yesterday for what you did.”

He said, “You sentenced me?”

I said, “Yeah. Your sentence is, long as you work at this Savannah River Plant, you’ve got to look in my black face every morning.” [Laughter] When he left—he retired in ‘88—he cried and come hugging me. He said, “I’m so sorry, the way I treated you.”

I said, “I done forgive you. It’s all right. Me and you are still friends.”

So, that’s all. You got anything else?

SG: Do you have anything else you’d like to add?

SA: No, just the thing I added. I just enjoyed working out there and I learned a lot, the experience, and I hope I helped peoples along the way. And if I didn’t, if I hurt anybody along the way, I’m sorry. Savannah River Plant and DOE was a good company for this area. Not for one person, but for everybody. Everybody profits from that plant out there, and we hope for years to come it’ll be out there, cleaned up, and if we can ever be of any help to anybody out there, I’d be glad to. Peoples call me now, ask me where so and so is buried or what this and that and this [unclear]. Somebody said, “You ought to charge.”

SG: You ought to what?

SA: ou ought to charge them for telling. I said, “They pay me every day. When I get my retirement check, that’s my pay. They already paid me.” They made a better life for me and my family, and I think I owe them something for doing that. They didn’t have to hire me. They didn’t have to put up with me over the years. [Laughter] But I gave them my best. So that’s what I have to say. I hope I said something that helped you, anyway.

SG: I think you did. Just for my own information, T and T?

SA: Traffic and transportation.

SG: Okay. And then, CSWE.

SA: Central Shops Works Engineering. That’s the way they changed it, you know.

SG: CSWE, then. Central Shops Works Engineering. Okay. I guess, if you’re okay with signing the release forms.

SA: I’d be glad to sign them. Sure.

SG: There you go.

SA: I sign right here?

SG: Yes, sir. Right there.

SA: All right, sir.

SG: All right. Let me go ahead and turn this off.

**END OF INTERVIEW**

## Oral History Interview – Faye Baker

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Born in Camden, South Carolina, Faye Baker graduated from the local high school in 1950, after which she married her childhood sweetheart. Her husband worked construction at Savannah River Plant beginning in 1951, but Faye did not work at the plant until 1973. Before that time, she and her husband had moved to Augusta, and eventually lived in a number of places around the plant. In the eight years before she got a job at Savannah River Plant, Baker worked at Aiken Industries.

When Baker began working at the plant, her first position was janitor. Two years later, she transferred to Patrol, where she was one of the first females on the patrol force. In 1976, a position in Photography became available. A life-long camera buff, Baker jumped at the opportunity to take pictures and work in the darkroom. During her career as Savannah River photographer, she had occasion to work in almost every area of the plant, including many areas made dangerous by high radiation or excessive heat—areas that required suiting up for protection. Such areas included the High Level Caves in Building 773 of the Savannah River Laboratory, the tritium facilities in F and H areas, and the 400-Area.

**Interviewee:** Faye Baker

**Interviewer:** Terri Gillett, New South Associates

**Date of Interview:** May 24, 2006

Terri Gillett: This interview with Faye Baker is being conducted by Terri Gillett, Historian with New South Associates. It takes place on May 24, 2006 at Mrs. Baker's home. This interview is being conducted as a part of the Savannah River Site History Project, which is documenting the 50 year History of the site and its impact on the area. Mrs. Baker is being interviewed as she was a photographer and worked in Building 703-A.

Fay Baker: I started off as a janitor in October 1, 1973 and then I stayed in that for 22 months. Then I went into Patrol and I stayed in that about 6 months. I went through all my things, of learning to fire a gun and everything. Then I went, from there, I got an offer of photography. I went in photography, which the men did not want me in there 'cause I was the first woman. Well, they didn't want me in Patrol either, 'cause I was the second one and then Joan. Anyway, I was told that they were going to fail me as a photographer 'cause they didn't want a woman in there, but I got to working so good and learning so fast that the men that I worked with liked me because I did a lot of work that helped them out. I came from overtime one day and my supervisor, Bud Harvey, he was the supervisor at that time, he said, "I think they ought to do some of the overtime, because she knows how to do it, and my supervisor said, "Well, she has to do 350 pictures," which we did everything by hand at that time and Bud said, "Well she's done over 350," and he said "WHAT?" Bud said, "Well, you can count them if you want to." Because we had to do them by hand and then we had to dry them over this barrel-type machine. So, anyway, he disappeared for a few minutes and he said, he knew I flew an airplane in my early days, something I always wanted to do as a kid and my dad wouldn't let me. So after I went to work, I wanted to fly and my husband finally gave in for me to take lessons. So, anyway, he knew I was gonna go to a flying on Sunday. He told Bud, "She can't work tonight." That was on a Friday night. I said, "Well how about Saturday. I can come in on Saturday and work." He says, "No, you can come in Sunday, she's going to work." And I said, "No, I'm going on a trip in my airplane." So, anyway he said, "Well you can't work." So he disappeared. Well I went to the counseling about it, cause the men advised me to do it and I went to the counseling about. I knew that man's name, Mr. Nichols, and I believe he's the one that killed himself down at the lake. But anyway, the counselor said, "Yeah, you ought to be able to work overtime. You passed the grade now." So he went to see my big supervisor and he was gone. He'd left for the day. He told me, he said, "You can get paid for it because it would have been your time to work." And I said, "No, I don't do things crooked like that," I said, "Nope, maybe the next overtime that comes up, I'd be glad to work if it's when I can." So anyway, on Monday morning when he came in, the counselor went down there and talked to him. I can't remember the name of the counselor now. He went down there and talked to him. I believe it might have been that night or the next night or two. Overtime came up. Well, he had me working by myself, even though it's my first time overtime and Bud told me, "Now if you get into a problem you don't know how to handle, call me at my home, and I'll talk you through it." And I said Okay. So, I worked overtime that night and it turned out the pictures he wanted.

FB: Then another time, I was working for Ralph Reams. He was one of my supervisors. This man came in and said he wanted, I'd never worked in nothing but black and white, but I had went in and watched some of them do slides and color slides in the color slide room. He'd come in the print room, cause you have to do it total darkness and they pointed out the clock and how I can tell and he said, "Miss, don't leave the stuff in there," and so he come back in and said, "I've got to have the slides for this man." And he said, "Have you ever done slides?" and I said, "No, but I think I could." And so this is what he said he wants. There is one picture, cause all the other photographers were busy or gone, or they were out from work. I don't remember. But, anyway, I went I and done the overhead slide and I got it dried and everything. It came out and the man came and picked it up. And Ralph came back in and looked at it and he said, "No, I don't think you need that much yellow in it." I believe it was. And the man looked at it and said that's exactly what he wanted and it pleased me that I did it. Anyway, the man was very satisfied with it. So then, I went to the Lab to work, where they wanted a photographer for the Lab, because they didn't have one over there. They had a man working in reproduction, that took pictures, David Dominick. They were sort of outdone because they were going to send somebody out there as a photographer cause he'd been doing it all this time. And he was sort of mad, and especially when he found out a woman was coming over there to do them. So, I worked in the Lab for two years, after working there for I guess, a couple of years. I went into the Lab as a photographer 8. Herman Taylor, who was, he was an 8 in the color room. I was a 6 in black and white. Herman said, "Well I don't want a photographer because I'm an 8 photographer assistant over here and I make the same money." And they said, "Well now Herman, if a 10 comes open, she'll get the 10 photography job." And Herman laughed and said we were all around the same age. They'll never have a 10 opening, "I'm not gonna go." They said, "Okay, Faye you've got the job." Well, I went over there at first and Gary didn't sort of want me over there so I told him, "Now, Gary, you do part of it and I'll do part of it and I'll do part of your reproduction work and help you." You know, so that's the way we worked it for a while and Gary got to liking me because I did a good job. So anyway, I stayed over at the Lab for two years and I had put in for that money, you know, for cancer, because I got cancer of the nose. You see my scar, right there? They had to build me a new nose.

TG: It's a lovely nose.

FB: But, anyway, I was in there writing a letter to the Labor Union, because the Lady at Jacksonville said she didn't think I was gonna get it. I got me some bad jobs out there at the plant as a photographer. They said, they still didn't think I would get it, although when my daughter came by yesterday evening I said, "Well, honey read this letter and see if it sounds okay to you?" And she said, "Well, Mama, don't you remember, you didn't even put in there. You got radiation up your nose one day out there." And I said, "You know, I forgot about it" because that's when I worked at the Lab and I had went out on a job and I think it was in the High Level Caves of 773. When I got back, of course I had turned my equipment in, went on down to the office and a few minutes my supervisor came and told me, "They want you upstairs at HP office." I went back upstairs to the HP office. They told me, they said, "We found out that you had a faulty hard hat on that's the mask." And he said that, "We want to test you." Well, they tested me and found out I did have radiation up my left side of my nose here. I guess, 45 minutes to an hour, they took a cotton swab and swabbed out my nose with some liquid, you know and kept swabbing it out, until it

got so sore, I couldn't stand for them to touch it. My nose swole too. So, they finally stopped, but they go in the bathroom, took your hands up under the water and catch the water in your hands, suck the water up through your nose and spit it out through your mouth for a half hour. And so I did that. And I think that's where my cancer came from. But as a photographer, I was in some pretty bad places. I was up on a stack in the "C" Area, I believe it was and they had a release and I was up on the stack with two other EED men. I forget what it stands for, Engineering something, checking something in the stack with my camera and they had released radiation. Well, they had taken us up in a bucket with a crane. The crane had gone back to the ground and cut its motor off. Well, when they had that release, they rushed in there and turned the air off. We had plastic suits on and they took our air off so it wouldn't bring in radiation more. But they had to start the crane back up and it took, I think they said, about 5 or 6 minutes for that crane to crank up before it could come up there. So, two of the men, they came out of their plastic suits. They said they were smothering to death. I told them, I said, "Well, don't get too excited, you'll have more oxygen. I stayed in my plastic suit until the crane got up there. By the time I got in the bucket of the crane, I came out of my top, because I couldn't breath. And that was another incident. What else? I sat down one day and wrote down the different things that I had done. Let's see, well I crawled in every water pipe in the 105 from the outside, water outflow to the inside underneath the 105 Building and shot up and then I crawled in on the inside in my, when I was 20, and took pictures all the way down the pipes, to the drop-off and then took the pictures straight down and on that one occasion there was me and a man that was going in it and he told me, he said, he got in the pipe and then he said, "Faye, would you go in first? I got a little bit of claustrophobia?" and I said, "OK". So he backed out of the pipe and I got in first. We had a little cart we rode on, I mean pushed our equipment on and crawled in. So anyway, we got way down the pipe and all of a sudden we heard a whistle like, and it was construction someone on that pipe way down the line. They told me they didn't know we were in there. And it scared him so bad. He left me and he crawled out the pipe. He dropped his change he had in his pockets and everything and I went along with that cart, because you know, I wasn't scared of nothing back then and I picked up all his change and of course I went and picked up his rubber shoes he had on his lost and we came out of the pipe and that's when we discovered what had happened.

TG: Wow.

FB: But other than that, I've had some good times and some bad times there.

TG: Gosh.

FB: I've been in several incidents, you know. Well, here's the list that I. I took pictures into 105 at the Heavy Water Gauge Tank in towers. You had to wear a gauge pack on you back then to go down to the towers so you wouldn't get any of that gas. Well, one of the tanks was leaking one day, and they called for a photographer. Well, they sent Herman down there that day and he stayed all day with them. And then he was afraid to go in the tank 'cause they told him, they said, "Now if you don't wear your mask right now, it can kill you in just a second." So he was scared to go in and he didn't go in them. The next day they called for me, cause they felt I was a little daredevil. I went down and they asked me, "Now will you go in this tank?" It was 104 degrees that day, I believe this might have been in August.

TG: Wow.

FB: And, we had tried to cool down the tank with water, and we'd wash the tank out. But they said don't you dare take off your mask, don't let any air into your face because it can kill you in an instant. So the tank top was so little, it was just a little manhole, you know, at the top. And of course, I was a little bit smaller than I am now. And I remember going in that tank, and then they handed me, I had no mask on, they handed me my air pack to go on and I put it on my shoulders and then they handed me my camera and then they handed me my battery pack, cause it couldn't get it all in at one time. Two men, I don't know who, don't remember who they were now cause I worked with so many different people out there, they came in next and we walked inside that tank and took pictures trying to find the leak out of that tank. And then, we came out. Of course, I was soaking wet, cause I had on coveralls and all. But, while I was in that tank I thought one time, I said, "I'm gonna surely faint," because I am so hot I can't understand. And I reached up and caught the bottom of my mask and pulled it down just a tiny bit, so the colder air would go in my throat, although, they told me not to. And I told them I'd done it, they said, "Well the air could have gone back up the other way and killed you. And I said, "Well, it didn't, so we are okay." But that's another time and, let's see, I told you about. Oh and 200H, I went with two scientists. I can't remember what their names were. Of course, someone could look on the pictures. And I believe I labeled those pictures, "Guys Taking Off of Cell Block." I'm not sure, but I believe that's what it was. But I don't know the number of the picture or anything, because when Westinghouse came in, they destroyed a lot of our negatives. Like in the beginning, some of the pictures. And I think nothing should have been destroyed, but they did destroy some of our pictures. Now, I don't know what they destroyed, cause we even had glass, the size of our negatives were that big; 8 x 10 glass negatives. Anyway, they took the glass off of that cell, which has probably never been done again cause it was the first time they said. They took the thick glass off the cell and one was on each side. They set it on the floor. I stepped up and took one picture. I put my head over, sort of to the cell. Took the one picture, cause I had it pretty focused from how far down I was supposed to go, and stepped back and they said give the film to them. Well, I rolled the film back off and took the cartridge out and they took the film with rubber gloves. So I just got that one picture and they said lay your camera down on the floor. So I did. Said, "We got to bury it, cause it's even too hot for us to test."

TG: Wow.

FB: I buried about four or five cameras I guess out there, I don't know. So anyway, I was in a double plastic tent at that time in "H" area plus plastic suit, you know, and who knows where the plastic was, they must have tested it to see how much went through. Some of it probably did go through it. I thought nothing of it, cause like I told you, when the supervisor called me to do a job, I did the best I could. So, here are some of the other things I did. I had to whole body count in seven sets of three Labs once a year. I know it was once a year. I don't remember if it's more or not. I had to catch my urine in a jar and let them test it. I know two times, I don't remember if it was more than that or not, I worked in area 321, Triple 7, where they had test reactors. I worked in the waste tank; I'd go down and take pictures to see if anything was wrong with that tank before they put anything in it. I also worked with a photographer by the name of Leyton Connor. He's dead now. But, I remember one day we went down there and he had on rubber gloves and I was standing backed up a little bit, and he had rags around the pipes. They cooled up by the waste tank, and he was taking those rags and pulling off the water off that pipe they

were putting up and I took pictures. One time, they put me in a crane and put me over it, while he was working down there. Let me see, what else? I worked in fire boxes in 400 area. Stayed in them all day sometimes taking pictures; come out with soot all over me. In fact, my big supervisor one time, I kept telling him us girls needed a shower, and he said we could walk over to 321, I believe he said; anyway, 300 area, and take a shower. I said, we don't get back at any time to do that and then go home. So, one day I worked at the fire box all day long and I came in, where I had sweated and I wiped my hands on my face. You know how you'll do when you're sweating. I went in the bathroom and I looked in the mirror and I started laughing. I said now go show Mr. Greene, Tom Greene why I think that there may be something to have a shower. So I marched myself upstairs and went into Mr. Greene's office and I said, "Tom?" And he said, "What in the world happened to you?" I said, "Tom, I had worked in the fire box all day long, I want you to see the condition I work in and I want to tell you that's why we need a shower or something to clean up." And of course, I had to go out of Tom's office cause I was a mess.

TG: Did you get a shower?

FB: Eventually when they built the new building, 704, I believe it was 8A, I can't remember now; the photography building behind 703.

TG: Right:

FB: They did put up a shower in there and I used it several times. Let's see. Talking about working in the Lab, I worked in 235F, where they pressed two Plutonium buttons together. In fact, the picture used to be hanging on the wall and door down there. A big, red ball, I don't know if you been through any of that, seen any pictures like that or not. But I know they had a picture that big hanging on the wall.

TG: I haven't been in any of the offices out there.

FB: Some of them tell me that that's the way they had the Plutonium buttons, that they'd put them on these side lights. When the side light would go up, it would last a hundred years and then they would flip it somehow, and it'd flash another hundred years; that'd keep it from burning up, and coming back up. So I don't know if they were just telling me tales or what. I worked out in 235F and some of those jobs were very hot. I worked 80 hours in a plastic suit laying on top of a Reactor in the 100C lengthwise in one week.

TG: Wow.

FB: I started on a Sunday night at 12:00 and worked 'til the following Friday at 4:00. I lay on the board and I would take a picture through a scope with a 35 mm with a Polaroid backup. It wasn't a 35 at the time. I believe it was a Hasselblad. I had a Polaroid back on it, and when I got a picture like I wanted on it, you know bright shades and all, then I would drop my F stop two stops and then put my film cartridge on the back and take a picture. That way they were sure no one would have to go back and do double stuff. I took pictures in 221F and 221H with the camera by pulling a string. We had a hot camera that we had just for that job. It wasn't a Hasselblad; I forget what it was, but it was 2 and a quarter negative. We would stick it down through a manhole, and I forget what floor it was on, but I know it was upstairs somewhere, I don't remember, but anyway it was a steel pipe that camera was on. We had a string and we would pull it; we would lean to two different ways and pull it, take a picture and pull it back out the hole. We'd go to the next manhole and, usually those jobs lasted a day or two and it took two photographers to do it. I did that, which was a dangerous job for radiation.

TG: So it really wasn't quite as....

FB: It was to see if the walls were crumbling underneath. That was the purpose of it. I was put in a 50 gallon drum in one crane in the 221 Building in the "F" area, I believe it was, and they'd put me down through to 221F and the crane would drop me down between the pots, these big vessels, and I would take pictures of the walls, to see if they were crumbling. I worked in Tritium a lot. I worked in 773 a lot; in a high level cave. I worked black and white. I already told you that, when I first started; worked in color making pictures and slides and chemicals. I worked at the University of Georgia. I went out there one time to take a picture of a trap set for a coon the night before. We went out to the trap and they didn't have a coon to take a picture of him. Well, what they did, they went back and told me, "Well, we'll go back to 773. We've got one in the freezer. So we went back to the freezer, took this, they had it for testing, and they had him froze until they could get around to testing him. They took this frozen coon out, put it in that cage. I took the picture of the coon. They said, "Hurry up, take it before the flies get to swarming." I took the picture of the coon. That was real funny. You know what? I laughed a lot on my job. On some of the jobs I did, I believe it was in 105, we had these s badges that would read, not dosimeter badges, but a badge that would read a number of what you were up taking. We would write our name on a piece of paper and write what the uptake said on the badge. I don't know if those papers were ever taken up or not. I don't think all of them were; whether they thought it was hot enough or not. I did quite a bit. I really did enjoy my work out there, but yet it was dangerous work.

TG: I had no idea. I thought when you were a photographer, you would be taking pictures of people and....

FB: Oh, we did portraits of people getting supervised, I mean going in supervision. I took portraits, I used to, Mr. Granighan was the Plant Manager and he would let nobody take his picture but me.

TG: Oh that's.....

FB: But what it was, he'd come up and get the chair when I knew when I was gonna take a portrait of him. He had it once a year. He'd say, "Now I want a serious picture." What I did, was I'd take some of my make up along, because you know, you do shine sometimes, so I'd take some make up and put a little make up on his face and fix him so he wouldn't be so shinny or patted or something. He'd tell me, he said, "Now I want a serious picture. I don't want no smile on my face." And I'd say, "Yes, Sir." One time he came down to view his picture made and, it was towards the end of my career and his too, and I fixed him all up. I had my lights fixed. I said, "Mr. Granighan, " I was looking at him through the camera, you know, I said, "Can you say Sex?" He just smiled and he said, "I told you I didn't want to smile." I said, "That's alright. This is a portrait of you like a natural portrait. Seeing you when you're not so serious." Cause he was always very serious about everything out there. In fact, I had this black lady, she hated me because I, she didn't like that I flew airplanes. When that airplane crashed down at the plant that time, they sent me out to take pictures of it because they knew I knew something about instruments and what not. He knew I'd know one thing, you know that I'd take the instruments and what not. And then the helicopter crashed out there. She was my supervisor at the time. She wouldn't let me go out. She sent a younger photographer in there, I believe it was. I'm not sure. But she just hated my guts, and I felt when I was working out there, I would work as hard as I could to try and get everything up to date, you know. And that day, she was new. The times she spent there were a couple of times I think. Anyway, she was out and she was making slides. Well, I was doing my job in the darkroom and when

I'd get through with that, I'd run to her room and do her slides. You used to have to bring them out of the room and take them to the light table and look at them and frame them. Well, I was framing them as hard as I could and some of the them were just walking around there, not doing nothing. They weren't helping at all. Some young people, and I had told Irene, was her name, and I told her, I said, "That cord on that light table is gonna trip somebody one of these days." I told her that several weeks before that. Was those young people playing with the light table, they'd put their foot under it and run it up and run it down. Well, the electrical cord would curl around on the floor. Well, that day I was working so fast and I ran to the table to frame that slide and I thought, well, I'm gonna see if they will come along and frame some of these slides for me. So I left the slides on the table and turned around real fast to go back to the proof room to get some more made, and when I did, you know how you turn around real fast and sling a leg? Well, I slung my right leg around, it caught in the loop of that wire and it threw me to the floor. It knocked my breath out of me. I mean, I could not even talk, and it broke my arm. I couldn't straighten it. My arm is crooked. I went to Medical for a week and they said it wasn't broke. Well, this little nurse over there, she told me, she said, "Faye, I'm not supposed to tell you this, but if I was you, when I went home tonight, I would go and see a specialist about your arm. Cause my arm had swelled up twice as big. She said, "I see a chip out of your elbow here." So when the doctor came in, she told the doctor, "Now look here, there is a little place right here, I think her arm is broke." He said, "Well, let me go down here and get another doctor's opinion." So the other doctor came and he looked at it and he said, "Yeah, I believe she's right." So they had never offered to put me, they had what they call a whirlpool thing, sort of round looking thing with water going round and round in it, hot water. And so they said go put her in that water. So I went down there and put my arm in the water in the whirlpool. They came back and they said, "Don't leave now because we have called Augusta. We are sending you to the best bone specialist in Augusta, cause your arm is broken." So anyway, every time I would go over there, they would send this man with me to drive and he would just go in with me every time I went into this doctor. The doctor couldn't understand why they were sending a man with me. And so, the last time, I went for months to that doctor. He told me, he said, "Faye I cannot operate on your arm. I can operate on it, but if I operate, your arm would be like this. You can't get it back to your face. Now it's your choice whether you want to be able to bring your hand back to your face or have it straight." Well, I didn't want to be where I couldn't bring my arm back up to my face, so I told him don't operate. And I said, "You know, my supervisor," now this man wasn't with me at the time and I said, "My supervisor told me she was going to have me fired because of this." He said, "Why? It was an accident." And I said, "I know it was." And he said, "Well, if I was you, I would file for Workman's Comp on that. That way they can't fire you." I said, "How do I do that?" He said, "I'll show you." So he showed me what to do and I filed. I went to court. My safety Rep went with me. I can't remember that man's name, but he met me there. It was up there below the old hospital in Aiken. I went in there. The first thing I saw was this black judge, and I thought Oh My God, he's gonna say, you know. He shook my hand and he said, "I'm Judge Kenton." The first job I had I worked with this black man, very nice man, Joe Kenton. So I said, "Do you know a Joe Kenton, he lives down the country, I can't tell you what town he lives in, but he lives down south of here." He said, "Yes, he's my cousin." And I said, "Well, he's a very nice person. I worked with him as a janitor when I first came on the job." He and I talked a few minutes and he said, "Well,

Faye, now you can carry this to” , he interviewed me and what not, what happened and everything and what was so bad, she had taken pictures; had the photographer take pictures of the accident not like it happened, just like it was my fault. And I told the judge, I said, “Sir, those pictures aren’t true.” And I told him how I had come and put those slides on the table real fast and caught my foot in that loop. And I said that it threw me to the floor. That’s how I broke my arm. And I said, “I didn’t speak, I didn’t even say nothing.” And I laid there a minute before the ones at the front happened to see me laying on the floor and they came running and called the supervisor and all. They set me up on the floor and she said, “Do you want to go to Medical?” And I couldn’t answer, so I just nodded my head “yes.” So, she said, “Well, just go over there to Medical.” They picked me on up and of course, I didn’t have enough breath hardly to go, but I brought myself to Medical, which is in 719A. By the time I got there, I was feeling pretty good, you know. But it felt that a little air had gone out of my lungs at that time. I explained that to the judge. I really wasn’t able to go by myself, but she sent me by myself. She should have sent somebody with me in case I passed out going. But, I’m not one to faint very easily. I’ve never fainted in my life. The Judge said, “Well I’m gonna award you so and so much money for this accident.” And I said, “Well, I did not come for the money. I came to keep from getting fired.” He said, “Well, you have to take this or either you have to go to a higher court. Now, which one do you want?” I said, “Well, I’ll go ahead and take that,” which wasn’t all that much money. I came back to the building the next day. I was tough as sin. “Did they fire you? Are you getting fired or anything?” I said, “No. They awarded me money.” They said, “How much?” I said, “Enough to buy a car,” which it wasn’t. I just wanted to be funny and tell them it was enough to buy a car. I could tell a lie on that supervisor, but I won’t. See, I’m not that kind of person, you know what I mean? Alright, I don’t want to cause anybody any harm or anything like that. But, I did have some good times and I did have some bad times out there.

TG: Well, let me get some background information. Were you born in this area?

FB: I was born in Camden, South Carolina. I graduated in June 30, 1951 from High School. We’d been going together four years. He was born in April and I was born in June. I was that much older than him. I was 10 months older than him. But we liked each other very much, so I graduated on the first of June and we were going to get married on the first, but we had a snow day we had to make up. So we had to put it to the 30th of June, which was my birthday. He was in the Naval Reserves. They didn’t activate him at that time, but he had to go to just like guard duty, or whatever you call it, for two weeks just before we got married the month of June. He came back, and of course, he got back a day or two before our wedding. We got married. He worked for the Misty Grain Electric Company in Columbia. His mother, I don’t know, it was just like she didn’t like him. He was one of nine. He was the middle child, I think. Half the time, she’d keep him out of school. But he would take his books, go out and find the barn and study. He was a very smart person. He would sit at night and study electrical. He worked in electrical, and me and him would sit in the middle of the bed, we’d play cards a little bit. He would study electrical and he went with his brother-in-law, who was a teacher at the area trade school and he was also a teacher at the University of South Carolina. He would go to school with him and sit in the back of the class, because his mother threw him out at 14 because he was dating me and she didn’t want him to date me. So anyway, he was determined he was gonna learn and I would call questions out and he would write stuff down. I’d call questions out from school and he would answer them and I’d tell him

if he got them right or wrong. So he didn't get a degree in it because he wasn't paying, you know. He didn't go any further than the ninth grade. He made high grades in school. Then he loved to read the encyclopedia. He'd sit at night and read the encyclopedia learning and he love to sit with dictionary. He loved to be able to out-talk somebody. He'd love to use big words, and he made supervision out there. Before he could make supervision out there, they told him he'd have to take the GED or whatever it is, test. So he did to get his High School. He told me, you would be surprised. Those engineers out there come to me for advise because I learned the hard way. He worked in stores, building stores on that main street in Columbia, cause I used to go by on my way to school. I went to school in Columbia because I had missed some English and in order to graduate I had to get that English. I think I went on a Greyhound bus or Trailway, I forget which, to school everyday in the summer to get my, and I made A+ in English. Although, I don't talk like that now. Anyway, they would call here at 2 O'clock in the morning to ask him something about...

## SIDE TWO

FB: and go out there and fix it and come back home and go back to sleep.

TG: Is that why ya'll moved over here?

FB: While we were in Camden, he worked at DuPont Construction down on down there. Well, we left Camden and came down here in '51. We lived in a room in an old Hotel on Broad Street over there in Augusta. It's torn down now. Where Fifth Street goes across Broad Street, there was an old hotel there. We lived there. I stayed at the window during the day and all I saw was the Paddy wagon coming around picking up the drunk women with little babies. They'd take the babies away from them and throw them in the Paddy Wagon. They were drunk. It scared me to death, because I hadn't been around nothing like that. He'd ask me, "Did you eat today?" And I said, "No, I was too scared to go out." He said, "Well, you gonna have to eat or you are gonna have to go back home, cause you are loosing weight." And I said, "Well, I'll go back home, cause I'm not going down that street. I'm too scared." In fact, I went down the street one time with this lady that was in the hotel. A lady told her I was up there and come to find out she was nothing to her. She was just a tramp, because we went into this restaurant and these two men wanted to sit with us and I said "no" and she said "Yeah." And then we walked back down to the hotel and she walked off with that man. She said she known him a long time. She didn't know that man. The man in the hotel told me, he said, "I want to congratulate you. You seem like a fine, young lady." I said, "Well, thank you." I went back home. So, then he got me up and we moved to Williston. We lived in Williston, I believe, 8 or 9 months and they offered him a job in operations. But he didn't think it was enough money. So, his brother-in-law was going to Oak Ridge, and he was with Raysville. So, he said I'm going with Everett to Oak Ridge, if you don't mind. I said Okay. He said, "If I can't find you a place to live in 6 weeks, I'll come home." I said Okay. So he went to Oak Ridge and he told me, no I think he wrote me a letter that week. He told me, "The only thing I found was an apartment with a pair. I knew you didn't want that." So he worked there 6 weeks, came home, went back out to the plant and asked them could he have the job they offered him in Operations. They knew what he did in construction and they said, "What you got to do is go back to Oak Ridge," and this is on a Monday,

he said, "You have to turn in your notice and then come back next Monday back here." So he did. He went back to Oak Ridge, turned in his notice. It was less than a week, he came back out here and they told him, "We can't hire you today, but we will be calling you." He said Okay. So we went back to Camden. Back then you didn't have many phones around. My mother had a phone, but his parents, he had a step-daddy and a mama. They didn't have a phone. And that particular day, these people from the plant called. And I said, "Well, he's gone down his mother's and she doesn't have a phone." They said, "Does he still want the job back?" I said, "Yes, he does." They said, "Well tell him to report Monday morning." That was on Friday evening now and Bill came home from his mother's to see what was going on and came back. I told him they call and that he should report to work Monday morning. We got in the car, came to, let's see, we had lived in Williston, we came to Blackville cause the houses were cheaper to rent and they were bigger houses. We rented a house; went back to Camden and got my daddy's truck and on Saturday morning, we moved to Blackville. His brother moved across the street. They lived in Williston and moved to Blackville when they heard we were moving to Blackville. We lived across from each other both places. We stayed in Blackville for four years and we would have stayed longer, because it's very, very nice town. I liked the people; I liked the Church, but the water was awful. You couldn't hardly run a bath water without it smelling so bad, you had to get out of the bathroom. At Blackville, we moved over there in '57 on Jules Street in an old house over there. We stayed there one month because the bugs and rats were so bad in that house and I told him we couldn't stay here. My cousin, who was also my sister-in-law, she told me, she said "Well the lady who lives across the street from me said this lady's moving in her old house, where she moved from and the house across the street on Jules Street, the other end of Jules Street, she said it's coming open. Why don't you go down and see about renting it. I did. I went down there and we rented it, and it had bugs bad, but we lived there for a year, from '57 to '58. And then they had build some houses on Forrest Circle, here in New Ellenton, and Mr. Coneilson, I was talking about, you know, about how bad our house was with bugs and he said, well, why don't you buy a new one, in the store one day. And I said "Well, we don't have the money to buy a new one." He said, "Well, you can get it for no down payment and make monthly payments on it." I said yes. And he said, "I think I have a house for you." This man, and I forget what his name was, was going to moved out of it because he had something wrong with his equilibrium, and the front porch steps were coming down steep and he was scared he'd fall out. He'd walk into the side of the door and stuff. That man worked out there too, but I can't, it seemed like it was Ray, but I'm not sure. But, anyway, I went over and looked at the house. And I said that this house would do as a starter house, you know. So, I went back home and when Bill came home, I said, "Bill, why don't you go and look at t his house." He said, "Now you know we can't afford to buy a new house." I said, "Well, it's just one year old and this man said I can get it no down payment and just start making payments on it. You can go to the bank and help me get it. It'll be \$10 cheaper than what we pay in rent now." And he went over and looked at it. Bill was a person, he was always afraid to venture too far out, you know. He said, "Well, I guess we can do it then." So we closed the deal and we moved over there from '58-'78 over here. My dad lived near his business in Camden. But the way he left it, he left everything to my mother. When she died, I could take over her business. My mother rented the place out and she told me, she said, "Faye, the people that's renting this business, they just tearing it up. I want you to sell it." And I said, "No,

Mama, I'm not going to sell that business." She said, "Yeah. I want you to sell it, because it's hurting me." So, I said fine and we went and put it in the paper, and of course a man from DuPont saw it in the paper and he told me that DuPont out here, I was working at that time, he said, "I want to buy your business." And I said okay. So, that was why 20 came in. It was on Number 1 Highway and it was a good location. I sold that business to that man and I said to my Mama, here's the money. She said, "No. I told you to sell that business and build you a home like you want." So that is how I got this home here.

TG: Okay.

FB: So, I told Bill, "We gonna build a new house." And he said, "No, No, No." And I said, Yeah. I'm going to pick out a plan. Do you want to go with me? And he said No. So I went and picked out the plans. Went up to Aiken; went with the man to look at the plans. I looked at two plans that I liked. I brought them back and showed them to him. And I said, "Now which one of these house you want. I'm gonna have this house built. If you want to move with me you can." Cause he was the type, a big child. And he said, "Well, I sort of like this plan," So I said Okay. So, anyway, we had this man do them, plan them up, you know what I mean. Me and Bill worked on this house ourselves afterwards. This man told Bill that if he's wire his house, he'd help us paint ours. Well, Bill wired his house and he asked t hat man when he was gonna come help paint the inside of the house. He said, "Well, I don't have the time. I'm working on mine." And he never did come and do any work on the house. But, anyway, we got the house built and all and we moved in. I was at work and he was on vacation. It was a week before Christmas. I came home one day and all the furniture was moved. So I came on over her to look, you know. And Bill said, "Oh, I moved us today." And I said, "Well you should have waited until I could tell you where to put stuff." It was ok, you know. I had told the man that drew up the plans that I wanted some big rooms, because the other house had real small. It was a 5-room house and I raised three girls in it and then I had the boy. There were four kids.

TG: So is that what you did until you started working?

FB: No. I was working at that time.

TG: You were working with all the kids?

FB: I was working at that Plant, and taking care of the kids. My kids, I taught them to cook early in life. In fact, I taught them to cook so early, that one day I came home from work and wondered why all the windows were open in my house. I came in, the kids were cooking French fries, the telephone rang, one of them went to answer the telephone. They forgot about the French Fries and caught my kitchen on fire. And that's why all the windows was up. Bill had to re-do the top of the ceiling in kitchen and it burnt one of the kitchen window out. I had just put up new curtains in that window and those all went up. But what they did when the kitchen caught on fire, they grabbed a frying pan and tried to take it to the back door to pour out the grease. Well when the air get that, it just sort of got bigger. Well, instead of throwing it out, they ran back to the sink and poured the grease down the sink. And that's how it caught my house on fire. They learned to cook real early.

TG: You started out there in '73?

FB: I started in '73.

TG: Okay. Did you work before that?

FB: I worked at Aiken Industries in Aiken for 8 years. I went to work when my older boy was 15 months old. Miss Porter babysat for me. I took him to her everyday and the girls were big enough to stay in the house, when they got home from school and all. So, anyway, we got along pretty good. I just thought. I quit out that, I didn't quit. They were gonna lay you off. I didn't take an interest, so I just went ahead and quit, cause I wasn't making, I think, but a quarter an hour. It wasn't very much; it was minimum wage and I asked for a five cent raise, I remember and they wouldn't give it to me. Well, a neighbor of mine worked up near Skinner's, which was a factory here in town. They made the same stuff like clothes like we did. And she called me one night and she said, "Faye, would you like to come down here and work." And I said, "Well, I'll think about it." And she said, "Well, you wouldn't have no gas, you know, and worry about a car getting to work." Which I drove an old car and it was all to pieces, to work, and rode with a carpool for a while up to Aiken. And so I said, "Yes, I'll come to work for you." And I went to work for Skinner's. I worked probably 6 months and they started closing the Plant, laying off, you know. Well, just before they closed the plant, I was off on Fridays and I went out to the Plant [SRS] and put in an application. It took me, I believe, 8 years to get on out there at the Plant. I'd go out, towards the end I went out every Monday that came and I thought if they weren't hiring me, they were hiring everybody else; I'm gonna aggravate them to death. And I went out there every Monday. People that knew me, three people, they wanted to know. And I was talking to this lady, she lives over on Fern Street. And I told her, I can't understand why I can't get on out there. She said, "Well, I'll find out because I know Hoagy Griffith. I'll find out why he hasn't hired you." And she found out that I had put Cork Berry down, because Bill had done a lot of work with Cork and electrical on his refrigerator and different stuff. He hadn't filled out the paper on me that they sent in. So she made him fill it out and she carried that paper to Hoagy, and they called me again, you know to come work. So, that's how I finally got on. But, I did go out every Monday, I guess for two years. Every Monday that came, I was at; in fact, they told me not to come the next Monday. And I said, "I will be here every Monday and you will have to take up a few minutes with me, each time I come out here." And that's how I finally go on with. They recommended me.

TG: So, your first job, you were a janitor out there and then you went to Patrol?

FB: I was a janitor for 22 months. I walked all through the 105 Building, which they said that's where I got my radiation from. But that was not where I got my radiation from. I don't, I'll never believe that. Because then, I was a photographer of patrolmen and I was down there with a little radiation because I walked through the 773 Building as a patrolman. But then, when I was a photographer, I really got into hot stuff.

TG: Right. Right.

FB: A lot of people don't think the photographer's jobs, well they're not nowadays because they have, oh what do they call them?

TG: The little remotes? The robot?

FB: Robots to take the camera and take pictures and stuff like that. Robots do it a lot. Plus the people that's working has this little computer cameras, you know, and they take a lot of the pictures now.

TG: Right. Did you like being a patrolman while you were a patrolman?

- FB: I loved being Patrol; I love shooting. I loved to be on that shooting range. In fact, the first test that we had, we dry fired to start off with. Then we went to the range, you know, outside and we were gonna fire our pistol. I was thinking, now, what did that man tell me to do? And I said, "What did you tell me to aim this pistol and get it in the, you know we had pictures out there with rings around them and whatnot, and I said where did you tell me to aim this camera to get it in the bulls eye. And he said, "At the bulls eye," just like that and laughed. And I thought, I believe he said in the room to aim it just a fraction lower. So, when he told us to fire and whatnot, we fired and we had so many bullets in each gun. And we fired our guns, and I was the first one to finish. I based my gun like we were told and he likes, and said "Come on boys." I was one woman out of 17. The rest of them were men. He said, "Come on boys, we gonna go down here and see what Faye's done." Well, he went down there, and I had every bullet in the bullseye.
- TG: Great.
- FB: He said, "It looks like you could be on a Pistol team, if you keep up that good work." And then he said, "Let's see what some of the other boys did," and they didn't hit the paper at all down there.
- TG: You think they were trying to get women on the Patrol Force at the time that they hired you? How did that go about?
- FB: Yeah. I think so. Well, It just came up when DuPont had it. You went according to seniority. You could choose your job. Something came up. Just like I was a janitor. Well, Patrol came up and my supervisor as a janitor, he said, "Faye, you have checked everything on your card. Did you want to be everything, except the doctor and nurse?" I said, "Sir, If I had the education in it I would have been that too." And he got on me for being so good at janitory. He said, "I'll never find anybody to replace you, I don't want to you to do as good as you been doing." But, I kept right on up. The people, all the supervision, loved me because I used polish on the wood desk. At that time, they had wood desks out there at that time. The room smelled good when I left; I always spray in the office. They used to say, "Boy you can tell when Faye's been in." When I got the job as that, one of the operators had put in for the job and he had health problems. So he went up first. Well, they sent him back because he had health problems. I don't know, I must have been next to be going up. Anyway, I went up for the second day of schooling and they measured me for my uniform. I had a very tiny waist at that time and all, I had a good shape and they said, "We're gonna have trouble. We're gonna have to have the seamstress take up the uniform for you." But they found a uniform that fit me perfect. I loved being a patrolman.
- TG: What did you do? What was some of your duties?
- FB: I worked on in 703 most of the time and 773, and 700 daily. Some of my duties was I'd work on, I believe it was gate 9, that's were the trucks would go out with the radiation stuff and I would have to put the seal on the truck before they left, so they'd make sure nobody opened it while they were gone, 'til they got to their destination. I just checked people in and out with their badges. You know, whether they were nuclear or just a yellow badge. I worked at the front gate some at 703. I worked at night, way out in the field sometime; and I worked at Gate 2 a lot of nights because this black man, he was scared to work down there because there's this little cemetery down there close to that gate and he would always ask me, "Would I work in his place down there." And I worked on that gate all night long down there. I worked when they had deer hunting. I would bench their gun and one man remarked, said, "Oh, she's

a woman, she don't know what she's doing." The captain spoke up and said, "I beg your pardon. This lady knows all about guns," because I had shot a pistol. I had shot a shotgun, which it had raised me up off the floor, I mean off the ground quite a bit. And I'd bleed all from it because I didn't do it right like he told me to. Hold it tight. I shot automatic rifle, you know that you just keep on shooting as long as you have a thing. I shot that and made a good grade. I did anything the men did. Stood post; checked badges, checked packages. Whatever, they told me, you know. I went out one night, they sent me out the cave area, because somebody was out that night. They sent me out there. It was real, real foggy that night and they called out there, the badge site, and told them "Tell Faye not to go out in the night cause it's too foggy. There might be an accident. And the man said, "Well, she's already out checking the gates around the fence, all the way around." And they said, "Weren't you scared?" And I said No. I never was scared of the dark. I came back in. The patrolman was there and he said, "They called and told me to tell you not to go out and I told them you were already gone and they said for you to call when you got back, make sure you got back okay." So I called up front and told them I was back and I was safe. I mean, I'd do whatever they told me to do.

TG: Right.

FB: You'd go down the hall, and we had latch key things. We had to put a key in to prove we had been there and checking throughout the buildings.

TG: Why did you move to Photography from Patrol?

FB: I was a 1 as a janitor. Well I went from a 1 to a 10 in patrol.

TG: Was that like a pay grade?

FB: I went to a 10 in patrol. Well, a 10 has priority over a smaller number. A photography job became open and I'd always loved cameras. I got a camera for my, I guess, 8th birthday, when I was a kid. A 6 job came open in photography and I thought, now that sounds neat, the opportunity, that sounds neat; I would love to learn it because I had a good friend in High School's father took my wedding pictures and she worked in the studio with him. I thought that could be a neat job. Anyway, that's why I went into it because I just thought I would like it.

TG: Okay.

FB: But, I really liked Patrol too.

TG: So, when did you learn to fly a plane?

FB: After I went to work and making good money, I'd always wanted to work. I was in the kitchen one day at work in 105 Building and these men were talking about flying. And I said, "Oh, I have always wanted to learn to fly an airplane. They said, "Well, we was going to school and flying now. Why don't you come on out there?" I said, "I've never been up in an Airplane. I've never flown in one." They said, "Well come on out and we'll take you for a ride," this one man said and I said Okay. "Come out Sunday Evening." I told my neighbor. I said, "Now I'm gonna tell you," Her name was Luce Patton. "This man I work with, we were talking about airplanes and I said I always wanted to fly one and he's going to school out there learning to fly. All of these men are and I wanted to learn. He told me to come out and join the Flying Club. So I said I've never flown before and he said come on out and I'll take you up." Well, I went out to the airport, instead of going to Church that night, and I told her, "If we should crash, would you please tell everybody in town that I wasn't stepping out on my husband or anything. I

was just going for a ride" And she said, "Yes, Faye I will." So anyway, he took me for a ride. He went over to the river and circled the river and he went back to the airport. I didn't know he didn't have his license, but that's why he wanted me to come out at 6 O'clock, because he didn't think nobody would be checking. So anyway, I came back, and I said, "Luce, that is the nicest flying. You've got to try. That is just wonderful. I don't know how to ask my husband about it, because he didn't know I went out there. I slipped and went out there, cause he probably would have said no." And she said, "Faye, why don't you tell him that these men are talking about flying and you would like to go out there and take a ride with one of them. Ask him to take you again." And I said, "Okay." So I asked Bill. I said, "These men are talking about flying and they said they'd give me a ride. I said I'd never been in an airplane before. Do you care if I go out there and take one ride?" He said, "Well, go ahead." And I said, "Okay." And I went out there the night at 6 O'clock. When I came back, I said, "Oh Bill, that was the best flight I've ever, the best thing I've ever done. I've always wanted to fly. Tameta Rice Whiting from my home town flew an airplane. She could fly the airplane and I could fly the car. She didn't drive a car. And I said, "I would like to take lessons." And he said, "Oh, no." And I said, "Well, Bill, you know I never have said anything about money you spend, but I'm making money now myself, and I will pay for it if you will let me take flying lessons." He said, "Well, Ok." He thought I would go out there and quit, you know. And I went out there they told me to see this one man, Bob Brown. He's dead now. He died of cancer. He worked out there for 15 years. I never met him. Well I went out there. Bob wasn't out there the day I went out there. It was on a Saturday, I think it was. This other man, I flew with him one lesson and I thought, well now he's doing most of the flying and he's not letting me do. I went back to work and I said, "You know, I don't think I'm learning anything from this man." And, I don't remember his name now, I believe he might be dead now because he's new from Aiken. Anyway I went out the next Saturday; I went out there and t his man came up to me. We were all sitting on the steps watching the planes fly on Sunday evening, and he said, "Can you fly an airplane?" And I said, "No, Sir, but I would love to learn. I took one lesson last week, but I don't think I learned anything from this other man." He wasn't there, you know, that evening. I said, "The boys tell me to fly with a Bob Brown." He laughed, he said "I'm Bob Brown, but I don't want to take you away from this other instructor. " I said, "Well, I will tell this other instructor I want to try you too and I'll just keep on with you if I like your teaching." And he said, "Okay," So he went up with me and he let me do a little bit more and a little bit more. So one day, we went out and he said, "I was gonna let you solo, but it started raining. I know you can do it. So, may next time or two." And so the next Saturday I went out there and he went up with me and we made two passes around, landing and taking off. He said, "Faye, park that plane. I'm gonna let you solo." And I thought, Oh, God. Anyway, he got out of the airplane and he looked back at the airplane and I had my head bowed. He said, "What are you doing, Faye. Are you that scared?" I said, "No, Bob, I'm just praying to God to let me to up safely and let me come back safely." He said, "Now, you're not scared?" I said, "No, Sir." So, I soloed that day. I believe it was my 42nd birthday or around there. I just love flying. I flew until later, when I had a little bit of high blood pressure. You know you have to take a physical every year, I believe it is.

TG:

For your pilot's license?

FB: For your pilot's license. Anyway, I started flying and then he said, "Faye, I want you to fly with some of my students, cause of them cannot land. You did so well in landing. Would you fly with me? Sometimes it takes a different person to go up with them to give them confidence." I said, "Sure." So that's what I did with him and his students. Since I had my license, I would go with them and I said, "Now, easy." And I would tell them what to do. I said, "Now ease back real slow." I'd talk to them the whole time, and they would land the airplane. But, I just enjoyed. I'd be on little trips and then I met this lady that flew. Her name was Martha North. She moved to Athens, Georgia. Now I still visit her. She was a really good friend of mine. Miss Bobbie had died. So Martha and I got real big and she moved here. Her husband was an Air Controller in Texas. He died. They had seven airplanes. He was an instructor also. She sold all the airplanes except for this one airplane, air coupe. One day, I went in the airport. I loved to meet people and talk to them. I said, "Hello. I'm Faye Baker." She told me she was Martha North. I said, "Do you fly?" And she said yes. I said, "are you going to fly today?" and she said No. I said, "I'm just waiting. They're supposed to be bringing my airplane. This man's supposed to fly my airplane here from Texas. I'm just waiting around to see if he'd get here anytime soon." So we got the planes. I was in one crash out there cause we flew it up, not me and her, but me and Mr. Lambert, who also worked at the plant. We took up a sail plane one day and cut it loose. We were too high to land, so we spiraled down four times, which you are never supposed to spiral but three. We had air locked in the gas and the motor quit on us. We never realized, we never had no motor until we were going in for a landing and couldn't make the thing, we didn't have no motor. And we totaled a Civil Air Patrol Plane. But we were okay. Then one time she and I were going on a trip, one Sunday, and her airplane had been worked on the week before. We had been up on Saturday and tested it and we thought it was okay. Well, we left that Sunday morning, and the radio wouldn't work. Well, I got the fiddling with the radio trying to get it to come on and we started smelling something and it got worse and worse in the cockpit and somebody had to open the Cowling to breath. And she said, "We're going to have to land this airplane somewhere." I said, "Well, we'll land here, Columbia Metropolitan Airport." She said, "Oh, you have to have a transponder to land there and we don't have a transponder." I said, "That's alright. In case of something like this, we can land anywhere." Cause Bobbie told me. She said, "Well what are we going to land on there, runway or what? Cause we can't talk to them." I sand, "Well, if there's another airplane coming in for a landing, we'll land on the grass. If nothing is in sight, we'll land on the runway." So we landed on the runway and went in. The people in the tower called us to come to the tower and said, "Don't you ladies know you cannot land an airplane without a transfer?" She said, "Sir, my husband was an Air Controller before his death of a heart attack. He taught me to fly. Yes, I know that. But in an emergency you can land anywhere." And he was real nice to us after that. What happened is, they had forgotten and left a screw off and the exhaust was burning down the side of that cloth airplane. That's what we were smelling. We had to leave the airplane at Columbia Metro and catch us a ride with another fellow in a Tiger Airplane. He was coming this way and said I'll just drop you two off. He put his airplane on autopilot and we came on in. So, anyway, I mean I've been in several little accidents like that. I don't know. I was just, I wouldn't say daredevil, but I was a go-getter. And I just enjoyed flying. And so I had to learn how to fly. Me and this other fellow, we bought an airplane together. I went to Great Union and borrowed my part, and he did too, and we bought this

airplane together. We flew everywhere enough to pay for the airplane. You know, payments on the plane. We did alright. I just enjoy life.

TG: You remember when they announced the Plants, was Camden close to here? Where's Camden?

FB: It's a hundred miles from here.

TG: Was there a big to do when they announced the Plant?

FB: eah. At Camden, DuPont had three factories. Orlon, Dacron, and Nylon. Of course, he worked construction then. We were at home. We came home from service on weekend, and they had an explosion over there, a chemical explosion. They never did find the tanks. They must have landed in the river. It scared some of them so bad that they never went back to work. I mean that's the biggest fire I had ever seen in my life. We were sitting down to supper. We were just sitting down in our chairs and putting the plates on the table. We jumped up from the table, that's how that explosion did, cause we didn't live far from it. That's how we really got started, was at Camden.

TG: With DuPont?

FB: With DuPont.

TG: And so, they announced the plant, they announced the Savannah River Plant.

FB: Yeah.

TG: Everybody excited?

FB: Oh, yeah.

TG: What was your opinion about DuPont and the company?

FB: It was the best company I have ever worked for in my life. My husband said so too. You had seniority according to when you came to work. That way you could learn if they had lay offs, how far down the line you were. They laid off one time after I went to work and I missed it by 13 people. But they laid off according to seniority. And you could transfer from one job to another according to seniority. I liked that because you could find something that you would fit in that you really liked.

TG: What about when Westinghouse took over?

FB: I did not like Westinghouse. They didn't go by seniority. They were real bossy. Although you'd been on the job for years, they acted like you didn't know anything. They would bring their people in as supervision that didn't know beans about what you were doing. But you were supposed to do what they told you, you know, and as a photographer I went about my job. They would call for Faye Baker. They went on the job. You know what I mean. When Westinghouse came in, it was different. I don't know, I just didn't like the way Westinghouse operated. You had no seniority, not matter how long you've been on that job. They laid off who they wanted to. And I think some of them deserved it because, the way you worked and all, but still, like you wanted to buy that new car and you didn't know whether to buy that car; whether you could pay for it or not.

TG: Right.

FB: And I like the seniority stuff.

TG: How much did you, when you started working out there, was it already pretty known what they were making out there, what they were doing, or did you know...

FB: Nobody knew nothing. I didn't even know what my husband was doing. We talked about it none.

TG: None?

- FB: None. In fact, I didn't even talk about my work; and of course, he knew I was in what department and later I knew what department he was in, but he and I never discussed our work at home or to nobody else.
- TG: Interesting. Some of these questions don't apply to everybody, so I'm trying to get through them. What was the attitude about safety at the Plant. Do you think you were safe out there?
- FB: Well, DuPont, I think we were very safe. They would out and check behind you, you know. I think we were pretty safe, although, once in a while somebody would have a little mishap or something, but with Westinghouse, I did not like the safety program.
- TG: So, It changed a lot?
- FB: It changed quite a bit. And just like, you know, one day Bill came over to me, "You know what? What was that man you were working with?" I was working with this man, we called him "rag heads" because they wore those little, I guess, Arab hats now. He said, "What did you take pictures with him today? I heard you were out there in 3M." And I said, "Well, Bill, we went there they were building the new stack to the new Tritium Building." He said, "My God, he's got a red badge on. He wasn't even supposed to know nothing about that stack." And so he went to Burt the next day and pitched a fit about it because he said that man should not know nothing about that, in that stack you know. And Monday came home and he was so upset, that he said, "I looked out the door today"

## END OF TAPE ONE

- FB: "I looked outside the door at Tritium today and saw these men were digging with this machine." And he said, "I go sort of upset because I knew there were a lot of electrical wires underneath where they were digging. I stopped them." They said, "Well what are you stopping us for?" "And I told them, do you know you could be electrocuted in just a few minutes?" And they said why? He said, "Well, we got a lot of electrical wires right under where you're digging." They said, "Well, how do you know?" He said, "Did you not go get a plat to see what was underground." They didn't know what he was talking about. So, they asked Bill, "Well, where do you go?" He said, "You mean to tell me, you don't know where to go to find stuff?" and he told them where to go, to 700 and look in so and so. He said it's dangerous, because some of these people are educated enough to know what they are doing out here. Westinghouse, I don't know, he worked two years with Westinghouse and he came home one day and he said, "I can't take it any longer." He said, "Would it be okay if I retired?" And I said, "Yep." You know, he could retire any time he wanted to. I said, "I'll keep on working," So he said, "I'm going in tomorrow and telling that's it, I'm going to retire." So he went in and he told them he was retiring because, he said, "I just can't take it any longer." He said, "Even the ones they got teaching, like the electricians that was teaching these kids that's coming in. They know not enough about it to be teaching, but yet they're teaching. And when they come on that's when they learn.
- TG: Right.
- FB: But, that Monday, you know, just like in photography. There was four men, photographers, I made the fifth. I was the fifth one down the line. Then all of a sudden, this girl comes from one of the computer places. I don't know really where she worked. She came over and started working. Well, when she

came over and she went back and told these other girls that worked with her about photography. They all came piling in there. And there was 3 or 4 of them that came in there. And then they came in as 6's. Well, when I started, I worked as a 4. Then I went to a 6 and then an 8 and then a 10. I went up the line. Well, they got to fussing, cause they said they were doing work and they thought we were going out in the field and having a good time, you know. But they didn't realize we were having to walk so much and go in these hot places and what not. They wanted to go as a photographer. So Westinghouse made all of them photographers; made all of them the same grade, cause they told them they were doing the work. But they didn't realize how bad our jobs were. Well, after they made photographer, then they came back in. They wanted to be back in the darkroom. They didn't want to go out. So, that, to me was wrong. If they made photographer, they should have been out in the hot jobs just like we were. In fact, the first one I took out, her name was Sissy something. She'd been married so many times, I can't remember now what her name was. But, she went with me on a hot job, I believe it was back in 221F. I can't remember the building name now. I said, "Now, you're gonna have to get in a plastic suit to do this job." Well, she got in a plastic suit and he told her what step to take and she went up and took the picture and what not. Then she came back and he had to cut, you know they have to cut down the back of your plastic suit, so you can step out of it. She started twitching her butt and he said, "Oh No. Don't you do that." And he had to get on her good, you know about that cause to me they were out to look, you know, men, cause she at that time had left her husband. You know what I mean. You know. Then she married, what was his name? Bill, I can't remember his last name, but he worked out there with Bill's supervisor. She drank a lot. She would go out at night and stay out all night drinking, and she'd come in the morning and she'd go in the darkroom somewhere and lay down on the floor and sleep. But she got by with it, because her and the supervisor was very close. Stuff like that I didn't like.

TG: Right. What about the attitude toward security at the Plant, between DuPont and Westinghouse?

FB: I think it was good, really.

TG: About the same, the security issues?

FB: With Westinghouse and DuPont? I guess it was about the same. All I needed was going through the guards, you know, and I was checked. I didn't see that much difference. And, talking about people, I knew another couple that worked out there early, but he's on his deathbed now with cancer. They looked for him and he died two weeks, I mean a month ago. They gave him two weeks to live and he's still, and he's unconscious, I think, now. And she's in bed too with cancer. Although she didn't work out, you know, she was out in reproduction out there. But it seemed everybody I know has been in bad shape.

TG: From the job?

FB: Yeah.

TG: So you think that....

FB: Since I left work, I've had two strokes. My left leg, I got it back to walking pretty good. Then my right leg, it seemed like there was swelling in my knee and all. I've been to bone doctors. I went to one bone doctor and he couldn't find anything. He really didn't go deep with it, but I never did go back and let him checked out anymore.

TG: Right. So, you think your health has definitely suffered?

FB: I know my health has suffered, getting bad from it. Just like I told you. The Lab where I got the radiation, and I forgot when they talked to me in Jacksonville. I forgot to tell that girl, (pause) -that's a squirrel on top of my house - I forgot to tell them, that girl in Jacksonville when she talked to me on the phone telling them what all I had done, you know. I forgot to tell her about my nose getting radiation up my nose and they took a cotton swab and liquid, I guess. It might have been water, and that my nose was so sore I couldn't stand it anymore. Like I told you, I had soap and water up and had to spit it out my mouth. I believe that's where my nose cancer came from.

TG: Right. On a lighter subject, did you ever, when you came to work there, or when your husband started working t here, did ya'll participate in any of the recreation stuff they offered?

FB: Yeah. We never did go on any of the picnics, you know. We never did much recreation at all. Maybe go to a movie once in a while, a drive-in movie we would take the kids. There used to be a drive-in movie right up at the north end of town here. We would take our kids; we'd fix Kool Aid and fix each one of them a glass of Iced Kool Aid and take them, cause we couldn't afford. We'd take them to the drive-in movie and we'd pop popcorn and put it in a paper bag before we left home. And that's how we would take our, entertain our kids.

TG: But you never, really went to, like, the productions they put on out there?

FB: No.

TG: Okay. Do you feel like DuPont was interested in your life off the site?

FB: Yes. Yes, they were. Very much so.

TG: Okay. So they wanted you to have a good life off work?

FB: Yeah.

TG: Did you carpool to work, or did your husband carpool?

FB: I drove sometimes. Yeah. I had to drive sometimes and he drove sometimes. But he carpooled and I carpooled. I carpooled when I started in "K" area. My cousin was a clerk in "K" area. She died of lung cancer. I carpooled with her and her husband. He would take us out there and then he would come back out there. He worked in a different area. Then I carpooled with her and then I carpooled with Nell Armstrong and some men that lived around town, that worked in the same area when I was in the 700 area.

TG: Was the traffic bad going out there?

FB: Yes.

TG: It was?

FB: In fact, when we first moved here, if we wanted to go to the grocery store, we didn't have no taillights, you know. We would have to go before the traffic started home from work, or going to work. We had to go to the store. We had to when the traffic wasn't flowing. You could not get across the highway out there.

TG: Was it four lane then?

FB: Yes. It was.

TG: It was always four lanes out there?

FB: I remember one time, in I believe it was March of '74, anyway there was snow on the ground and I drove myself to work because I didn't want to miss work because of the snow, and I drove myself, that day

to work. And my car starting sliding, and I came within, I betcha, a half inch of the other car that slid off the road. And then the men got out of that car and helped push my car back on the road and went on out there. But if we had bad weather, DuPont would send us home. I liked DuPont because of the weather situation. You know. They would always, you know if there was very bad weather, they would send us home.

TG: So, just overall how do you feel about your time out there? Did you enjoy it?

FB: I enjoyed working out there because if you ever worked in a closed factory, you talk about sweating, but they didn't have no coolant system. Only fans around. It was hot. A lot harder to work. And you was doing something you didn't enjoy doing and you wasn't making any money.

TG: Did you feel it was important, what you were doing out there?

FB: Yes, I do. In fact, like I say, you should have been able to go to the files and look up pictures, you know what I mean, and really get a good story just from the pictures that you could have pulled out of the file.

TG: That's true. We used those files. I go through them a lot. But on a National level, like, did you think about what the overall mission of the plant was?

FB: Well, yeah. I mean, I felt like I was really helping the government. I mean, cause I tell you, today, the way things are today, you just don't know. One time when they were having some conflict with the Cubans, I remember Bill didn't sleep any that night. He tell me, he said, "Now, if something happens during the night, we gonna go up Highway 19." And he went over with me what we were gonna do, cause they had gone over with them out there, which way to go. They also told us if one of the Reactors ever blew up, it would cover 100 miles out and then come back in and what to do. We were always prepared. We had safety talks on how to act should so and so happen, and you know, stuff like that with DuPont. I remember, I got in a safety meeting one time with Westinghouse and I remember, this man was talking and he hadn't even worked out there. He didn't know what he was talking about. And he said something about radiation, and he said, "Nobody has ever worked in a," and I got up and I said, "Wait a minute, I'm sorry. They have worked out here in radiation." He said, "Well, how would you know?" I said, "Cause I have worked in it." He said, "No, ain't nobody ever." I said, "Mr., don't tell me what." And he said, "Well, you can just get up and leave." And I said, "Well, I will," and I got up and started to leave and he said, "Miss, sit back down! Sit back down! Please sit back down!" He was telling us about radiation and to me the man didn't know what he was, the only thing he had ever done was read books. I just let him know real quick. He didn't know what he was talking about. I don't know. I thought some of the safety meetings were ridiculous really, after Westinghouse took over. But now, DuPont was very informative for us. I really liked DuPont.

TG: So you were saying that, ya'll had plans, like to evacuate during the Cuban Missile Crisis and stuff, and thought the plant might be a target?

FB: Yeah. I know my husband didn't sleep any of that night. I know I slept very little. Cause, you know we had talked about it before we went to bed that night, about getting the kids up and getting in the car and which way to head and what not.

TG: Well, do you have anything else you want to add to the interview?

FB: No.

TG: No? Okay. Then we're going to conclude the interview.

**END OF INTERVIEW**

## Oral History Interview – Curtis Boseman

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Curtis Boseman has been involved in security at Savannah River since 1983. Born in Augusta, Georgia, on December 29, 1952, he was raised in North Augusta, South Carolina. After a six-year stint in the military, and brief period working in a local textile plant, Boseman went to the police academy and became an officer with the North Augusta force. Sensing a better situation doing similar work at Savannah River Plant, he obtained a job at the Plant in 1983.

When Boseman first began working at the Plant, he was part of the Du Pont Patrol Force. Before the end of that first year, he was working for Wackenhut, just then coming into the Plant to run the patrol operation and help tighten security. Boseman worked as a patrolman for the next nine years. Still employed at Savannah River Site, Boseman has been a Security Officer since 1992.

**Interviewee:** Curtis Boseman

**Interviewer:** Terri Gillett, New South Associates

**Date of Interview:** June 15, 2006

Terri Gillett: What's the number of this Building?

Curtis Boseman: 701-1A.

TG: 701-1A which is the ....

CB: The ECF part of SRNL.

TG: This interview is being conducted as part of the Savannah River Site History Project, which is documenting the 50-year history of the Site and its impact on the surrounding area. Mr. Boseman is being interviewed because, as a representative of the Wackenhut Security Company. We'll start with, where were you born?

CB: I was born here in Augusta, Georgia. In Augusta, Georgia.

TG: In Augusta, Georgia?

CB: Yes.

TG: When were you born?

CB: December 29, 1952.

TG: So you were born right as the Site was getting started.

CB: Getting started, yeah.

TG: Did you have any relatives that worked out here or any familiarity with the Site before you worked here?

CB: Oh, yes. I knew a lot of people, and cousins and stuff that worked there. My brother worked out here at one time. I was very well aware of the Site and its function.

TG: Okay. Why did you come to work out here?

CB: I was on the Police Department for about 3 and a half, 4 years and the Police Work was good, but I could get more of a career and, economic-wise, to come here. It was better for me to come here in this part. So I left the Police Department in July 1983 to come and work with DuPont Patrol, which was phasing out as an LSC, which is a Civil Service employee and I was picked up by the new contract that we signed.

TG: How old were you when you came to work here?

CB: 30

TG: 30? 30 years old? So really, what your expertise is, what was the difference between the DuPont Security and Wackenhut Security?

CB: DuPont Security was, while it was security oriented it was more of a safety by far. Now Wackenhut takes, puts strong emphasis on safety, but WSI decided to incorporate Safety and Security on the same level. We can do both. There were times when I was DuPont security that, safety sometimes would take a precedence over something where it could have been worked out with Security at the same time. And they decided to start doing that; to put safety on the highest part and at the same time, not cutting off security responsibilities at all.

TG: And now, was there any difference then DuPont to WSI and then Westinghouse came in? Did WSI experience any changes?

- CB: Oh, yes. Oh, yes. We experienced, it was, along each echelon it was different. Now the early parts of our tenure working with DuPont, for the years, they were in the early years like I said in '83 and '84 and '85. DuPont's security can run this Site, for so many, had been the security on the Site for so many years and we would like the new kid on the block. So that was a very transitional period where people were kind of like getting accustomed to it outside. It was just a matter of conditioning for them to realize that security had been upgraded a lot and that, there was a lot of resentment and a lot of changes on their part initially. Even with the DuPont Senior Management at the time, it was an adjustment period to get them to cooperate with the security measures that WSI had instituted based on what deal we wanted, to get it to be a part to be wanted So that took some time. Now Westinghouse, when they came in, they were the new kid on the block.
- TG: Uh huh.
- CB: So, adjustment from security at that point, that transition was a lot easier because they were the new kid on the block, so they had to adjust to do with their behavior to our security standards at that time. You see, so it was a lot easier when Westinghouse got here, 'cause they set down high security standards also, and the coordination between WSI senior managers and WSRC senior managers was a lot level based on our opinion as deemed fit. So that was a smoother transition, 'cause by that time there were standards already established and they got here in '89
- TG: Okay.
- CB: As opposed to the new kid on the block coming in, in '83 and 30 years of DuPont's control.
- TG: So, what were some of the, you said there were big differences between DuPont and WSI. Was there a difference in, what was the difference? The way people were investigated it or the way people like, went through gates?
- CB: Yes. Yes. We incorporated all the randomness of the security system that you hear about. We were doing that.
- TG: Okay. Okay.
- CB: But initially, it was a hundred percent inspection of the All the "Q", "L". Everyone's inspection was a hundred percent. So they backed off over here to tell, " Okay, well, the mission changed," as the mission changed the management decided that they, "Okay we need this amount of security for this area, and for Administrative area, only this amount is needed." So that was good incorporation in that. But it was a drastic change from what.
- TG: And that's in that WSI instituted that over DuPont.
- CB: That's right. Yes.
- TG: Okay. Right. What is, I don't know. This might be classified, I don't know. What is, as a security person, what does WSI think of as the biggest threat to the Plant now, like, is it foreign people. Do you know what I'm saying?
- CB: Yeah. We are getting borderline to discussing our defense planning, so ....
- TG: Okay. Okay. That's fine. I didn't know if I was ....
- CB: That's okay.
- TG: Okay. Okay. Is there anything else you can ....?

- CB: But along those lines you were talking about there, I can say that our job, our mission, you know, we have a mission that just not classified or anything. But we are tasked to protect property, personnel and product. That's our mission without going into the rest of our mission. I've never worked over the last 23 years with both sides of the company. I have to give to this side. I've seen a lot of improvement where the work used to be and where there is not. Even with us, we are constantly improving. I mean, even when we get higher ratings on our yearly evaluations. Our management is constantly looking for ways to improve that. Which is a good thing, because we are constantly, as the World threat with 9/11 really raising up. So, as the World threat increases, we change our Security practice to accommodate such, something changes for any threat that could be divided. And I've been watching a lot of changes over the past 23 years and it's always, as it becomes required that serious, we'll do it.
- TG: Okay.
- CB: I got to give our Senior Managers, management, kudos for that because they do make great adjustments to stuff and we received a lot of backing from all security measures.
- TG: Okay.
- CB: Like I said in the beginning they had learned to incorporate safety with security. So it all works out just good. You can be safe at the end of, today and get the mission accomplished. That has been a big adjustment over the years, but we learned to incorporate it well.
- TG: Okay. What have been your different job options? Are you out patrolling, or are you sometimes in here?
- CB: In early on, like from '83 to about '92. In '83 I started out in 100-L, and then I came to this area to take over the 700 in '84, in early '84, January or February '84. "M" area was up and running then. I was assigned to 3-M zone, where my primary defense, function was protection of "M" area in this part. That's when I was assigned to shifts in those days. I'm on day shift now, but I was assigned shifts in those days. I was on C Shift and I was assigned to "M" area. And, see, to show how they improved over the years, even though "M" area no longer exists, when we first took over "M" area, there was only five people required over there in '84.
- TG: Five security people?
- CB: Five security people. Right. Someone at the front desk and three down at 321 Building. When "M" area closed down in the mid-'90's, early to mid '90's, there were approximately 8-10 people in that building and that signed up for 321.
- TG: Oh. Wow.
- CB: Plus the three that we had.
- TG: Yeah? So, they stepped it up.
- CB: Stepped it up.
- TG: Do you think that, like is security just as high now after 9/11 as it was, well it probably was ....
- CB: It was different. You know, as the farther we get away from 9/11, I've seen it go down some, which is concerned, us working in the field, you know, but those are the things that were way above our head, so we just go, whatever. We've seen some things through 9/11 that was really, really up and we would think, "Okay, even with all the improvements that WSI made over DuPont, we had to work with both of them. 9/11 brought us some things that we thought should have been implemented before 9/11.

- TG: Okay.
- CB: And then, like I said, the farther we get away from 9/11 then, see, the Site D&D and how their just take that thing down and then the DOE and Wes, my senior manager, made the decision to move it inward.
- TG: Right.
- CB: And then before that, we began to see a kind of decline in the security posture. We're still secure, but we see different things also.
- TG: Right.
- CB: But it's tough. Because it's always there; especially, when we went in Afghanistan, the level went up.
- TG: Right.
- CB: And when we went into Iraq, the level went up.
- TG: Right.
- CB: Like I say, the world's been going on for a while now so, it tapers off, you know. It never gets below, it always stays within the security marks but we ....
- TG: You have levels like ....
- CB: In the security levels. Yeah.
- TG: You have levels like Orange, Red ....
- CB: Yeah. It depends on the Homeland Security. When they dictate a color, then we, now one of the things I like about it, because we are a very flexible organization when the word comes out from DOE, our senior managers, we can elevate on a moments notice.
- TG: Now, this might be a question that you can't answer, or it might be before your time, but the contract between security, like post 9/11 and Cold War. There was like a break when the Cold War ended.
- CB: Yeah. Right.
- TG: Did security, like, slacken a good bit?
- CB: Uh huh. Uh huh.
- TG: Were any of the areas unfenced that are fenced now? Did they re-fence them or anything like that, that you can think about?
- CB: No. I don't know anything about it, but still safety brought in, like I said they did, until they decided to do this decommissioning thing, that's when the fences and stuff started to come down. Of any kind of security posture in the world.
- TG: Okay.
- CB: That's when the fences started to come down.
- TG: Let's see. You were a policeman before you came here. Let me get a little background. Do you live in Augusta or do you live ....?
- CB: North Augusta.
- TG: North Augusta.
- CB: Born and raised in North Augusta; born in Augusta, raised in North Augusta.
- TG: Raised in North Augusta. Are you married?
- CB: No.
- TG: Not married?
- CB: Once.

TG: Once?

CB: Wasn't any good at it.

TG: Did you ever leave this area?

CB: I went in the military for about six years.

TG: Six years? So you had military training before you went into the Police Academy.

CB: Right. Then when I got out, I went to work in textiles and then I ended up in the Police Department. Then when I saw that this job opened, DuPont was hiring.

TG: What textile company did you work at?

CB: I worked at, initially when I first got out of the military, Clearwater Fence Plant and then I left there and went to Avondale Mills now, but it was Graniteville Mills in those days and it was great but they were up in Graniteville. Avondale now you see. And then I left there, got laid off from there and I went to, they used to be Owens Corning Fiberglass. From there, I went to the Police Department. The Police Work was good, but the pay just wasn't there and ... the Police Department

TG: Do you have a favorite thing that you like to do out here, like I mean you've done patrol and you've done, do you have a favorite area?

CB: Like I said, I've been here since January '84 and with our reassignment system, which is coming in about 3 weeks, I have seniority to go to other areas before these other guys up there. But, one this is closer to home; and two, all the years I've worked here, I know the people well. I can, in other words, I can do the job. And sometimes security can get to be pretty aggravating to some people. So my job is to make sure, one thing I finally mastered is to make sure that I can get the job done. But at the same time, do it on such a level where if I was on the other side of the coin, that's the way I would want people to do it.

TG: Right.

CB: Sometimes it gets aggravating with some people; I'm just saying that.

TG: People get irritated because they don't have the right clearances?

CB: Right. Or rule or security rule, they don't agree with.

TG: Like cell phone things, and like that?

CB: Yes. That's what I mean.

TG: I leave mine in the care. I'll take it anywhere on the Site anywhere. I don't care where I am.

CB: As a matter of fact, there's a lady I won't call her name. But, two years ago, When I did a random check on her. I was working at the Gate at the bottom and I did a random check on her. And I caught her with a cell phone. And she asked me to let her take it back to the car. Well you know, two days prior to that, I'd gotten another person. And that's not what this is about; giving anybody any problem. I'm just an enforcer; I don't make the rules. Before they came out with that rule, and a site employee they could leave their phones if they forgot, they could leave their phone on a holster and we'd give them a receipt for it and when they left they could pick it back up.

TG: What happens now?

CB: Now, they can't leave at all. They get caught with it now they're in deep trouble.

TG: Oh, their just in trouble

- CB: Deep trouble. That's the Westinghouse policy now. The first offense, you know, you get counseled; the second offense you get 40 hours without pay and the third offense you get to, the third offense they let you go.
- TG: Out.
- CB: Terminated. So, like I said, there was this lady, and that was two years ago. And she wants me to let it stay in the car.
- TG: Really?
- CB: She takes that personally, which is okay. I still greet her. So, I just do, I can't be responsible, I can only be responsible for me. So when I speak and she responds And it works out better, it makes for a better; it makes for a good work place whenever I can get along. But there's a job that I have to do. So then, she kinda kudos to me. I have learned to do the job and do it well, but at the same time, have a good working rapport with the people that whenever I enforce one of these rules on them, they know that it's not personal.
- TG: Right.
- CB: It's just a job. There's a requirement, I have a requirement and they have a. I'm just fulfilling my requirement, that's all. I have tried talking to her, but to no avail. She still, but that's okay.
- TG: When you were a kid, did you hear about this place?
- CB: Oh, yeah. Yeah. 'Cause growing up in North Augusta, back then it was called the bomb plant.
- TG: The bomb plant.
- CB: It was secretive and with all these big, huge, secret. It begins to get out a little bit more when, what was the Secretary of Energy's name, Hazel Leary. She decided to de-classify a lot of stuff and then left it under her instruction. This Site was more open than it had been for years.
- TG: Who was that?
- CB: Hazel Leary.
- TG: Hazel Leary?
- CB: Hazel Leary, Secretary of Energy.
- TG: Okay.
- CB: She was the first Secretary of Energy, I think when Bill Clinton's first Administration of a couple of years ago that Administration, whatever. And she opened up a lot. She opened up a lot.
- TG: I know, did you think about it much, I mean, they're making bombs down there, I mean were you scared of it?
- CB: Well, you know what? Well, see a friend of mine when in high school, when they integrated the schools here and they had to put it in North Augusta High School, a friend of mine, a good friend of mine, his father worked in the area. And that was when I first, I was like in ninth grade or whatever before I finally found out that they didn't make bombs here; because this was the bomb plant. Well, that wasn't the case. And the people who had worked here couldn't tell. There was only "X" amount of stuff we could say now, but it's not anywhere near like it was in the '60's.
- TG: Right. I talked to some people that didn't know what their husbands did for a living, you know, they just worked out there.
- CB: They couldn't tell them.

- TG: That was it.
- CB: You couldn't tell them and you were kinda sworn to that when you were hired in. But then I found, well he was talking about it one day, we were talking about it in ninth grade, whatever, tenth grade and he said, "My dad (inaudible)." That's when we found out that there was no bomb, that it was a (inaudible), but there were no bombs being made here. But up to that time, you know as kids we grew up, "Ooh what if it explodes out there." You know, and we had potential in those days of a massive environmental stuff
- TG: Right. Right.
- CB: But not on the level we were thinking. You know, mushroom cloud.
- TG: Mushroom cloud.
- CB: Yeah, I heard about that.
- TG: So a lot of these don't apply to you because a lot of these are like, you know, where did you live during the construction area in the '50's, but you weren't really of an age to be out here and working then.
- CB: No. I talked to a guy who just left here a couple of years ago, was hired out here 6 months before I was born,
- TG: Really?
- CB: He just left a couple of years ago.
- TG: Wow.
- CB: Have a guy in here now, Al Bonnie. He came in a couple of months ago and some people came in who worked for him and they had "Congratulations, Al, on your fiftieth."
- TG: Wow.
- CB: Fifty years out here!
- TG: Fifty years out here. What's his name?
- CB: Al Bonnie.
- TG: Al Bonnie.
- CB: Fifty years. And he came in this morning just as spruced and spried. He's got a lot of people who work for him. (Inaudible)
- TG: Are you, like, a 40-hour work week?
- CB: Yeah. I work Monday through Friday. I left shift work '92. In '92 I left shift work. From about '83 to about '92 I worked shift work and then I went to straight days. I've been on straight days since.
- TG: Okay. I love the, I mean a lot of these are from people that were working with potential contaminations, and things like that.
- CB: No. That's the only thing, early on we did work in the 321 Building. We weren't worried. They had arrangement stuff out there you know, but we never wore it; went in.
- TG: Right.
- CB: We had always put security on with DuPont, so they asked Westinghouse to make sure that they, when they left it stayed.
- TG: You were saying earlier that DuPont, and I've noticed 'cause I've been working, and like they stressed safety more than security.
- CB: Uh huh.

- TG: What do you mean by that? I mean the DuPont security. How could they, what did they do with safety?
- CB: Well, there was no running.
- TG: No running.
- CB: For one of the things there was no running.
- TG: Okay.
- CB: Working up from day one. At the alarm, you ran.
- TG: Oh! There was no running if there was an alarm?
- CB: No.
- TG: Even the patrolmen?
- CB: No. The trouble went to response position and you responded to practice alarm and walked. Wackenhut, from day one, you ran. That's when we knew for those of us that were, like all three of us worked at DuPont, and so we knew right then and there; from that point on. There was a new sheriff in town.
- TG: Anything else, like give me some other examples. That was really interesting.
- CB: Winona, what were some of the changes that were very noticeable when the DuPont security, when we worked with them, some of the safety that we weren't allowed to do as opposed to WSI? Remember like, when DuPont patrol you know, for safety purposes, you couldn't run.
- Winona: (inaudible)
- CB: Yeah. Like, we weren't even allowed to change down the vehicle if we got a flat tire. We had to wait for some maintenance or somebody, a T&T person to come out and change it.
- TG: Okay.
- CB: From the response standpoint, from practicing this into your position, walked and if you ran, if you were caught running you were in deep trouble. That was a no.
- TG: Seems like if anybody was allowed to run outside, it would be security. No!
- CB: You were in deep trouble.
- TG: Okay. Do ya'll, like, what is your training at the ol' fire pit?
- CB: We did, for, right now my position is that of a security officer. Up until August '92, I was then, first we were initially we were security inspectors and then we became Security Police Officers. But up until August '92, I was Security Police Officer and ran, we ran. Now the three of us, we are Security Officers. We are not required to do that. There have been several times we had the option to go back and do that. But right now, for what we work and are able to do here, we don't go out to do assaults. My training consists of I work for access, just mostly I control access and egress and for the removal of property all operations and personnel and stuff. But for Security Officer Job, that's more or less a Security Police Officer. All three of us is Security Officers.
- TG: Are Security Police Officers armed?
- CB: Armed indeed! And he responds and he drives the road vehicle. They patrol and they respond.
- TG: Okay. Is Wackenhut, does it have anything to do with, like, fire suppression, like firemen; 'cause there used to be groups like that.
- CB: Right now it belongs to Westinghouse, but I think, one of the things they seemed to talk over the years is that like, being in control of emergency and preparing these people. And I thought, "Excuse me, the Fire

Department falls under that." So, how do you know? Other sites, in cities, Wackenhut runs TWC, The Wackenhut Corporation, they have the contract for the Fire Department for the towns and cities.

TG: Okay.

CB: So, if eventually they get the contract here which is, like I said it's just been talk; way above my level that kind of talk, and say maybe it's almost a done deal now. It won't be anything new to WSI because they've have TWC, The Wackenhut Corporation has had tons of experience in fires and stuff like that.

TG: This might be repetitive, but DuPont just from management, the management of the Plant, DuPont to Westinghouse, can you kind of contrast them?

CB: Oh, Yeah. Yes. Early on when I got on here and the DOE people now would put my head on the chopping block for this, but I pretty much saw it all with DuPont managers. They're just that. They managed, pretty much dictated to DOE what they were gonna do. Nothing against DOE; they did not have the Nuclear expertise just like DuPont had to begin with.

TG: Right.

CB: But DOE did not have enough nuclear expertise to say, "Okay, well now, you should be doing that and I don't think you should be doing that." And so I saw a lot of stuff go DuPont's way early on when Wackenhut got here, when WSI got here because DOE did not have the people with the nuclear expertise. And then over the years, that's changed. It's changed. As a matter of fact one time WSRC, now when WSRC got here, by the time they came over DOE had Nuclear Physicists, they had people trained and so now they could go no longer say, "This is the way it has to be done." Because DOE had people at that time that said, "No, this is the way it's going to be done."

TG: Okay.

CB: And so, the old DuPont'ers who were with them, now all of a sudden, they have a whole different outlook on things now because for the longest, like I said they were the major hen in the henhouse and now you got the DOE, who can bounce them out. They got Nuclear Engineers, they got Nuclear people who knows, okay, that you can't do that. And you can't do that. The major transition that I've seen over the years I've seen DOE do what they always had been doing, but then they didn't have the people doing it. They took control and they dictated. That is one thing about the company that I work for. They realize early on that WSI was contracted out to the client. I mean we were given a mission card, we were given a mission care, plus my service pledge. DOE was the client and this is, we lived in doubt, we lived in doubt, that's the Customer Service Plant. And you can see that many of them are from there. But that was preached, and that's what I say about how our management is to be commended; because they've learned to incorporate security. But at the same time we realized that DOE was the client.

TG: Right.

CB: And so each one of us was given one of these Customer Service Pledge cards and ....

TG: We were talking about, what were we talking about? I started to write something. Something to do with Westinghouse.

CB: Yeah, and we got into it pretty candid too sometimes.

TG: Well, I'll just ask you any question. Were you able to, how long did it take for you to get your clearance? Were you able to work before you got your clearance?

- CB: Very, very limited. And for some reason or another it took me a while to get my clearance, which was kind of frustrating, you know, because I mean I had an unblemished background. There were people who came two, three, four months after me and got "Q" cleared and that was frustrating. But all that's kinda low behind me now. How quickly is it (inaudible)
- TG: So you were able to work out here just a little bit. Do you mean limited hours or limited function?
- CB: Limited function. Like whatever was back in '83, now they did clear in late '83, so that was okay. By the time Wackenhut got here, I was cleared. But I didn't go to the Wackenhut side 'til like November '83. Even though they got here, they were just taking over different areas.
- TG: Right. It was kinda of staggered?
- CB: Yeah. It took over, there was a partial take-over, like I think it took over "K" reactor and then "F" area and "H" area and like 700 and the 3-700 and the barricades I think were the last.
- TG: Do you feel like that this is an important job to National Defense?
- CB: Oh. Yeah. And that's one of the frustrating parts and times when I went to see if I thought security was circumvented for one reason or another. That was a little frustrating. But, like I said, I learned to say, okay, if the Senior Managers say okay, that's the way it's gonna be, I'd rather not stress out about it. Early on, oh yeah, early on, well work now is even more important because now because of the terrorist thing is just unheard, I mean, until 9/11, I mean there were some terrorists in the United States at that time, but on the magnitude of 9/11 you know, and that kinda of opened it by the time. These people no longer approved; they didn't care about dieing. All they wanted to do was reeked havoc over the years. Up until then and even now, but up until then I was a little more concerned about first of all the lay offs they had over the years. I really thought that we would see, and I just think through the Grace of God and very thankful, that we have not seen a violent, disgruntled employee.
- TG: Oh. Yeah.
- CB: That's, you know happens everywhere, but how it's never happened here, is just amazing.
- TG: Tens of thousands of people.
- CB: Right. At one time we were at 24,000 people employed out here. All these transients come through and it's, I worked ACF. To some people before, to me it's pretty simple because you learn so much. You learn people working ACCF and people, and I'm thinking I just see different people, different things. So how we managed, then 9/11 like I said brought terrorism back to the forefront. But, when the Cold War was over, even though we used to, we still enforced security and stuff on the Site. I was looking more for just some disgruntled employee when he got told he was let go. We would hear a lot of this, this thing would be like, "Well I've been here a lot longer than this person. Let this person go." That kind of stuff.
- TG: Right. Right.
- CB: But, just some person who would think that he shouldn't be leaving. One of the things that I've noticed that it always seems to be happening, it always seem to happen somewhere else and not here. Now Phelan, when the guy did the shooting at the paper plant several years ago, that kinda brought it home a little bit. That kinda brought out the disgruntled employee thing home, you know. But with all the things that, all the people who've come through here, it's just amazing the risks (Inaudible) We've got some disgruntled employees, just very, very minor stuff.
- TG: I know this area is getting D&D'd, and what was it like when you know, it was everything ....

- CB: A small city within itself. It was phenomenal. This was the brain center of the Site. And it was, Oh, it was 12, 13, 14 hundred people coming in this area alone. Another 8, 9 hundred when 703A opened, the lower 700's, "M" area. It was a city within itself. And it was like a self-supporting city. Everything that was required was right here.
- TG: Right. It had a bank and food.
- CB: The main cafeteria is right there, the credit union, the bank. It was just, and everybody came from the Site and the credit union kept makin 30 something dollars. It was so like it's not now. One guy just came just came from "K" area about a year ago, "K" area. But, Robert Hergiman, he and I had been up here from day one together and we've seen, to look around now, we go out and ride around now and we see the foundations of buildings. It's very shocking.
- TG: It must be.
- CB: Not in a million years, would I have been, would I thought that I stand here at this post, 7011A, and see the front door of that building.
- TG: Right.
- CB: Not in a million years. And when they told me 15 years ago that the Site was going to be the way it is right now, I never would have believed it. But, a change in mission, a change in war. You just have to be, learn to be flexible if nothing else.
- TG: Were people still actively carpooling when you started coming here? 'Cause in the beginning, in the early '50's I mean, like, nobody drove to work themselves. Everybody was in like a 5-person carpool.
- CB: Well, yes. Everybody was, as a matter of fact, we tried it, I tried it a couple times. At one time I thought it was the right thing. But it didn't work because you know in the early days we were short of personnel, one of us made up for it with overtime and the other one didn't. But DuPont provided a service where if you got forced for overtime and your carpool had to leave you, they had a person that was designated. They called to all areas and picked people up and drive them.
- TG: Take them home?
- CB: Take them home.
- TG: Great. That's great.
- CB: That was a good thing. But, like I said, money got slow for the Site, then those kind of services, they looked for ways to make cuts and that was one of the things they did it.
- TG: So it just seems like, the parking lots out front, they used to call then Aiken and Augusta.
- CB: Yeah. Still is. Aiken 773. Aiken Parking Lot 773. Augusta Parking Lot. Augusta Parking Lot 703.
- TG: It just seems excessive because there's not, you know, that you use it.
- CB: Now, now, every year, hun, for six years in a row every year came, just a year in time, we'd see an extended parking lot, expanded parking lot because the people were hired so much. And that's why called that one the Overflow parking lot. Because it was all those expansions they did on the parking lot and re-striping and trying to get more cars in it.
- TG: Uh huh.
- CB: That was my new spaces.
- TG: That was just full.

- CB: Oh, you'd ride out front in those days, we'd have to run people's tag numbers and to not be parking on the grass you can't do that. You just got to find another space to park in. Now, to look right by there now, I look, umm. And you know, to be honest with you, it's really just sad. I realize it's changing times but when I look around some of these, some areas now after what it used to be, it makes me a little sad.
- TG: Right.
- CB: But those are just the times that we are living in.
- TG: Yeah. Do you know anything about; well obviously that's for Aiken side and that's the Augusta side of the Plant, you know just like geographically. But, like, did most of the scientists live in Aiken and most of Administrative people live in Augusta, or have you ever heard of anything like that?
- CB: No. Not really. It was kinda evened up. The majority of the people that were assigned to this area, they preferred Aiken because they just wanted to make Aiken their home. The majority of them did. But I would say just as many people would come in with doctors in their name. They'd come in from and part in the Augusta parking lot.
- TG: Okay.
- CB: But a lot of us just preferred Aiken over the Augusta area.
- TG: Okay.
- CB: Because, like I say, from Graniteville it was Dupont, Aiken and (inaudible), we had Mr. Moore.
- TG: Aiken.
- CB: Aiken is like, this all-American city.
- TG: Right.
- CB: You see, me, you're in for a North Augusta boy.
- TG: I like, I stay in North Augusta.
- DG: I ain't too keen on Aiken. I'm a anti-Aiken person and this parking lot here, across the road, that's why they put them all there.
- TG: It just seems like if you were driving down that, you now how you can't like really back up and you know you're coming down this way and if you miss a spot and there's no more spots, you've got to go all the way ....
- CB: You got to go all the way back out.
- TG: I can't imagine that big one out there, you know?
- CB: And you can bet, there was somebody behind you.
- TG: Yeah. Like, you might as well just take the first one you get.
- CB: You take the first one you get. That's right. So a lot of people would come in early. We noticed that. A lot of people would come in early so they could get close up parking places. That's what, "What are you doing in this early?" They'd be learning real quick why they were coming in early. But they did. They'd have to walk all the way over to the lower 40 to get to the car in that one on those super hot days or super cold days.
- TG: Right.
- CB: All that's changed now. The Site needs to be changed and someone went in, the mission cuts down, the money cuts down and then there's no, things kinda crumble. It's just what we need.
- TG: Do you think that at some point, you thing the Lab will always be here or do you think it will all move interior?

- CB: I was talking about the Lab moving interior too. Right now, I think it's too much with all the buildings being torn down, everybody will have to build something entirely new because I've been in these Labs. It was just a year ago when I was on shift that I used to patrol the inside of there. It's heated. And there's just no place on site now that could accommodate the mission of what this Lab does. So that's kinda of my mainstay because for however long I'm with Wackenhut, I've been here for 22 years, I'd like to stay about 7 more, for however long I would like to just stay here in the 700 area and that's the mainstay. Really one of the mainstays for site and care. And bringing and making a National Lab; that was a big plus.
- TG: Yeah. When did that happen?
- CB: A couple of years ago. That was a couple of years ago.
- TG: 'Cause it was always a site line up.
- CB: SRTC besides the main lab on the Site. Then we became a National Lab Site. As a matter of fact, I picked up magazines when I'm on little random security checks. I picked up magazines from different places and I see where SRS was in conjunction with Los Alamos and different sites so it's okay. They're doing their function. And this Lab, as a matter of fact, this Hydrogen Project out there was a spin off from here, you know.
- TG: I'm running out of tape. I'm gonna go ahead and turn this over real quick.

## SIDE TWO

- TG: So, What is your opinion of Nuclear Energy. After working our here, do you think, I mean do you feel like its ....?
- CB: I've learned a lot. Initially, I'm just thinking what else, I was just terrified of it. I am so anti-dependant on foreign oil, you know. If there's a way, if there's a way where they can incorporate Nuclear Energy, 'cause it's a clean-burning fuel, waste products we have, the products, it's not anything like fossil fuels. We all see what they do. My having worked out here and learned some things, it's changed my opinion of it a lot. Changed my opinion a lot. Because of how many years ago when 3 Mile Island incident occurred. Oh my goodness. We had something close to that, but we didn't have that reaction. That they actually had the commercial camera there. But, mistakes are made. If you're dealing with it, and not anywhere on that level for the people that do deal, people that do with it. Energy, on that level you've got, such as attention detail must be paid to it, because the consequences for not paying attention to detail in a Nuclear environment can be catastrophic.
- TG: Right.
- CB: But based on what I've seen about some people out here when I think over the years, it's changed my mind about it a lot. And I think we can incorporate that, I think it's a must, unless we come up with something else. I think it's a must that we incorporate that in our future. I think it's a must. And we hadn't done one in years. And a lot of planning, I read about it. A lot of planning. A lot of things have to be taken into consideration when you talk about building a Nuclear Power Plant. If I lived in California, I don't know about those people, I wouldn't want to be sitting on that San Andreas fault. But a fault runs right through SRS. That fault landed right to SRS. Its not the San Andreas Fault but my mind's changed

now. I think we got to incorporate Nuclear Power too, just as long as the people who are doing it, do it properly. I've learned that. A tour came to the Site last year. A private landing of different kids came to the Site and when we were checking them in up front there, they were kinda like a Greenpeace type organization, and we were checking them in up front there, they all had their own little private, what do you call it, their private Geiger counters. Oh. Geiger counters. And one had their own personal one. It was like 35-40 people. And then when they left, I was doing a security check in one of the buildings, 703-45A, and I read what they, the interview they gave reporters in the paper. Oh, this suspense is just killing me. Everybody, I'm thinking,

"Okay they were sweet and nice when they were here, when they were going through the security process", but when I read that stuff I'm going, "Oh my goodness." Now somebody who's in some part far away, their mind might be changed by reading this. I work here and I know what I read in that paper.

TG: Well, I don't think you're gonna convince Greenpeace.

CB: No. No. That's one thing. You can forget it now.

TG: You can forget it. It doesn't matter what ....

CB: It doesn't matter what you do with it.

TG: Right. All right, what's a belly button? Have you, somebody said that, maybe it's Tim Orman. Is that who set this interview up? He says he's down at the belly button or something. Actually my boss talked too, so I just thought, "What is that?" She said, "Ask what a belly button is." And I said, "Okay."

CB: He said it sounded like a belly button?

TG: He said maybe like this building was the belly button, or that building was the belly button?

CB: Maybe that section of it because it was hidden down.

TG: Oh. Okay.

CB: Just the location.

TG: Okay. I was like, what is that? Well can you think of anything else that would be?

CB: No. We pretty much covered the whole time I've had here

TG: All right. Then we'll conclude the interview. Thank you so much.

CB: Not a problem. Not a problem.

**END OF INTERVIEW**

## Oral History Interview – Laura Cameron

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Laura Cameron was born on January 30, 1916 in Shirley, Massachusetts. During World War II, she worked for the War Pricing Ration Board. During that period she decided to stay employed with the federal government. After the war, she moved south to Augusta, Georgia, and was working at the local Veterans Administration hospital in Augusta, when she got the word that Savannah River Plant would be established across the river in South Carolina.

Cameron started working for the AEC as early as March of 1951. As she later said, this was “the very first day,” when AEC offices were in the Augusta Waterworks building. Savannah River’s AEC offices were later moved to the Temporary Construction (TC) Area before finally being located in A Area. From that point on, she worked in the AEC’s Savannah River Operations Office (SROO) until the day she retired, in 1973.

**Interviewee:** Laura Cameron

**Interviewer:** Mark Swanson, New South Associates

**Date of Interview:** September 13, 1999

Laura Cameron: You can just ask me some questions first to get started.

This is an interview with Laura Cameron, conducted by Mark Swanson, Historian with New South Associates, being conducted on 14th of September 1999 at Laura Cameron's house. This interview is being conducted as part of the Savannah River Site History Project, which is documenting the 50-year history of the Savannah River Site, and its impact on the surrounding area and the people who have lived in that area. Mrs. Cameron is being interviewed because of her long-term association with the Savannah River Site.

MarkSwanson: As a rule, we ask some information about your age and your date of birth.

Laura Cameron: Oh, well, that's easy. I'm only 83. I was born January 30, 1916.

MS: Okay, and place of birth?

LC: Shirley, Massachusetts.

MS: Your relationship, in general, to the Savannah River Site.

LC: I started the first day. In fact, I started here in Augusta at the Waterworks Building and then we went into some temporary buildings that had been used during World War II, which now is Daniel Heights and where Aquinas High School is. There were buildings there. So then, as the AEC part developed, that's where we were stationed, and on the first day the buildings, the TC buildings were occupied. We went on over, in fact, I even got the privilege of driving one of the government cars over that morning, so as to get everything over there.

MS: Okay.

LC: I don't remember the date of that, though. Isn't that funny. Was it in June?

MS: How did you find out about the project?

LC: Well, I was working for the VA Hospital here, and there was little chance of advancement and I had a couple of children to raise and it was announced in the paper. So, I immediately prepared an application and took it down. Bob Hart was the Personnel Officer that was accepting applications that day.

MS: That's H A R T?

LC: H A R T. I think he was later one of the top dogs at Oak Ridge. But, I think they gave him space down the Bell Auditorium. I think it was the Bell Auditorium and I went down there and took an application. Luckily, I had been working in Personnel Office for about 5 years and worked with the U.S. Employment Service for 3 years, so I had pretty good background to make a move when they were just opening an office.

MS: Don't worry about that. From the information I've got, you were a World War II Chief Worker with the War Pricing Ration Board.

LC: That's right. That's right.

- MS: What was that like, very briefly.
- LC: That's where they distributed the coupons that people used to buy food, coffee, shoes, meat, automobile tires, typewriters, bicycles; all the things that were restricted during World War II. That's where we issued the coupons for them to buy that. And the gas.
- MS: Okay. So you joined the AEC plant.
- LC: Yeah. I was with the AEC plant, right? Because I was already working, had already been working with the Government you see, for about 8 or 9 years.
- MS: How did you end up in Augusta?
- LC: After the war and after the rationing boards were closing down, I just filed an application and looked at the list of openings in the Federal Government 'cause at this time I'd made up my mind that I would stay with the Federal Government and I got an offer from the VA Hospital. I came up and checked them out and decided I'd, it was easier to raise two children here than in Florida. And even at that, I was making what? \$1530 a year.
- MS: Was work considered attractive to those from outside of the Southeast?
- LC: Yes. Yes. We got people in from, once the announcement went out, we got people from everywhere to come and send in applications. It was surprising how many just visited, just came in person.
- MS: So, you lived here already.
- LC: I was already living here. I'd been here 5 years already.
- MS: How would you characterize local opinion about the Plant coming?
- LC: Excitement. Because it was a very low employment area; and, gosh, everybody was going to have a chance to get a job if they could get it, if they would qualify. So, I think there was extreme excitement about it. There was never any, I don't remember any unfavorable comments at that time.
- MS: But you worked with the Government already.
- LC: Right.
- MS: So you had experience ....
- LC: I just transferred.
- MS: Did you have to go through any sort of clearance?
- LC: Oh, yes, very definitely. All of us in the Atomic Energy part had to have a full clearance. Now we all didn't have top secret, but we all had to have an FBI secret clearance. Yes.
- MS: So you were never, like a DuPont employee?
- LC: No.
- MS: Right. How would you characterize the relationship between the AEC and DuPont?
- LC: Well, personally, I thought it went very well. I can't ever remember any serious problems, and I'm sure up in the Engineering and; our's was strictly an oversight job. DuPont was expected to be, that you'd know what to do and they just had to have someone from the money side overseeing the job. I always worked very amicably with all the individuals I had contact with.
- MS: Did you have any previous experience in working at an Industrial Plant like this?
- LC: Not like this. My dad happened to be a building contractor, so I had that familiarity and for a short period, I worked for a boat construction company when I was first learning. But, no, I'd never been involved with a large situation like this was.

- MS: Okay resuming questioning, you mentioned earlier that you came, you had two children when you were living in Augusta. So when you were in Augusta, you were ....
- LC: A single mother.
- MS: You said you moved from Augusta because it was ....
- LC: I knew it would be a much less expensive place to raise two children by myself.
- MS: Right. Okay. These questions here are largely for construction employees, but because you were here so early on, some of them might be appropriate for you as well. Were there a lot of transient construction employees?
- LC: Oh, definitely. We had to build living quarters and they selected Williston, Barnwell, in that area to build those, barracks, for the guys. But it was surprising how many carpools came all the way from Columbia, South Carolina every morning. Just think, that meant they left home about 4 O'clock in the morning. They didn't stay down here; they went home every night. But then there were others, and they would stay for the week and then go home for the weekends. Everything in the area, I think, was rented at that time.
- MS: What were the food supplies like? Were there any shortages?
- LC: I don't ever remember any shortages. I think the stores just got on the bandwagon and got everything, you know.
- MS: Right. What was traffic like?
- LC: Well, traffic was something else, because the bridge across the Beech Island, across the span of Beech Island, was just that single bridge, two-car. When we went to work in the morning, it was very slow and it was one, solid line of traffic. And when you did have a little accident, it would be at least a 10-car pile up because you couldn't tell it back far enough. Then, of course, they got the road built from North Augusta, which helped and then, eventually, the second bridge over the river to Beech Island. But, yes, the traffic was really solid; just like what's happening now with the storm, just a constant flow. That was during the height of the construction; so, you had that many more people going. After construction was over, of course, it died down a little bit. People did use sense and get into carpools. The time that carpools didn't work, was on a Friday, when somebody was going to leave a hour early, or they were going to pick up their family on the way and go off. Friday you could always tell, there was more traffic. And, apparently, buses didn't work out. As I recalled, they tried to see if they could use buses. That's a little fuzzy. I just remember a little discussion about it. But the carpooling was the best. We all got into carpools.
- MS: Was that, sort of, mandatory, or was just a ....
- LC: Well, I guess it was recommended, but nobody wanted to drive that 25 or more miles a day every day, so you just found a little group in your neighborhood or without too much running around and carpooled. Then eventually, they built those carpool parking areas, where people could drive to that spot and meet and they'd all get into one car and come on to the Plant. Then, of course, you had to remember, there was just so much parking space out there too.
- MS: Were construction workers treated differently by local residents then; like incoming operations staff?
- LC: Gee. I don't know how to answer that. I don't think so. I didn't get involved with the construction people very much because they really, if they were already residents of the area, there was no problem. If they

were the transients, they were basically staying in those barracks and that was on the other side of the river. I don't recall hearing of any problems.

MS: Okay. As the construction occurred, segregation was the law of the land.

LC: Yeah, I know.

MS: How did that effect?

LC: I think they knocked that out pretty fast. Had we already stopped the divided restrooms and the divided restaurants and the bus station? I think that ....

MS: I wouldn't think so by early '50's, but ....

LC: It was right about that same time, anyhow.

MS: I think in the military it was, but I don't know ....

LC: I never remember divided drinking fountains or anything like that at the Plant.

MS: Okay. So nobody made a fuss about that.

LC: If they did, it didn't filter down to our office. That would have stayed up at high level.

MS: This may not be appropriate, but was there much crime during the construction period?

LC: I know there was some. I don't think there was any more than, just ordinary living times. I don't think there was any added. It would only be because of the numbers of people.

MS: Right. What did DuPont or the AEC or any of the other subcontractors do to elevate any of the construction problems?

LC: I can't answer that. I just don't know.

MS: Yeah. Okay. What did the communities do, locally?

LC: Well, the communities, they formed committees to work right with the contractors, to help. Like, when they first came here, you know, Augusta you voted at day break to the day's sunset. But in Aiken, they didn't open the polls until 10:00 or 10:30 and then they closed them around 2 or 3 in the afternoon. Well, they got with the people there and so they said, "Well, hey now we're residents and we want to vote, and we bought property." So they worked that out to get the polls to stay open, to open early enough and to stay open. I remember that one thing especially. But, I think the area was so happy to have this big piece of work here, that the Beech town, or each County organized committee to be part of it. We had consultants, I remember, that came out, I don't know how many times a year, but they were businessmen from the area. It was just a cooperative thing. They just came on out there and discussed what has to be done with all these people, and what can we do. So, I think it was very well orchestrated.

MS: What were the relations between labor and management? You might not know this being in the AEC.

LC: No, no, I don't really. I remember when they were trying to get the union in. I can just remember about that, but I don't remember any details.

MS: Why did the unions didn't take at the Savannah River Plant?

LC: No. Well, it wasn't necessary. If some smarty decided we should have a union. The only unions would be the individuals who already belonged to, like the electricians and the plumbing, you know, that type. But to unionize the Plant, it just really wasn't necessary because that was the best pay in the area anyhow.

MS: Okay. Did DuPont have a pretty good reputation?

LC: Yes. I thought so.

- MS: I know you talked about it earlier, but just for the record, when did you first start working at the Savannah River Plant?
- LC: Let me see. March 1951.
- MS: Okay.
- LC: Now that wasn't out at the Plant, but it was for the AEC.
- MS: When did you move to the Plant?
- LC: In June 1951.
- MS: June 1951.
- LC: As soon as the TC Buildings were ready.
- MS: Okay. Why did you want to work there, at the Savannah River Plant and what, if any, were the reasons for not wanting to work there?
- LC: Since I wanted to continue my employment with the Federal Government, which to me was a very desirable thing, the sick leave, the annual leave, the pension plan, you know and all that. But also, I had enough working experience to realize if you got in on the ground floor, you were good enough to advance. That was your best opportunity to get in on the ground floor; something to get going. The only bad thing was the travel. But getting into a carpool 25 miles each way, each day wasn't all that bad. Getting up so early in the morning; if you left the house later than 10 minutes to 7, you were going to be late for work
- MS: The job that you had, how did you keep your time? Was it on the honor system?
- LC: No. We didn't have a time clock. But you knew you had to be there at a quarter of 8 and you left at 4:15.
- MS: How much time did you have for lunch?
- LC: A half hour for lunch.
- MS: What did people do for lunch?
- LC: About a third brought lunch and the rest would go to the cafeteria. The cafeteria was a popular place. I brought my lunch because I worked in Personnel and lunchtime for some people, to come to look for another job was the time. So my lunch period usually was spent interviewing someone. So, when I got to eat my lunch could be anytime then to 2 O'clock; although on occasion I would go to the cafeteria too 'cause a whole bunch of us would go over. I think, maybe one third brought their lunch.
- MS: How much did it cost to eat in the cafeteria?
- LC: It was really very inexpensive. I really don't remember, but I know it was very inexpensive.
- MS: How much did you know about what the Savannah River Plant produced when you first started working here?
- LC: Not a whole lot. We had been told, because our Administrative Officer had taken us out there, given us a hundred mile tour of the site when they were starting to build, you know, the Canyon Building, explained all that and we had material to read so we'd know and also because you had to remember that you didn't discuss this sort of thing on the outside. But, I didn't have any real Physics training or Chemistry training, so there was, I just took it for what they said. I didn't understand it.
- MS: My next question: Was the mission of the Plant a reason to work there or not to work there?

- LC: That didn't matter at this point, because I needed to work. However, I did not object to the mission because I knew that this was the future.
- MS: What was your first job assignment?
- LC: Just as a Collection Officer in the Personnel Office.
- MS: Okay. What about the later assignments?
- LC: Later I moved on up into a clerk in the Personnel Records; then I became secretary to the Personnel Officer; and then I became a Personnel Management Assistant. That's when I interviewed people and I visited colleges to recruit. I took care of all the Federal Personnel files. They were in my office. I was sort of the Employees Relations Person. If they had a complaint, they came down. I scheduled the physicals and reviewed job descriptions and went out and helped write job descriptions and things like that.
- MS: Also, too, were you like, a Management Personnel Analyst?
- LC: Yeah. That's what they called it.
- MS: Okay. Right. That was an organization in the Personnel Division?
- LC: Yeah.
- MS: Personnel Division of AEC's Savannah River Operations Office.
- LC: Right. Right. That's what it was. I was in the Government Personnel side because we also had, in the Personnel Division, a Federal, I mean, oh what did we call it? Well, anyhow, there was a group that was concerned with the workers that the contractor had. They are the ones that got more involved when that union business was starting and little problems that happened.
- MS: Right. When you changed positions, how did you normally do that? Was there any particular process that had to be gone through?
- LC: No. Well, there had to be a vacancy available or your own job could grow. When I first went out there, we had three hundred and something employees in the Federal side. And that thing went down and down and down. I can't remember how many we had when I left. But, I know we got down to only a hundred and something. Then they'd start something new at the Plant and they'd need more engineers or they'd need more Physicists or something like that. So, sometimes your job just grew because you absorbed. Somebody left and you absorbed that piece of the work. And then something else came up and now somebody's got to do this, and they'd assign it where it was. So, actually, except changing from clerk stenographer to Personnel Clerk to Secretary, those of you were just selected out of what was available to fill those jobs. But when I became Personnel Management Analyst, I think, that just grew out of my Personnel Clerk job. It just kept growing and growing. You can be around long enough that you know what's going on; and I was an individual who would learn. I knew everything that was going on at the office. I didn't just know what was on my desk.
- MS: Right. What pressures were there to your job, if any, such as production quotas or strict adherence to procedure, information limitations?
- LC: We had pretty strict adherence to procedures because we had the Federal, I can't remember what the darn thing was called. Anyhow, all the rules, and you did have to abide by those. Atomic Energy Commission was exempt from a lot of those. But, you still couldn't just ignore the rules. You had to be sure that they blended. The only work pressures that, especially in my office, I'd go in, in the morning and I knew what I was going to do for that day. About the time I hit my desk, the phone would ring and

in half an hour, my day had been shot because something else came up. But now that happens in a lot of jobs. So, sometimes, you know, I would go out on a Saturday morning, cause all of a sudden I'd see, this can't wait much longer and then I'd go out on a Saturday morning and I'd think, what did I do all week. Look how much I turned out in four hours. You know, well there was no phone ringing and no one visiting your office; no one calling on you to ask you a question.

MS: Right.

LC: I personally, didn't think of it as pressure. I guess it was to a degree. I liked my job. I guess that's the difference.

MS: Right. What did you see as the most important responsibility there in your job or jobs?

LC: Keeping people happy; the bosses as well as the underlings.

MS: Yeah. What did you think about DuPont's management of the plant while you worked there?

LC: When I worked there, I thought it went very well. I knew there were always some glitches, but there's going to be glitches no matter what. But I thought it went very well and I know that we worked very well with the DuPont management.

MS: Did you ever win any awards for safety or anything?

LC: I think mine was for Outstanding Performance.

MS: What year was that? Do you remember?

LC: Oh, gosh, what year was that? It must have been in the early '60's. I can look that up though before we finish here, if you want to.

MS: What was the attitude towards safety at the Plant among the employees and among the managers? And I guess among the AEC?

LC: It was definitely because I know I remember DuPont. I think it was every Friday morning when they had their safety meetings. But we were constantly reminded too that, and of course some of us, not too many of us were out in fields. But we were still conscious of things right there in the building. I think it was taken very seriously.

MS: Did the basic attitude change through time?

LC: Yeah. Things got a little lax, I think, because now you got familiar with everything and I guess that's a common human thing. Once you're totally familiar with something, you don't keep yourself on edge.

MS: Yeah. So that was probably more prominent in the '70's, or so?

LC: Yeah. Probably. Well, cause I left in '73.

MS: Okay.

LC: Yes. And when I would go back out there and I'd think, "Gee, that wouldn't have happened when I was out here."

MS: What were some examples of that?

LC: Well, the first thing that hit me was the dress. If you're in business, you're in business. If you're working in the garden, you're working in the garden. That threw me. I guess I was raised differently. But they were still very careful about letting you get in the building. The guards were there. Although, I remember hearing stories about somebody had somebody else's badge on and they still go in. The guard didn't know that had someone else's badge. Someone said they made one badge, I never knew if this was true

or not, with a monkey's face on it. But then they called on the carpet for a few of those, I guess. But, basically, I think they were pretty good.

MS: I'd like to see that badge!

LC: I never knew if that were true.

MS: What were the most important measures that were in place to ensure the protection of your health while you were there?

LC: Well, we had the annual physicals and we had access to the Medical Department and if anything happened to any individuals, I would call right over there, make an appointment and send them over; even if I had to get the ambulance to come over and get them.

MS: Was that free of charge?

LC: It was free of charge.

MS: Okay.

LC: I went back for years and had my physical out there every year. Then after a while, I said, Oh, gee, why do I bother? Then Westinghouse came in and I'm not even sure if they still have my files.

MS: We talked about security just briefly, but what was the attitude towards security at the Plant and did that change over time?

LC: I was afraid that it was changing. Security was real. As they opened up different things, like our cars were allowed to go down through the Plant to head down to Allendale and things like that. I guess, in my mind, I thought they were getting a little slack, but I'm not sure that they were. It was just that some of the requirements were changing. So much was known by this time, that it wasn't quite as important.

MS: Yeah. What, were there any particular changes that you could recall?

LC: No. Not really. See, after I left, I'm not sure how much they pushed; you know, they pushed at us all the time. You don't talk about anything once you walk through that gate. This is just out. You don't answer any questions. You just don't know. I had remarried. My husband worked out there for one year. He'd come home and say, "I heard someone say," and I'd say, "I don't know what it's about."

MS: I bet that changed a lot though. How did the contractors like DuPont and others encourage safety and security?

LC: Well, like you say, I know they had their weekly meetings, cause he used to tell me about it. I think it was every Friday morning. He was out in the construction area with the hard-hat people and they had their safety meetings every Friday morning. So, I thought they were very serious about it and I think people were called on the carpet regularly, if they abused either.

MS: Did you do any work at the Plant or in this case, with AEC, prior to getting security clearance?

LC: No. No. In fact, we couldn't be put on the rolls until you had your security clearance. Yeah. You know, we had some applicants that we would have considered seriously, but they couldn't get this for one reason or another.

MS: What were the reasons, these people couldn't get their security clearances?

LC: Well, one that I can think of right now, turned out that his dad and then himself were members of the KKK.

MS: Oh.

LC: That took care of that.

MS: What organization that you guys ....

- LC: There were several organization that were listed on the back of that clearance form. I really don't remember; oh, well there one of the Bunts (?), you know, the German Bunts (?).
- MS: Yeah.
- LC: I really don't remember.
- MS: Communist Party?
- LC: Yes. Communist Party, of course. And there may have been some of these crazy sects, you know that the FBI probably had something on them and they wouldn't be accepted. Then you had to be an American Citizen. In some of the categories of the Physicists and all, that was a little different deal, I think, but we didn't have any (??) incidences as I remember. I remember, you know I was there when the, LSD, is that the
- MS: Yeah.
- LC: I got a call from one of the doctors; he was doing a physical, an entry, coming to work physical. But it was not for us, it was for the Forestry Department who had the subcontract out there to take care of the grounds and all. He said, "I have a young man over here, he seems in fine shape, the only thing he had is that he had one LSD pill this morning." He said, "I'm going to deny him." I don't think the guy did. I think he was teasing the doctor. But you didn't tease for that kind of information.
- MS: Okay. Right.
- LC: He didn't get the job. Yeah.
- MS: We talked a little bit about this before, but, were there any security issues or concerns that had an impact on your life offsite?
- LC: It really didn't, you know. Most people knew, that you didn't discuss what went on our there in the Plant; that the Public Information Office gave what was appropriate, that you just didn't. I don't ever remember having any problems with anyone saying, oh you know, you just don't want to say. I don't ever remember anyone saying that. It was just easy to say, well that's just something that doesn't come under my office.
- MS: Yeah. How did working at the Plant effect social relations or travel or attitudes toward the Government and perceptions in the military? That's kind of a shot-gun question.
- LC: Yeah, because how did it effect relations. Hmm. It didn't change as far as I was concerned. Nothing changed. It was just another job and it was a longer drive, you know because at the VA Hospital I almost walked when I worked there.
- MS: Right.
- LC: We were very conscious. For instance, the planes couldn't fly over. We were conscious of that.
- MS: Did you ever see any of the military units that used to be stationed out there briefly?
- LC: I just knew about it. Just knew that there was a group out there. But I don't recall ever seeing them myself. You know, cause I made a beeline for the "A" Building.
- MS: What were the major changes that took place in the areas where you worked during your time there?
- LC: Well of course, I went from the TC Building to the Administration Building. I went down to the TC building because of the gnats. Oh my goodness, that was so bad. And you know, we didn't have air conditioning. We had fans. Now, men, sometimes they could be so stupid. The efficiency experts would come around and were installing fans. Where were they installing the fans? Five or six feet up in the air,

instead of on the floor, where we could feel the coolness, you know. So what did they do up there? All they did were blow the papers off your desk. Golly. So then you'd bring your own fan and put it under your desk.

MS: When did they get AC? Had it always been there, it depends on....

LC: We didn't get AC in the TC Building while I was still there. I don't even know. Did they get AC in the TC Building?

MS: I don't know.

LC: I'm sure they did. But when we moved into the Administration Building, of course it was already built in.

MS: There was air conditioning?

LC: Oh yeah. It was built in. Yeah. In fact there were days when I would give anything to have some fresh air. I said, "I'm going to take this typewriter and throw it through that window, so I can have some fresh air."

MS: You couldn't open the windows?

LC: No. You'd have to go to one end or the other of the building and go down to the stairs to go outdoors for a little bit.

MS: This is kinda off the wall, but back in those early days, I guess you could smoke anywhere, couldn't you?

LC: Oh yeah. Yeah.

MS: Did that change at all?

LC: See, I didn't have the problem because I can't remember that anybody in my little groups smoked. Johnny didn't smoke; Mr. Burgen didn't smoke. You know, I never thought of it. I really didn't. We had one fellow in our carpool who smoked, but I'd laugh at him. By the time we would arrive at the parking lot and pull in, out would come the cigarette. And I would say, "Roy, you did pretty good to last this long." He said, "No, I knew none of you smoked, so I just won't smoke in the car. I'll just wait until we're ready to get out of the car." Smoked his cigarette on his way up to the building.

MS: Were there any major incidents in your area, while you worked there?

LC: No. I don't think so. I think we had things happen with the computer a few times.

MS: When did ya'll first get computers?

LC: The first thing we had was a needle thing. Cards with holes.

MS: Oh yeah. I heard about them.

LC: And across the top where the holes were, each thing indicated something. So if you wanted all males, you'd put it through this slot and it'd bring up all the cards for the males. I really don't know when we got the first computers. But I remember having to fill out the form and send it to Washington. See, we didn't have them there yet. The contractor might have had, but we didn't. We'd fill out the form and send them to Washington and I said, "We just doubled your work, you know. You didn't reduce our work at all. You had one more form to fill out." Then when they finally picked which reports, it was the report that took you three minutes to do. Not the one that took you all day to do. Then they called us; all of us up to Washington. So that was my first trip to Washington.

MS: When was that?

- LC: I think it was in the '60's. They showed us the whole computer room and how the stuff ran off, so you'd have a better appreciation for what you were seeing up there. That it did mean something. Then eventually, our payroll got on computer down here and so we had to make sure we got any changes in Personnel Records to the Payroll Clerk by a certain date, so she could get them down to the....
- MS: You talked about riding to work in a carpool and mainly how they were organized, so they could pretty well ....
- LC: And then the nice thing was it was automatically. You know, you had people coming out of about three different streets. So, we'd come out of the parking lot from the Administration Building from two different exits. And then we got down a little further and there was the DuPont people coming out from the Medical and Personnel Building, I forget what they called it. It was just automatic. People were just so great. They'd put their finger up and one car would go in and then you'd go and then one car would go in and then you'd go and on. Never needed a patrolman or anything there to help. It just was an automatic thing.
- MS: Did anybody ever pay for their rides in the carpool?
- LC: I wouldn't be surprised; because if someone didn't have a car, if they only had one car and had to leave it for their spouse, I wouldn't be surprised.
- MS: This may be something you're not familiar with, but how did Plant Operations and Management change when DuPont left and Westinghouse take over?
- LC: I was gone. I was gone.
- MS: ??
- LC: I can't even say that I've heard. I just know the relations with DuPont had been very good and I'm not sure whether they had begun to deteriorate or if it was that DuPont felt it was time to get out of the business. I think that's what it really was. I really don't know how the association.
- MS: Yeah. How did the newer environmental legislation change operations at all?
- LC: I don't know what you mean.
- MS: This probably started in the '70's, maybe these things occurred after you were already gone. It dealt with, primarily, the operation of the reactors, CT measures, things like that.
- LC: Yeah. I know. I probably wouldn't know anything about that anyhow. Even if I was still working in Personnel, I wouldn't have gotten involved in it.
- MS: These next series of questions are kind of general, but might be useful anyway.
- LC: Okay.
- MS: How has the Plant location and CSRA affected the economy of the area?
- LC: It couldn't have been in town, I tell you. It helps three towns; there were more than that; there was Aiken, North Augusta, Augusta, then there's Allendale and Barnwell, which were just little ol' towns. Of course it helped them because they got people in and Barnwell even got those extra little plants. Williston was only a little country stop in the road, and now it's a pretty nice little town. So I guess, the location was just great for the area.
- MS: How did the Plant and the fact that it's located here, how did it impact the lifestyles here?
- LC: Well, it did. Gee, we actually had some nightclubs during the construction days. We don't have any now; not like I'd think of a nightclub. We've got plenty of places. Things like that developed. There

was very little entertainment, other than the theater here, and with that many people. There were 3 or 4 restaurants; and now we've got restaurants all over the place. Of course, residential development just sky rocketed.

MS: Right. Right.

LC: So, it really did. Gee, the only plants we had there, there was a bakery, a Lily Tulip, and the cotton mills. And I think Wilson Shores or something like that, had a distribution plant here.

MS: Did the Plant cause any swings in the area's economy?

LC: I think so. I think so. During the construction days, it was really like a boom time. Then of course, it had to slow down. The Company had become more normal.

MS: Right. Were there any housing shortages in the area?

LC: Definitely. Definitely. Yeah.

MS: What was done by communities and residents to provide places for employees and prospective employees?

LC: Well a lot of people, like I said, they build those barracks in Williston and over in those areas. Although, they did not get filled up; people preferred living in the bigger towns or cities. But I think everyone who had a room available rented it. Some of these big houses, old houses immediately got converted into little efficiency apartments.

MS: Right. Did the people ever rent spaces in the yards of the apartments?

LC: I don't know. I really don't know. But I would assume so. I really don't know though.

MS: How did the economy and lifestyles change during periods of lesser activity at the Plant?

LC: Well, you could always hear there were places to rent, and houses for sale.

MS: How was education impacted by the ....

LC: That's something that for a while, I know 'cause my bosses were very active in working in Aiken to improve the schools. That's were they wanted their children to go to school and they worked toward having the Department of Education upgrade everything. Of course, Augusta College was just a little two-year junior college. It began to get more people and grow and we didn't even have Augusta Tech until then. Didn't have Aiken Tech. That was something I think the Plant definitely helped produce, 'cause several of us were on little committees to help them decide what courses to offer at the technical schools. I went to Aiken Tech one time to speak to them when they were getting ready to graduate from the business, you know, shorthand and typing. My boss sent me over to talk them about what it was like to talk to the government.

MS: Have any politics been influenced by the Plant being here?

LC: Oh, I think so, because Augusta was a cracker party. I don't know what Aiken was. But, you registered as a Democrat in order to be able to vote. It didn't matter if you were Republican or Independent or what. You registered as a Democrat. That was the only thing that was offered. So, yes.

MS: What about the public participation on issues such as Nuclear Power and the Environment?

LC: Well, you always had the group like Greenspan that had something to say about if we had a leak or if something happened out there, what was going to happen to us.

MS: It's Greenpeace, right?

- LC: Greenpeace. Oh, Greenspan, that's the man. Yeah, Greenpeace. There was always groups that had something to say about it and it's probably just as well, because it made everybody look hard at what they were doing and made sure they didn't let things like this happen, like this last little Plutonium business.
- MS: Oh, yeah. Right.
- LC: Yeah. And the time those two guys, this was a long time ago, the hot water scalded them. They were working in the boiler and something popped. That was quite some time ago. So, yes, there always somebody. I don't think anybody really was scared though. I don't think anyone feared; they used to ask me, "Aren't you afraid to work." I used to say, what am I afraid of? I don't know what to be afraid of.
- MS: Right. Was that probably a typical reaction at the time?
- LC: I think so. I think so.
- MS: Was that started from ....
- LC: Probably reading the newspaper. You know, they can do more to harm as well as help. I think that was more newspaper stuff because the Public Information Office always sent things out to inform the people. But, the newspapers could always make it sound like they wanted it to be, I'm sorry to say that, but that's how I feel about them. If you were there and you were aware of how carefully everything was done, you didn't have to fear.
- MS: Right. What about the community services, like utilities, roads, police?
- LC: Well, that of course, that increased in all the areas. It had to increase. The roads, well you see where they built roads. It took a little while, but that was understandable. The money had to come from somewhere to do that; and also to get the property. The Fire Departments and the Police Departments had to grow. The Plant people were behind them on that. You know, they helped where they could, to encourage and send people in for training and all that sort of thing.
- MS: I know we only talked about this briefly, but did crime ever increase or decrease due to, like the mood conditions?
- LC: No, I really don't know. I would assume it had to have increased, but then that was, probably not anymore percentage wise by the number of people, you know?
- MS: Now, do you feel that the location of the Plant here has increased or decreased the incidents of gambling, prostitution, drug use, or alcoholism?
- LC: Well, we had our period of times with the prostitution, but the police stayed with it pretty well, I think. We had little clubs that were in weird spots. I don't know how to say. If it increased, it's only because it was that many more people.
- MS: We talked about this earlier too, about how the entertainment has changed. What did people do for entertainment back in the early days and ....
- LC: You mean before the Plant?
- MS: Well, if you have ....
- LC: Before the Plant? Well, you know we had, the Richmond Hotel had a nice dance floor, so periodically there'd be nice dancing. The Bon Air Hotel had a beautiful dance floor; down on Green Street. So dances were one of the things. There were no nightclubs. I can't even remember a restaurant with a postage stamp of a dance floor on it back when I first came. Fort Gordon would have entertainment, and

then of course, there were three theaters when I first came here. Then there were two drive-in theaters. That was very popular. Then when the Plant came, boy we immediately got the Savannah River Club and I forgot the one down on Sandbar Ferry Road, and another one out toward Fort Gordon. We got several clubs. And they, actually, had acts, comedians, I mean real good shows and dinner and dancing. It didn't last too many years though; the good clubs. They just lasted, I think, during the very heights of construction and then they died right out. But in the meantime, other groups came in, like we have today. And, one at a time, you got these little clubs that would bring in someone over the weekend. So we do have really more. Well, we always had the music, what do you call it? The group that brought in classical things and we had the Augusta Players. There was always the Augusta Players, and the Choral Society. So those were the original things, and those have held. Those have stayed.

MS: What about the Operations Recreation Association?

LC: Well, that's right. They did have, I didn't get involved with them, because we had our own. But we used to have picnics in the old Banana, what was it called? The Banana, it's where the pumps are at the Plant. We used to have picnics there and we used to have dances quite often.

MS: The Operations Recreation Association?

LC: Well, it was the DuPont people that had their own recreation group and then they had their own parties. They'd have family parties. There was an area, it seems like you'd go down past the Administration Building before you get to the end. There was a big area in there that they had made into park. We could have the kids and have picnics, big picnics and everything. And then they had their own wine-tasting party, dances. Maybe a bus group would go to the beach or go to Atlanta or something like that. And of course, that was for the DuPont people. Well, so many of the AEC people got involved because they were the wife or husband of a DuPont'er.

MS: Right. Basically you didn't have anything ....

LC: We had our own.

MS: You had your own?

LC: We had our own.

MS: Let me ask you, how many people worked for the AEC side of it?

LC: Well, when I first went, we had, it seemed like there was 363 people. It slowly decreased down to 160 I think, something like that. Then it began to grow again. I have no idea how many they have now. It depended on if AEC or the Department of Energy got another grant of some kind to do some other work and the contractor had to put on more employees, which I used to think that was so stupid. You got them there, don't put on anymore, but they would. Then, often times, the Government side would have to bring in a few more people to coordinate. The most, I don't think it was every over the 360, cause, like I say, they were strictly an overseeing group.

MS: How often did they have to oversee?

LC: It was a daily thing. It was a daily thing. The guys in the Technical and Engineering, they were out in the field every day. Somebody was out in the field every day with whatever was going on.

MS: This next series of questions are for those people who worked at the Plant for a long period of time. Is there anything that stands out in your mind as the greatest accomplishment at the Plant during this history?

- LC: I think what the greatest accomplishments was, what's the, I can't even think of it. The medical, what the heck was the name of that thing?
- MS: Oh, the name of a special ....
- LC: Yeah, you know, for ....
- MS: Cobalt-60?
- LC: Cobalt-60 or 90, Cobalt, what was it?
- MS: Cobalt-60.
- LC: Cobalt-60, ok, yeah.
- MS: And then there was Californium.
- LC: Californium. To me, those were the biggest accomplishments, because it's something that could be used on and on and on; not just something that's done for today, like a bomb. Of course, I suppose too, the development, which allowed the Nuclear Plants to be build for electricity, like, you know Vogel, and down in Florida there's Turkey Point.
- MS: Did you have any association with the HWCTR Project?
- LC: No.
- MS: Okay. Does anything stand out as the greatest problem, or any particular problem?
- LC: Problem? Yes, spent too much money. I always objected to this splash of hiring a bunch of people, when you knew darn well, in two or three months you were going to have to be laying off. To me, I always felt like, of course I'm afraid I feel that way about government anyhow a little bit, that they don't maybe use good, what's the word I want? The talk about efficiency experts, but I don't thing they are so efficient.
- MS: Do you think the Plant operated more effectively during certain periods than other times?
- LC: Well, I think at the beginning it was very different. I think everybody was keyed up and everyone knew that it was something very, very special. I guess in later times, it got a little on the sloppy side.
- MS: Yeah. So the next questions are, can you describe your feelings about your work, or the aspect of your work which you identify most closely with the Plant itself, or the contractor, the Government, the mission?
- LC: Of course, I happened to like my job very much. I like people and so that was good because I had daily association with the employees and sometimes you didn't have to do a thing; just listen. And I liked the opportunities I had of visiting the colleges and recruiting. I happened to like that very much. I liked representing the Government. You know, my mother and dad were both born in Italy, and they were so proud of becoming American Citizens and they were very proud that somebody went to work for the Government.
- MS: What part of Italy?
- LC: My dad came from a little town outside of Rome, and my mother came from a little, tiny town half way between Naples and Rome; San Giovanni Ancatio (?)
- MS: All right. I'll have to check it, you might have to spell it for me. What about the questions about the health protection? Can you describe the general health protection measures taken in SRS to provide safe working conditions? Got a loaded question for you.
- MS: Well, I thought we certainly had everything right in our Building. They made sure the floors weren't slippery, for instance, you know, use the wrong thing on floors. Everything was kept very clean. Our office equipment was checked periodically. When we had access, of course, to the Medical Department,

so the least little thing, you could send someone over to be checked. Our bosses were conscious of their employees. If you sent someone home, if we had occasion for someone who imbibed a little too much and we made arrangements; in fact, I was the one who took her to a hospital, whatever they call it, a drying out place. We made arrangements for her to be taken care of. We were very considerate of our employees.

MS: So it was pretty much, was it a broad program to ensure a safe work environment?

LC: I never thought of it as being a program; but I'm pretty there had to be. Sure. Sure.

MS: What was the most important measure taken to ensure worker health and safety, that you might recall?

LC: Seeing it just in an office building is different than if it were out in the field.

MS: Right.

LC: Like I said, being careful that the floors were clean and all and that your office equipment was in good condition 'cause I remember our filing cabinets, they always nailed them to the wall so when you pulled two drawers out, the thing wouldn't come on top of you. Little things like that were done.

MS: There was a lot of attention to detail.

LC: Yeah. I thought there was.

MS: Were there any changes over time concerning safety?

LC: I can't think of anything.

MS: This may not be something that you would have your job. What powers did health protection workers have to locate, stop, or change unsafe conditions?

LC: I think the Medical Department could send out memos or whatever to warn against things and I'm sure if they recognized anything, it was taken care of. It would be done. It would be done, I'm sure. Even the safety meetings and all, if something came up you know in one of those meetings, 'cause we even had a small safety office, and engineer and his secretary. I think he had one Assistant Engineer that coordinated with the contractor on all safety problems.

MS: Yeah. Were there any management organizational practices or changes that affected the ability to ensure employee health and safety?

LC: Not that I know of. I just thought it was always there.

MS: Again, we mentioned this very briefly and as far as you can remember, what were the other military products or items produced in this SRS and other products like Californium?

LC: Yeah, Californium. I just know the heavy water, the Tritium, the break up of whatever they did to the Atom and the Californium and Cobalt-60.

MS: Did you ever see Glen Seeborg? He was the President of AEC.

LC: I don't think I saw Seeborg. I was, who was the other one?

MS: Boyer?

LC: Gosh, his name comes up in my crossword puzzles every once in a while. Oh shoot. Isn't that awful, I can't remember. Boy, don't get to be my age. That's the first thing to go is the names, names, it just kills me.

MS: I think I'm at that age already!

LC: Oh, it's awful. It makes me so mad.

MS: Was he like earlier than Seeborg or was it the top guy?

- LC: Yeah. Well I'm talking about the chairman of the AEC. Yeah. Boy, isn't that just awful? Well, I just can't remember. I know the minute it comes up, I'm gonna ....
- MS: Housewater?
- LC: That's not the one I'm thinking of.
- MS: Okay. Right.
- LC: I think there were four different ones in that period of time.
- MS: But they came to visit the site?
- LC: Yes. I didn't get to see any of them. They go right up to the Manager's office.
- MS: How about when the top people from Washington come down to the Savannah River Site?
- LC: I guess there'd be someone there every couple of months for one reason or another. You know it wouldn't matter. Sometimes it would be on the business side; sometimes it'd be on Administrative, sometimes it'd be budget, sometimes it be in Personnel. So, really, somebody came down often enough. Of course, our poor ole engineers and technical guys, they were on the road all the time. Somebody would say, " Oh, you have such an exciting job." He says, "I wish they had to do what I have to do." Now, I guess with the Internet, they don't have to worry them so much.
- MS: At your house, you don't have any particular items or anything that you'd like to donate or loan to the History project?
- LC: You know what I have? Just wait and see if I can find it.
- MS: Okay. We're just taking a break looking at the Awards Ceremony for Laura's retirement. You had an award for ....
- LC: I had an award for Superior Performance. I thought maybe I'd find that in the file, but I didn't see it. It had to be in the '60's; the early '60's I think.
- MS: They got the awards for, how many days?
- LC: Oh, then I got over 13 years without a sick leave. Of course, that added a year to my retirement years.
- MS: What kind of retirement plan did the AEC have?
- LC: Well, we paid into it and then the Government matched it. It started out at 3 and a half percent by the time I finished.
- MS: 3 and a half percent of?
- LC: 3 and a half percent of your salary.
- MS: Okay. That's how much you could put in.
- LC: Put in. Then it went to 4 and then it went to 4 and a half, then it went to 5, and I can't remember how much it was when we were retired. Now we were not on Social Security. Now, they are also on Social Security.
- MS: Why not?
- LC: The Federal people were not on Social Security in the early days, because we had a pension plan.
- MS: Okay. Okay.
- LC: See? So then you could retire at 55 with 30 years of service; then at 60, 65 and I think at 70 it was mandatory. I'm not sure that it's mandatory anymore. I happened to retire at 57 with almost 32 years of service.
- MS: And Social Security was not ....

- LC: It was not, if you had another job, if you had a side job, of course you were paying into Social Security. But our Federal wasn't. Sometime after I left, they changed that. Then we had the good health insurance program, which started, I think, in 1962 and there were several different companies that participated in the Federal Employees Health Benefits plan. And you carried that into retirement. You pay, basically it was supposed to be half and half; I think it probably still is.
- MS: Yeah. Do you know anything about what DuPont did?
- LC: They had a pension plan also. I think, and it was also an age and years. If I remember right, they had a situation where so many years at any age. But they even had, it seems to me that some of them used to say, "I've got to get 15 years in, so that my pension plan remains." But it was under that and they quit. I don't know. I don't know exactly what theirs was like. But, apparently, it was a pretty good plan.
- MS: Okay. Let's see. Are there any other issues that you'd like to bring up?
- LC: Can't think, except how when a little red fox would run across the lawn, everybody would run to the window.
- MS: Got wildlife there.
- LC: That's right. My son got a summer job while he was in college out in the Forestry Department and periodically they would have to slaughter either a deer or boar or something to measure if there was any radiation or whatever getting into it. So often times we would have a nice piece of pork.
- MS: Did they encourage any kind of recreation at any of the lakes they had at the Savannah River?
- LC: No. No. No. I don't know what they do now, but we didn't. Well you know, what was, the watchacall pond, what was it called?
- MS: Par Pond.
- LC: Par Pond. That was the hot water coming out of the reactor, so you wouldn't do that. Then, down at the River where the pumps were, you didn't need to have anybody around that. But when it was Banana Crate Company, I think it was, it had a plantation out there and in the early days, we could go out there and have our picnics.
- MS: Where was that in relation to the Plant?
- LC: It was over on the River's side. I think it was between Beech Island and the Plant, if I remember right.
- MS: What do you think you remember about the towns that were displaced ....
- LC: I didn't even know Ellenton, 'cause I didn't have a car at that time. I didn't travel around very much. But that was sad in a way. However, they did move those people, bodily, houses and all if they wanted them over to what is New Ellenton now. Some of the old Ellenton people feel they were not treated exactly right. And, of course, if I was uprooted, it'd be my grandfather and great grandfather and all the way back, I might feel the same way. I don't know how the younger generations feel now. Look how many years it is now; soon to be 50 years. But, and then I think there were some little, tiny towns that I didn't even know what their names were.
- MS: I think it was like a....
- LC: There weren't actually that many people displaced, in numbers.
- MS: Like Dunbarton?
- LC: Dunbarton. Yes. Yes. Yes.
- MS: That's actually smaller than Ellenton.

- LC: Right. And then even the cemeteries. They either agreed to leave them and people were given permission to go to the cemetery or they moved them totally. Mostly, I think they left them.
- MS: When they first announced that there was going to be the Plant here, did they give any explanation about why they were putting it here versus any other location?
- LC: I'm sure they did. I just don't remember. It was a spot that was sparsely populated; it was a spot where work could be done year round indoor and out; it had the river and it just would not impact like a big city or anything. It would, in fact, help the area. I know they had several places to consider and I'm sure that Strom Thurman and all those people really went to bat to get it here, because this area did not have industry.
- MS: That covers all the questions I've got right now to ask to ask.
- LC: You'll talk to someone else, you'll think of ....
- MS: I think while the tape recorder is still running, if you'll go ahead and sign that release for me, if you don't mind.
- LC: Oh, okay. I'll be glad to. I'm trying to think of other things that happened over the years. It's funny. Something will come to you when something else happens. We had a carpool of 5 women. We were one of, I think at the time we were written up in the Savannah River News.
- MS: Oh, really?
- LC: As being the only all female carpool. Now let's see. Then later we got this young fellow as a trainee. I think he was a summertime. And he was so funny. He could tell one joke after the other. 7 O'clock in the morning, we're riding to work and we're all laughing. The other cars would catch us later and they, what were you guys doing this morning? Everybody was laughing. So we started our day off very well.
- MS: You said you were, like, the only all female carpool for a while. Was everybody going to work at the Atomic Energy Commission?
- LC: Yeah. We were all ....
- MS: I guess carpooling was kind of separated out as to where you worked.
- LC: It did. Definitely did. Although, we did have one person and he or she, whichever it was, and it must have been another carpool similar. They had somebody; 'cause beside where you worked, it was where you lived. You didn't run all over town to pick up. They would, whoever got there first would wait and this person would get into the car of the other and then head out to one of the areas.
- MS: Right. Yeah. Do you know how much gas cost back then?
- LC: Oh, gosh. Well, you know, Augusta has always had low gas cost anyhow. I can think way back. I can remember when it was 25 cents a gallon. But I really don't remember how much it was here. But, of course, it was always under a dollar.
- MS: Yeah. Right.
- LC: When I had my 80th birthday, I was real honored. Nat Stetson was the Plant Manager when I retired and I had known Nat as just a GS11 Engineer. When he first came, he worked across the hall from me and I used to do his typing for him. He came to my party. I don't know how my kids got word to him, you know. And my boss; immediate boss, who had left Savannah River and gone to Washington and now he's retired in Alabama. He got a note from my kids and he said, "We've been wanting to come to Augusta and it's the perfect time." It was so wonderful of those two people to show up. It really was just wonderful.

- MS: I think that Nat Stetson is going to be one of the people we're going to try and interview.
- LC: Well, I hope you can.
- MS: Yeah. I think he's on my list.
- LC: I got ticked at him. I shouldn't say this probably. He says, "Are you sure you want to retire?" I told him five years before. I said when my take home pay equals my, when my retirement pay equals my take home pay, I'm going to retire. 'Cause if I can live on it, and now my children will all be out of college. So I'll be money in. And when I got ready to leave, he said, "Laura, I really don't want you to go, but I'm going to tell you something. You're leaving at the best time." He already knew, I guess, that it was going to go from AEC to whatever it went to and then it went to Department of Energy and it went to something else in between.
- MS: Yes. That's right.
- LC: He said, "You're leaving at the best time."
- MS: What was it like when you retired? It was on the cusp of turning to ....
- LC: Yeah.
- MS: The Department of Research or something like that.
- LC: Yeah. Something like that, yeah. Well, you see, I didn't know anything about it. Yeah, I didn't know anything about it.
- MS: Okay. I was wondering why the ....
- LC: Oh, hey, this regular Civil Service Departments couldn't stand it, that we had accepted, that we were an accepted agency. There were certain things we could do that they couldn't do, you know. That always killed the Civil Service Department. And that is true. We never, we tried very hard to abide by the Civil Service Requirements, but we had certain things because we were highly, I'll use the word "secretive". You know, we had things that couldn't be just thrown out like the other did. And so, it had to be an accepted situation. Then gradually as they decided the needed to know people needed to know everything. I never felt that people needed to know everything.
- MS: Right. Yeah. What changes did see in the Atomic Energy Commission over the times you worked there?
- LC: You mean while I was working?
- MS: Yeah.
- LC: Not a whole lot of changes. I think we stuck pretty much to the basic premise on which it was established.
- MS: Was there, I think, a move to change the Atomic Energy Commission while you were working there, that you recall?
- LC: No. I don't remember there was anything actually done.
- MS: Anything in the background as to why they changed The Atomic Energy Commission during ....
- LC: I strictly think it was because the Civil Service Commission just insisted that there should not be anything that was excepted from the rules. I've never been able to find anything anywhere else as a reason for this. Unless, somewhere along the line, there was some abuse that I didn't know about, and then it would be important to get other. But, hey, I worked during World War II. I was going to go to work for the Department of the Army and instead I went with the War Pricing Rationing Board. A girl came to work with us and she said, "I couldn't stand it there anymore. I didn't have anything to do. There were three

- of us sitting in that office and there wasn't enough work for one." I said, "That's the Department of Army. They've got their budget, they're going to use every penny of it, rather than turn anything back." But, of course, all government agencies are like that. But, I've always felt that too many of the Government Agencies abuse the privilege. I don't mean to be, you know, but I just feel that way because I've seen it.
- MS: Right. Yeah. What was the big difference between, let's say, working for the War Ration Board and the VA?
- LC: The War Pricing Ration Board and the VA. I worked for the VA Hospital too.
- MS: What was the difference between doing that kind of work and then working for the agency?
- LC: Well, of course, this was such a much higher caliber of thinking. War Pricing Ration Board was, that was a little bit of a pressure job. You had your committees to approve or disapprove of the requests that people came in with. You had people who tried to force you into letting them have something, you know. You had scads of people coming in on certain days of the week and they were standing all over, everywhere and you just had to keep your composure and take them one at a time. You had lots of changes in regulations. I would just take them home and read them. When I'd get in the next morning, I had, there were 5 of us working there and I was the Chief Clerk and I'd say to Agnes, "Here's a section you need to read this, cause you might have this come up today" and you know, divide the thing up. You had situations where ration boards were broken into to get the gas stamps. We were fortunate. You had people really greedy, you know, "I'll give you ten bucks if you give me a certificate" and things like that. "Well, I'm sorry I can't give you the certificate. It's not my business to give it to you." Crazy little things like that. I remember one time, I went down to my car and there was a case of liquor. I will never know. In my mind I think I know who put that in there. I had never done anything for anybody that wasn't proper. I just was brought up that way and wouldn't do it. What could I do with it?
- MS: Yeah. I guess somebody thought you'd done them a favor.
- LC: Gee. I went home with that and I gave it to my daddy and he said, "What did you give him?" I said I don't know who put this in here.
- MS: I guess you shouldn't get stuff like that at ....?
- LC: A little different situation. At the VA, that was very good. 'cause I worked here at the Veterans Hospital, the psychiatric hospital. I enjoyed that all right, but my whole purpose for leaving there was I had two children to raise and I wasn't getting anywhere. I was ambitious enough that I wanted to keep moving. So, I looked around and the minute I'd hear of something I'd check into it.
- MS: I can't think of any other questions to ask right off the bat. If you don't mind, I would like you to give me a holler later on and we can come up with some additional questions.
- LC: That's fine.
- MS: I guess, we'll close the machine off. We turned the machine back on.
- LC: I always said I was privileged to work with that caliber of people. I didn't have an extensive education, but what I got I learned and picked up and held on to. Learned everything I could so that I never felt inferior. But I just was, I just thought it was wonderful that I could work with people. Boy, I'll tell you, some of those men out there were just top notch. I just look back and think how great it was to have worked with them.
- MS: Let me stop this tape and turn it over.

**SIDE TWO**

- MS: Let me ask you about Nat Stetson. You worked with him earlier on.
- LC: I did. I did. When he first came to work with us as a young engineer, he happened to be, his office was right across the hall from where I was working. I used to type a lot of his papers for him. He was just a brilliant, young man. He moved right on up to become the Manager. He was fair, he was considerate; he just was, I just thought he was a fine person; always have, and continue to think so.
- MS: When did he take over as Manager?
- LC: Oh, golly. I really can't tell that. I think he was manager several years before I retired.
- MS: He was the manager of ....
- LC: The Savannah River Operations office, right.
- MS: Who did he work with that was part ....?
- LC: Oh, who was the guy at DuPont? Gee, I knew his name as well as anything. You know I've been gone from there 26 years. I just don't remember these names. Isn't that awful. Can't remember a name on the DuPont side right now.
- MS: Okay.
- LC: Whoever was the manager at that time. But they were always great individuals too, DuPont's top management.
- MS: Right. Yeah. It sounds like a really nice place to work.
- LC: It really was, it really was.
- MS: Okay, I guess that'll be it. I'll shut the machine off for the final time now.

**END OF INTERVIEW**

## Oral History Interview – Harold Harmon

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Born on February 23, 1928, in Lexington, South Carolina, Harold Harmon got his degree in mechanical engineering at the University of South Carolina. It was during this period that construction began on the facilities at Savannah River Plant. After graduation, Harmon served in the Navy for a couple of years. He applied for a position at the Plant in early 1955, and began work there in April of that year.

Harmon's first job was to work with the start-up crew for Building 221-H. He was the last person to walk in the hot canyon before operations began there in August of 1955. In 1958, he was transferred to the Special Products Department, so called because at that time, the very word "tritium" was still classified. Harmon worked in both F and H area tritium facilities as a shift supervisor.

Harmon left tritium in 1975 to manage the Du Pont Patrol Division and the Security Division. Wackenhut took over the responsibilities of the Patrol Division in 1983-84, but Harmon remained in charge of Security from 1984 to 1987. After that, he returned to tritium until his retirement in 1993.

**Interviewee:** Harold Harmon

**Interviewer:** Steve Gaither, New South Associates

**Date of Interview:** June 17, 1999

Interview with Harold Harmon as being conducted by Steve Gaither, historian with New South Associates. It takes place on the 17th of June, 1999 at Mr. Harmon's residence. The interview is being conducted as part of the Savannah River Site History Project, which is documenting the 50-year history of the site and its impact on the surrounding area. Mr. Harmon is being interviewed primarily because of his work in Tritium and in Security at the Site.

Steve Gaither: Mr. Harmon, can I get your Date of Birth?

Harold Harmon: Yes. February 23, 1928.

SG: You said you were born in Lexington?

HH: South Carolina.

SG: Lexington, South Carolina. What were you doing before the Plant came to the area before that was announced?

HH: Going to school. Went to High School in Spartanburg, South Carolina. I went through the University of South Carolina at Kleindale. Had a degree in Mechanical Engineering. While I was there, is when the Plant opened. Upon graduating from the University of South Carolina, I was in the ROTC program and I received a commission and went on active duty again for two years. I was on active duty as an enlisted person in the Navy, prior to going to college, during high school and college. I had two years active duty then. So, when I come out of the Navy in January of 1955, that's when I was interviewed for the Plant. I came to work at the Plant on April 4, 1955.

SG: When the Plant was first announced, do you remember anything about the local reactions, how did people, what did people think?

HH: Well, it was announced in the paper as The H Bomb Plant. The enthusiasm around, even up to 50 miles away was a lot of people wanted to work down here. Recently, I think the construction force, which I was not a member of; I come in Operations after most of the Plant was built, but I think it reached about 50,000 construction workers and a lot of people from around up home were excited about the good money they was making down here, and so forth. So, I don't recall any adverse thing about the announcement of the Plant, so forth like that.

SG: Nobody had brought up things that they didn't like about bringing a Plant like that here?

HH: I never heard of any, where I lived up there and also in Columbia, while I was going to College. But, I'm sure that Ol' Ellenton, those little towns that they moved the people out of and relocated them, I think a lot of them was pretty bitter about having to leave their homes and stuff like that.

SG: During construction, do you know where people from the Lexington and Spartanburg area, were they commuting out here to work at the Plant?

HH: Yes. Yes. All the ones I knew, were commuting.

SG: Did the economic impact of the Plant reach up there?

HH: Somewhat. Yes. Yes. I know when I went to work here, I commuted for two years.

- SG: From Columbia?
- HH: From Lexington.
- SG: Oh, from Lexington.
- HH: Just an hour's drive down here. After two years I decided to move; so we come to Aiken.
- SG: Were you in a carpool, when you were commuting?
- HH: Yes. We had a carpool; a five-man carpool from Lexington down there.
- SG: Were there several carpools from there?
- HH: Oh, yes. Yes. Oh, Yeah.
- SG: Why did you want to work at the Plant?
- HH: Well, I have a degree in Mechanical Engineering and I was an Officer in the Navy and I interviewed down here. Interviewed at several other places, Goodyear in Akron, Ohio, some other places, and I just wanted to be a little closer to home having been in the Navy a total of 4 years and so forth. This was really my first professional job. I was either in the Nave or in school before I come here. But anyway, I was excited about mainly what was going on. I didn't know anything about what was going on, but I was excited about the Plant and so forth. That's why I got 3 offers of jobs and this was one of them, so the wife and I decided to take this one here.
- SG: You mentioned that you had gotten 3 offers? One was Akron, Ohio you said?
- HH: Yeah. Goodyear in Akron and also the company out of Memphis, which I interviewed for and so forth. They own the Plant over here on the river, I can't recall the name of it right now, but they offered me a job also and the Portman Cement of Alabama offered me a job as a sales rep for the state. Kimberly Clark's the one. They contacted me when I was getting out of the Navy and so I had 4 offers really. I forgot about Portman Cement Company. Yeah, Kimberly Clark did. That was before they build this large Plant over here.
- SG: Before Kimberly Clark?
- HH: Yes. Yes. I think they were going to Memphis, working in Memphis or somewhere like that. I chose this because it sounded like an exciting thing to do. When I was aboard ship, the Bow ship New Jersey, in the Korean War, I had just got out of college, we had to wear dosimeters. I was a Gunny Officer. I don't dat most of the time. You had to wear dosimeters. Every 50 person on the ship had to wear that because they would rig the dosimeters to try to detect if the North Koreans used any Atomic weapons, Nuclear Weapons. So, that's kinda of interesting and I knew they was building something here along that lines, so that kind of roused my interest to come down here and see what's going on.
- SG: Do you think your service in the Navy influenced your choice of taking this job?
- HH: I think so, a little bit, by what I just told you about.
- SG: Right. Right.
- HH: Having to wear those dosimeters over in Korea in combat, which, actually it was intriguing to find out all about that and what it was.
- SG: You know, today when people think of Nuclear Energy, they usually think of waste and dangers and things like that but you're saying you thought it was interesting.
- HH: Yes.

- SG: Is there any example that you can give us to illustrate how the thoughts toward Nuclear Industry and Broad Nuclear issues were different back in the 1950's than they are today?
- HH: Well, the horrendous World War II, when I went in the Navy the first time, World War II had just ended. It ended primarily with Japan because of the Hiroshima/Nagasaki Bombing, the first atomic weapon/ bombs used on any Country. But then in the military, after that and all the ones they were happy about that, because, as I understand it, the, I had three brothers in the military and two brother-in-laws. When I went in, there were 6 of us from one family in the military. Several of them was getting lined up for the invasion in Japan. They had predicted that the total casualties for an invasion of Japan would be about a million counting the Japanese citizens, a million casualties. A million killed! The two bombs really stopped that. The invasion forces were getting ready. They were preparing to do that. Well, that Atomic Weapon shortened the war with Japan, of course and prevented that invasion that was gonna cost many, many more. Tens of thousands more of American lives and maybe even more than that. But, the feeling for people I was around was, "you know that's a pretty great weapon to have." We had no, I had no fear of the waste or anything like, radiation at that time. I don't have now. The feeling today about a lot of people, a lot of the Anti-Nuclear People comes about after the fact that you take the waste that you're wasting. You know you can't have omelets without having egg shells left over. The waste is left over from making the Plutonium and Tritium and so forth. The waste is necessary to have made that material. DuPont, the latest state of the art, stored that stuff in tanks out at the Plant, double-walled tanks, a controlled everything and did everything the best on the market and of design at the time. You can go back and second guess anything and say, you should do this, you shouldn't do that, but I feel that the DuPont confidence was what designed the Plant, built it. As you know, President Truman asked Crawford Greenwald, who was CEO of DuPont, "Would you come and design built this Plant." Cause DuPont had experience with Hanford Washington and Oak Ridge and part of the original force when the first Reactor went hot. So, the DuPont built the Plant, started up, ran it with one of the best safety records in the World during all those years they ran it. All the Reactors, they had 5 Reactors going at one time. They were a very conservative company, utterly safe in every thing they did and so, the people who criticized anything like that, of course, they can certainly have their own opinion. But, I feel like the boosted weapon, the Hydrogen Weapon, was the main thing that this Plant did out here to support that effort. I believe that strong, overwhelming, Nuclear force we had; the number of weapons we had and so forth, is what kept Russia from attacking the United States. That's my own personal opinion. And additionally, come down to pulling for Communism was so called phased out in Russia. I think that was the deciding factor in that whole thing, was the advantage we had over Russia during all those Cold War Years, with the Nuclear weapon we had which we could deploy.
- SG: Was there, also in the '50's, thoughts of peaceful uses of Nuclear Energy? Did people talk about the possibilities?
- HH: Yes. There was talk about a lot of different things that could use like, electricity and so forth and everything, medicine and all kind of things coming out of it, so, but in the early years I heard very little criticism about, from anyone, the Plant being near or anything like that.
- SG: So, you applied in January of 1955.
- HH: Yes. February.

- SG: February, and came to work, what? That summer?
- HH: I came to work April 4, 1955.
- SG: What was your first job?
- HH: The first job was, I was put up with the start-up crew of Two Hundred H Canyon Building, 221H. There were about 15-20 engineers and a start-up crew checking out everything, constructions completing the building. We were going through checklists. I was one of the last people that ever walked down through the canyon, the hot canyons of 221H. I actually walked through the basin, the floor, you know where the tanks are.
- SG: The process area was closed?
- HH: Yes. Yeah. Inspecting it, several of us, and point out things that needed to be down by construction. 221H Canyon Building starting processing, went hot in August of 1955.
- SG: When you were walking down the hot canyon, you knew that it was going to be closed up and nobody could ever go down there?
- HH: Oh yeah. Yeah.
- SG: Was that a lot of pressure, to make sure you caught everything?
- HH: No. Well, I mean, we knew how important it was and everything should work and so, we were checking things, even insignificant. Like, Armacoat was a coating on the concrete where acid spilled into the canyon. It ate into the concrete. So we inspected anything, like if equipment had scratched some of the Armacoat, we point that out and everything so they could repair that. Even little detailed stuff like that. Checked and double-checked and checked. Many cold runs before they went radioactive on all the pipes and system pumps and so forth, to make sure they would do what they were supposed to do.
- SG: When it went hot, were you confident that everything had been checked out?
- HH: Yes. I just was one engineer in a part of a whole group there doing this. Yes, and then I became supervisor in the Hot Control Room on shift. Shift supervisor operating it. I worked in the Hot Control Room and also in the Warm Control Room for a period of about 2 and a half years.
- SG: What's involved in supervising now, the control rooms?
- HH: Well, the control room, they're about 40-50 feet long. It's full of gauges and controls and it processed the liquid stuff through the mixed settler, all kinds of processors and just a matter of having operators with record books, checking everything, recording gauges and turning switches for valve opening and stuff like that. It was real interesting.
- SG: Were there lots of decisions to make, or was everything pretty much set out in your procedure manuals?
- HH: Well, the one thing that made DuPont so successful at the Plant was they had very good procedures. I know Paul Moore, who was the area superintendent 221H, in charge of it. I remember how insistent he was at how every procedure had to be right, of course, it had to be approved by technical and so forth, and several groups. He was a very strong person; insistent on good procedures. The shift supervisor is like working there now. He's responsible for that shift, what goes on, interpreting some things on the panel board or making sure his operators are alert and doing their job and stuff like that. He had a lot of emergency procedures he had to know in case something went wrong, he'd know what to do and so forth.
- SG: You said Mr. Moore was very much a stickler for policy and procedure?

- HH: Yes, for initially getting procedures written and getting written correctly and adequate to cover everything, every detail of operation. All of the procedures had to be approved by separation technology, another separate group. I was in the Operations part, the production part. But they had to be approved by the Separation Technology People.
- SG: And so it was kind of a Quality Controlled?
- HH: Absolutely. Yes. They were there all the time, you know, not necessarily on shift, but they would review all the run books after they were completed and so forth. Over site type thing and they were available any time, day or night if you had any questions about anything.
- SG: Where did you move, after you left 221H?
- HH: In January of '58 I moved to the Special Products department. Special Products Department, at that time, was the Tritium Department. At that time, it was highly classified that we had any Tritium on the Plant or we even made Tritium. So, it was called Special Products. I transferred there as the Shift Supervisor and went on shift. It was the same kind of panel board only smaller than what they had at the Canyon, but working a crew of operators on shift with you and rotating shifts schedule. That was very exciting. You can see and feel the end product going out of the Building,
- SG: And you couldn't in the Canyons?
- HH: No. The Canyon, well, excuse me. You couldn't in B Line, JB Line. I did not work in B Line. In the Canyons, all there was were the processors and gauges and tanks, instrumentation type watching, so you could never, you could feel you were processing a product, but in Tritium while you worked there, you could feel that product and touch it when it was packaged up and sent to the military. So there was a little different feeling there.
- SG: Unless you were at final product that was going out.
- HH: Yes. That was it; final product going out of the Plant, the tritium final product, right. Of course, the Canyons sent Plutonium buttons out.
- SG: Those were buttons that they would separate after fabricated.
- HH: This will be out there, end product of the Plant.
- SG: That was a lot more satisfying?
- HH: Oh, I would say, somewhat yes, just because that feeling that you could feel it and touch it and meet the schedules and let me say this: Out of all the companies supporting the Nuclear Weapons Programs, and a lot of them, you know, had to make the configurations of the weapons. You know, we just had one part of that weapon. Of course, we always felt it was the most important part was the Tritium and Hydrogen Isotopes that made the weapon from a conventional weapon into a boosted weapon; Hydrogen weapon. But, out numerous and numerous companies supporting when the weapon was finally assembled, you know, ready to go, the Atomic Energy Commission at that time, told us, and I think its still t he same way out there now, that we were the only company that never missed a shipment.
- SG: Oh, really!
- HH: Never missed a schedule, production schedule numbers set to melt there. Never. And that what made people work ever harder to turn out the best product they can and get it out on time. There was nothing, you wouldn't hurt anything. You would make sure everything was tested and checked and double

checked, but that was the record that the Tritium facilities had all those years. I think it still has today. I've been retired 6 years, so I'm not sure, but I believe it's still that way. Yeah.

SG: Were you Wilmington salary when got that job?

HH: Yes. Oh yea. I was salary when I was hired in.

SG: Oh, you hired in salary.

HH: As a mechanical engineer, Yeah.

SG: So, they sent you over to Trudy Berry. You didn't bid for it or ask for it.

HH: Didn't know what was, no one knew what was going on over there.

SG: That was my next question is that ....

HH: Did not know. Had no idea. It was so hush hush, you had to get a weapons data clearance, everything, and I didn't know what was going on over there.

SG: I heard that people in Tritium couldn't tell, couldn't tell...

HH: My wife did not know I worked in Tritium until 1975, which is roughly 20 years. My wife didn't know what I did. Never could tell her or anyone about what was making there, about shipping out, anything like that. She never knew.

SG: Did that ever cause problems, I'm thinking of two different types of problems. One is you just want to talk about what you are doing; and then also, you like to tell people if you're doing a good job and stuff.

HH: Yea. We'd. No, she was frustrated because a lot of time on start-ups there, your process changes. You know, you'd be out there 7 days a week, several weeks in a row, working 12, 14, 15 hour 16 hours a day, which was not uncommon at that time. That's the frustration for the wives and the family cause we all had small children then. There were periods where you come home and slept and went back to work. But we did it, because we felt like it was very important and there was no question about anything but doing it.

SG: Which Tritium facility were you hired in? Did you start working in the old, the original one in "F" or the one in "H"?

HH: No. When I hired in, the 232F was still operating. It was getting ready to shut down. I went to Tritium in January 1958. The 232F, what they did, the Tritium, they separated out the Targets Atomic Reactor. They stored that Tritium in containers; in leak-tight containers and once they started up 232H, which is part of the, you know in "H" you got 232H, 234H, and 238H and New RTL. But they started up 232H; that was a larger-batch type of operation, which could quadruple the output of 232F. So, short lifetime went to Tritium in "H" area. 234H. They shut down 232F, because 232H had just started up and they handled a lot larger components coming from Reactor, so forth. So output was higher, much higher. 232F was almost like a Laboratory-type set up, small power Plant to test a lot of equipment. They used to do 232H. But that was shut down shortly after that.

SG: Did you ever hear anything about 232F was completed during the construction of 109. 232H was scheduled to be finished during construction, and then they stopped it. Did you ever hear anything about how that decision was made or what their plans were at that time? That was before your time?

HH: When I went to Tritium, the 232F was on four shifts and they had just started up 232H. The only thing we got from 232F was a large number of product containers called PC's, product containers. Low pressured tritium was stored in those containers. We took those containers and attached them to the process and

evacuated that Tritium out of those containers and used it. So, there, it was no longer necessary for 232F once 232H started up and come on line.

SG: Was that a big change, moving from wet chemistry to gaseous chemistry for you?

HH: Well, the biggest change for a little while, was that nothing flowed by gravity over there.

SG: And everything was pretty much gravity.

HH: All the canyon liquid process, but the, it was very interesting to my mechanical engineering because of the, you had pumps, also had vacuum pumps, compressors had to be leak tight to go up to certain pressures and so for a mechanical engineer, it was very interesting from those aspects. High vacuum and high pressure, with an ultra leak tight system to contain the tritium. That was the biggest change.

SG: Were there any special hazards in the Tritium area, since you're using high pressure and you're also using gas and Hydrogen Gas?

HH: Yes. Well, the Tritium is radioactive too. That's how the gas is formed. Also, you have the problem with the Hydrogen Isotope that can be explosive too. So, it's just like Hydrogen. The process was designed to eliminate wildest possible hazards. In other words, in the loading areas where your high pressure stuff was and the compressors, where they work. You got air flows going through there. Rapid through those hoods, you worked with glove board hoods and it was assigned where air flow was so rapid, that if you did have a high pressure leak, it would sweep that right out, through that hood, without coming out into the room where you were working. Even though you were working through glove boards all the time, because it was contaminating, smear able to contamination inside the hoods. But designs like that, that kept you from getting uptakes if you had a leak in the hood there. Now when you repaired the equipment, plastic suits and all kinds of stuff like that, all precautions were taken then not to, what we call an uptake, get some of the Tritium.

SG: To breath?

HH: Right, right, right. There also, the Tritium facility had a great record, safety record..

SG: How long were you in Tritium?

HH: Well, the first time from January of 1958 to, I left there in about February or March 1975. Then I come back to Tritium in 1987 and stayed until I retired in September of 1993.

SG: Were the Tritium facilities up-dated much, through your tenure?

HH: Yes.

SG: What were the most important changes?

HH: The updates in the earlier part was that we went to larger processed defuses, equivalent to sweep out and clean out the Tritium and so forth. They went to larger pieces of equipment to do that, to improve the production and handling. The 232, the initial furnaces were very small. Then they went to long element furnace where the targets from the Reactor was initially short pieces of the Tritium Plant and Aluminum and so forth. Then they went to long elements for the Reactors and furnaces.

SG: The earlier, the shorter pieces, those were control and safety locks where the Tritium was produced? Was that right?

HH: Well, that was the, they were targets. Now the safety locks and all, of course, stored Tritium to a long period of time, but they were eventually used. But these were actually targets put in there for the purposes of making Tritium. But they were short elements, within a foot of two, different sizes, but then you go from

there to the long element, maybe 10 feet, 20 feet long and you had to sign the furnaces and all that for that. But, anyway, that improved the production. Increased the capacity. For the same number of peak workers working there, you could turn out many folds the match you could with the smaller furnaces. That was probably the major changes there in 232. The other, well the only other major changes was the Cryogenic Desolation of separating the hydrogen isotopes. That was necessary because when you, when Tritium decays, it has about a 12 year shelf life left. It decays to helium free. When they bring that back in the weapons to recycle that out, we use the Tritium. You had to have a way to separate it, separate all that from the special deteriorating Tritium isotopes. Dissolution, the still, called a still, it's purpose really was to separate the Tritium and Deuterium gases. Diffusers and other stuff could separate Hydrogen Isotopes inerts and stuff like that. But, the desolation was a great addition to the process later on, probably in the, I don't know, mid '60's, something like that, early '60.

SG: Now we didn't originally have the mission to refill reservoirs, correct?

HH: Initially, no.

SG: Can you speak to how we got that mission out there?

HH: Well, the mission was necessary because the reservoirs, when these types of weapons with the percent of Tritium in them and so forth, had a shelf life of so many years. Some 2 years, some 4, 6, 8, depending upon the part in there; and then when the Tritium decayed, the helium 3 to a certain point. That certainly cut down the efficiency of the weapon and this whole time to, they started coming back, the pieces we sent out come back with the Tritium decayed with a certain amount of heat per minute. Tritium was so expensive, though to make, manufacturer that we started a recycle problem. When that started, it was called "A Limited Life Component", ALLC program. In other words, these parts going out had a limited life. ALLC. Then we also, we'd bring this back on the proper equipment, even though they was under high pressure, certain pressures, in the loading station we would fit, mechanically cut the unloading cube on that and get all of the Tritium and all the mixture out. Then we'd separate out the Helium 3 from the Hydrogen Isotopes. There become a point where you got to separate some of the Deuterium and Tritium too. So that was, the still did mostly that. That was what that was for. Then we used the two gases, and send them back out again.

SG: Did we develop the process for refilling the reservoirs here?

HH: Yes. It was designed by DuPont; downloading stations and everything like that. Yes. As long as you have Hydrogen Boosted weapons, you are going to have to recycle those things in and out. You get fresh Tritium out there in the field. There is no safer, better place to do that than right out here in the Tritium facilities, with all the years of experience that they've had here. And the success they've had. And with the new RTF, they replaced the Tritium facility. It was called Commerce Pine Railway Loading and Unloading facility. RTF's. You'd still have your 232 building, you know and all this other stuff. As long as you have those weapons, you have to have a way to recycle, have an LOC program. Not only for that, but for other parts of the weapons that were made too. I'd rather not go into any of that. For a few years, like when the reservoirs would come back out of the field and the contents were safely extracted from them, those reservoirs, at that time it was unusual. You cannot re-use them. Okay? Cause we cut a part off of it. You'd cut it to unload the contents out. Those were sent to classified burial place on the Plant. Then, someone in DuPont come up with the idea of why not re-clean those if we can. So,

they developed a procedure right here on the Plant. The Equipment Engineering Group up in 700 area helped develop. They had a well on another loading end on there so we could attach it back to the manifold and reload it. We used to send out to field.

SG: Oh. Okay. So, you went and cut off the same place you did and then reattached a new piece.

HH: They had to change the design of the reservoir to be able to do that, because you wanted to, at that time, you wanted to be able to load through a part and cut that same part off when it come back. Earlier stage, you unloaded a different part on there, so they had to redesign the reservoir. The laboratories did that, Los Alamos and Sandia, which ever one, which ever type they had to follow in this program. Humungous savings they had with that.

SG: I guess, from very old standpoint, and reusable...

HH: Oh, yes, yes, yes. Reasonably and the recommendation facility there, which I helped start up. That was the first thing the supervisor ran it, at the start up. Production part of it, you know the production. We had technical there too, you know, everything. And, that's been a successful operation. In fact, I have pictures here when they celebrated the, a certain number they had to re-clean, reuse. I can give you those pictures.

SG: Okay.

HH: I used to get, what, 50 million dollars whatever, humungous savings the thing did. And not only that, the, you understand all that stuff the buriel grounds; the classified buriel ground. So most of them, you were able to re-clean. A high percentage of them were, yes.

SG: Were there any special problems in making that work? Say, embrittlement of the reservoirs?

HH: No. You protected the stainless steel from certain liquids and so forth. Tryclene was one you didn't want to use on the stainless steel. Things like that. No, now they had, the engineers who designed the process for re-welding on another's, let's say, loading end, okay? And the reservoirs do have a limited number of times they can do that. That was set. The reservoirs went through high pressure proof testing once they were, the new end was put on. They were proof tested at a way higher pressure that they'd ever be in there. The leak tested, everything, and as far as I know up til I retired, from day one.

## **SIDE TWO**

SG: You worked in Tritium until March of 1975, or until February of 1975 was it?

HH: Yes. That time the Patrol Division, which is part of the Safeguard and Security Department, was broken down into a Patrol Division and the Security Division. The Patrol Division has responsibility for the entire physical security of the Plant.

SG: Does that include traffic?

HH: Yes. Traffic Division, all the roads in the Plant. Roy Case, was the first manager of the Patrol Division, which in early 1950's he formed it and stayed with it until he retired on May 31, 1975.

SG: And you said he was from Handford also?

HH: No. He worked in Handford, in security. He come here without training and the ability they had him form the Patrol Force here. So, when he announced his retirement, they promoted me to Chief Supervisor to take his place. So, I moved from Tritium up to the Patrol Division in February, I started training, I

actually went up there to take over about April 3, 1975. Now, the Patrol Division maintained during all the years, the operation patrol....

SG: Let's back up just a second. You had said that you felt that one reason you got promoted to this position was because of your military background? Because Ken French had .....

HH: Yes. Yeah.

SG: Why did he want somebody with military background in that position?

HH: Because the Patrol Division is kind of like a military organization. Wear uniforms, find all kind of type weapons and so forth, so I think he felt like, and I was a career Naval Reserve of 4 years of active duty, a combat veteran of Korea and I was promoted to Captain in the Naval Reserve and retired as a Captain. About the time this happened, I was Commander then in the Navy then. I was promoted to 7&7 a Captain. But, anyway, that's when I moved up to the Patrol Division on the Plant. The Patrol Division was in, the parking construction control, but when they moved the operations, October 1, 1952, Roy Case headed up and managed the Patrol Division. That Patrol Division lasted up to February 1, 1984 when Wackenhut come in. I can tell you a lot more about that. The Patrol Division was fossiled for the social secure of the Plant, the safety of the highways of the Plant. There was special state laws changed to allow the DuPont Patrol Division to be Constables, just like State Highway Patrolmen. In the South Carolina laws, Article 57516, that's where they designated this actual of the land, the Savannah River Patrol to patrol all the highways within the Plant, which is several hundred highways since the Plant is 22 miles in diameter, 65 miles perimeter without having to have the State Highway Patrol or the county people coming to patrol it because all of these people had to be cleared to work there. They felt like the most efficient plan would be was to let the Patrol Division work for the company there, DuPont; and have their own Patrol Division right within the Plant. So the law had changed and allowed that.

SG: It seems that I've read that, that law also, without that law the Patrol Division couldn't have, at that time, carried on? Is that true or no?

HH: Probably could not. But this gave the authority to arrest, just like the Highway Patrol. The patrol, by the way, the Traffic Division of the Patrol Division, patrolling all the highways, they would have about 1000 court cases a year. Most of them for violation, speeding violations.

SG: So, the Patrol Division could issue tickets that then went to County Court?

HH: Oh, Yes, yes, yes. Did that all those years. Wackenhut does it now.

SG: Oh, I didn't know t hat.

HH: Oh yeah. They can write you a ticket, anywhere on the Plant they can write you a ticket for speeding.

SG: I thought it was for the people on site, but it's not?

HH: No, no, no, no, no. You go to court. We averaged a thousand cases a year going to court for, mostly, trespassing, most of them were speeding, traffic violations. The history of the Plant during all those years, from '52-'84, there was never known any nuclear material stolen from the Plant; any armed group coming in trying to take materials from the Plant and still has not since Wackenhut's been there also, the last 15 years. But they had a good record, a great record; an enormous safety record they developed during that time. Between October 1, 1952 and January 27, 1989, this included not only the Patrol Division, but the Security Division, which was a small group compared to the Patrol Division, but they worked, the whole Department worked 25 million man hours without a lost time measured on the Plant. The Patrol

Division, which was about 95% of that, totaled. Has as many as 963 people at one time and down to 227 and back up to 500 people.

SG: So that was peak employee, 963 people?

HH: Yes. Yes. Between October 1952 to February 1984, the Patrol Division alone fired 3 million rounds of ammunition on the range, without a lost time injury, not a single day. They drove 50 million miles on the highways. All this was tabulated each monthly, you know, without a serious injury or lost work day case. In the whole history of the Patrol Division, not one lost workday case, from anyone being injured on the job. They did it through the hard nosed concern of the DuPont safety philosophy, with training and personal commitment.

SG: Was that unusual for a Patrol group, say, compared to private security industry or....

HH: Yes. The company that took over out there did not have as good a record. I'd rather not say adverse things about that. I was a member of the Siphon Law Enforcement Association. I went to seminars; I went to annual conventions with the state people, and none of them believed that we had this type of safety record out there. But it happened; it actually happened. That 25 million hour also, of course, included the people of the Security Division too. It was all part of the Safeguard Security Department; all part of that, two main divisions. They checked, you know, everyone going in and out of the Plant in all those years were checked by Patrolmen. Highway 125 we issued passes so we could travel 125 for about 20, 25 or 30 years. You couldn't cross the Plant without getting a time pass, how many was in the vehicle, tag number and so forth and you weren't allowed to stop anywhere on that 11 mile trip across the edge of the Plant there.

SG: That's no longer that way.

HH: No.

SG: When did they open 125?

HH: That was changed about 10 or 15 years ago when the DOE requested, in order to save money, asked the highway patrol if they wanted to patrol that highway through there and they agreed to do it, so they do it now, and also Wackenhut, they are on the highway a lot too. But, anyway, I think the primary thing now is the State Highway Patrol. You don't need a pass to go through there now. You can just drive right through.

SG: Did opening that cause problems for security? Did it increase?

HH: I don't think so. What they did, all the major roads off of there, they put a security post where people have to come in and go by a guard, show the pass and everything. I don't know of any major thing, really that happened.

SG: You mentioned that, the Government asked to have 125 opened, cost savings. Did they have much to say in how security was done out here?

HH: The State Government?

SG: No. The DOE, or ERDA.

HH: Yes. The security force had guidelines; government guidelines to go by. As far as the threat to protect and so forth and the DOE, AEC, ERDA. Yes, that security group on the Plant had a lot to say about the protection of the Nuclear materials and stuff like that. But on the roads, was all State Laws. All that was governed by State Laws. The traffic and so forth by State Laws; not by Federal Government Laws.

- SG: So, for your part in Patrol, that was mainly the State Government.
- HH: Yes.
- SG: The employee didn't have a lot to say about how that was done?
- HH: Well, they had to prove how many people we had and so forth definitely. But, as long as we did the job right and I never knew a time we didn't, they did not dictate about the State Laws we had to uphold in the Plant.
- SG: What were the qualifications of the guards that you were looking for hiring for Patrolmen?
- HH: The qualifications were, of course, the standard good vision and hearing and the basic things, almost like going into a military-type thing. They had to qualify on the range; had to re-qualify annually with a .38 pistol and so forth. Of course, they had shot guns, they had sub machines; they had all kinds of weapons. And they had to qualify all of them. There was an annual re-qualification they had to do. The physical requirements were not very, there was minimal physical requirements. When, at about 1978, when the Cold War threat was increasing....
- SG: You mentioned a couple of things like qualifications on the firing ranges and stuff. What other training did the guards have to go thorough?
- HH: Well, at one time we tried to qualify every guard as an EMT, to go through the training as far as the resuscitation of people, everything. The patrol people drove the EMT amateurs on the Plant.
- SG: Oh. Ok.
- HH: Yeah. From day one, they did that. But on each shift, there was so many Patrolmen had to be qualified, not only to drive the EMT vehicle but had to be qualified in all the first aid, all the heart, you know the....
- SG: CPR?
- HH: CPR. Even beyond that to first aid. How to neutralize broken bones, stuff like that to get them in on the stretcher and so forth, and necks and everything. So they did that all those years also.
- SG: Were they also trained in chemical and radiation exposures or was that for...?
- HH: Well, everyone had some training in that type of thing, but not, I can't recall a time when they had to go into and transport a contaminated person. I don't recall that, but anyway, they were experts in CPR and beyond the basic first aid, just like the local EMT drive and so forth. They had to qualify by State Board. The State gave them an exam and so many people on each shift would always have a qualified person, each area, to drive the EMT vehicles. Isn't that don't by other people now?
- SG: I'm not sure.
- HH: I think it's done, I think it's privatized, I believe they did, since I left. That's the other training they had; a lot of training people about identifying people and how to make out reports and continuous training in a lot of different areas as part of the job; all of the equipment they used and so forth. They had to know, of course, how to do that. The monitoring equipment and so forth. The Patrol Division also was responsible the Emergency Operating Center. That was under the management of the Patrol Division. We had a Patrol Lieutenant standing on shift; the shift supervisors operating the Emergency Operating Center, which was always said to be one of the best in the Southeast. The rescue center, at one time, the best in all the government nuclear facilities.
- SG: What is an Emergency Operating Center? Who runs the Emergency Operation Center?

HH: This was located in the area, it was in a safe area where you couldn't, big , thick doors, you know, that you closed behind. It was to monitor releases on the Plant, any problem on the Plant, it processed problems. The management group designated would come down there to the EOC and make decisions on things; security would be there. If there was a nuclear type thing or contamination type thing; certain management people would be there if it was different, other problem with other people, you know, which went through training all the time about the EOC. They had monitors there for the stacks on the Plant, different things, communications all over the Plant. Communications with all of the Patarol people on the Plant; radio communications. They had communication with the outside law enforcement person, if they needed to get them to help with something, whatever, but it's a really unique place that Patrol Division managed for all those years and also in the Patrol Division, the Security Division was tied up in that too. Any important incident on the Plant activated the EOC. Managers off Plant, they had a call list with different type of instruments and would immediately call these people; automatically call them at night, you know, come to the Plant, da da da, stuff like that. So, that was part of this whole thing too. What I'd like to tell you about, oh excuse me, did you have another question?

SG: No. I was just gonna say that your job in Security went...

HH: Yeah. The Patrol Division from 1952 had two managers. One was Roy Case, who formed the Unit and managed it until he retired on April 3, 1975. Then I was appointed Chief Supervisor in charge of the Patrol Division. I managed the Division until February 12, 1984, when we turned it over to Wackenhut. The reason DuPont turned it over to Wackenhut is that they asked DOE that they wanted to phase out that part of the operation on the Plant. One reason for that, in the late '70's when the Cold War really heated up, DOE come out with some, with a revision of the Classified Threat Assessment. We can't discuss what that is, but they increased the Threat Assessment for Nuclear Facilities from physical type threats to where you would have to train offensive type guard forces. Now, the Patrol Division was trained for safety wise and so forth. If something happened, some group come in and tried to steal nuclear materials or any other type violent thing on the Plant, they had procedures to control that and secure it, but they were not trained to, like, Offensive type training to go in like, para military people. It engaged Offensive type operations. DuPont Corporate Management thrived on safety of personnel throughout all their different manufacturers, all the business they're in and so forth, and they could not; they knew that if we went into Para Military training that should be putting a DuPont employee in a High Injury Risk Category for training. When this new assessment come out, we looked at it and we said, well we're going to have to start training people for para military type training. Mr. Jefferson, who was the CEO of DuPont at the time, actually went to Washington and talked to the head of the AC there and told them that we would continue to maintain security on the Plant, would not let anyone steal anything. If that required on combat, fine, but we were not gonna put people at risk in a training category and that felt like there were many companies who specialized in safeguards and security type para military type training in the United States that they could, you know, could get a contract, would come in and do that type of thing. So that's the reason DuPont gave notice to DOE that they were going to disband the Patrol Division and have them replace it with another choice. Ample time was given to them to secure another force, another company. So, after going through a whole, about a dozen different companies, they chose Wackenhut. Wackenhut started, we made up a transition plan to turn over to Wackenhut, each area at the time. We

started in November 1983 and Wackenhut come in and started training, we helped them, we assigned several Captains to them to bring them on line, bring them up to schooling what was going on and laid out an elaborate transition plan. What DuPont did, we build a para military range during this period and hired 220 non service employees who had to go through stringent physical examination, psychiatric examinations, go through para military training at the range. We spend over a million dollars building a first class state of the art training range out at the Plant. This was in about 1979 we build that. What we did, in that interim period, we brought the number of Patrolmen increase from about 250 up to 500 and by doing that, by hiring these 220 people who could meet and qualify for all these different para military type things, they were able to meet the criteria of the new threat assessment during that interim period. We did that and while DOE was looking around for someone else qualified to come in and take it over...

SG: So even then, DuPont was not seeing that as their role in the future....

HH: Yes. They sent me and the Plant Manager, John Grannigan. He said, "I don't want to take that risk of training these people." We hired professional trainers to come in from other sources and they were under the management of our own assigned Patrol Captain out there, Lieutenants, we assigned safety people out there full time for this training, and during that whole period of about six months, six to eight months, almost a year really, we still wound up a no run, no lost time injury on the job, even during these days when we were doing the para military training. In November 7, 1983, we turned over 100P area to Wackenhut; then on November 28, we turned over 100C. This was giving Wackenhut time to all the LLC's who were accepted, went to Wackenhut. Wackenhut had to hire new people to train too. Because the 250 DuPont people, most of them were old and had been around for 30 years, they decided to stay at the Plant and they were reassigned to other jobs. Very few of the DuPont Patrol people went to Wackenhut and that threw a burden to Wackenhut to hire more and more people and train them, which they did. That's why this transition took about 3 or 4 months. But, then, we turned over 100K in November 28, January 23 200H, January 30 200F, January 31 the 300 and 500 area. The final one turned over was the Traffic and Perimeter Barricades people on February 13, 1984. That's when DuPont then did not have any of our security people on the Plant. This transition was so sensitive, that we let Wackenhut force train with shift with the DuPont Force Patrol people. But, it would not allow Wackenhut to wear any guns during this training because since they, since we had responsibility of the security of those areas. If some incident happened and Wackenhut did not have the authority then for those areas. I wanted DuPont at that moment to take care of it if it happened, with their own weapons and so forth. But at midnight of each one of these dates, DuPont Patrol turned over all their weapons to Wackenhut that moment and they had the responsibility, I kept a special functions force for a year and a half where I kept a person on each shift, a trained patrolman without carrying a gun or anything, was on each shift to provide liaison between Wackenhut and the Operations People. It worked out great. A lot of questions come up and that stuff so we had a Lieutenant on the Plant on each shift that those people reported to and we did that for a year and a half. The transition was very smooth. But there were particular things we did to maintain who's in charge, who's in control, cause it could get very out of hand if they weren't responsible and guns on and I'd assume we was gonna keep our responsibility right up to we let them have it.

SG: Did Wackenhut agree with that decision?

HH: Absolutely. Yes. They actually did. The Wackenhut was very appreciative of the DuPont Patrol helping them get started and people assigned to them and I have a picture here on February 13, 1984. Pat Paterson was the Chief Supervisor of Wackenhut. At midnight, at 12 O'clock on that night, it was the official turn over of all the patrol duties to Wackenhut. I'm gonna give you a picture, here, of when that happened.

SG: Oh yeah?

HH: That's Pat Paterson, and that's myself there.

SG: So, that's the moment?

HH: That's it. When the final turn over was. Yes. Final turnover. And here is the Wackenhut pack. John Evans, one of his assistants, there's George Mezindino who's the Chief of Building Security, this other gentleman here, is Wackenhut. But John Evans was the manager of all the Wackenhut forces here on the Plant. Paterson was the Chief of the Patrol part of it, of all the forces on there. So that picture was also taken the next day.

SG: After you handed over Security and Patrol Division to Wackenhut, you went back to Tritium for a few more years?

HH: No. I kept the Security Division.

SG: Oh. You kept it going.

HH: There was a Patrol Division and a Security Division part of that. The person in charge of the Security part of it retired. So I stayed with that from 1984 to 1987 with the Security Division.

SG: Okay.

HH: And the Patrol Division did a lot of other things we haven't mentioned. When the DuPont staff would come down from Wilmington and other important visits like that, we would provide this extra protection for them; even off-Plant and hotels off-Plant in Columbia or Augusta and stuff like that. I had a written agreement with the Chiefs of Police in those cities that, doing this was actually a Texan type thing that our people were permitted to carry guns in their areas. You had to get permission to do that. All those that did that were qualified people who we had to get the official bonding for all these people and the qualified and State Constables under South Carolina Law. So, when we went into another state, even Augusta, Georgia right in South Carolina. The Chief of Police would give us permission, written permission, that we could carry a gun on a certain day in a certain place to protect those executives. We did a lot of different things like that, and everything worked fine over all the years. No problem. One of the other things that the Patrol Division had. we had an award-winning pistol team that went around the Country, to DOE, tournaments all over the Country; they participated in the South Carolina Law Enforcement tournaments and they won the National Championship, DOE sites, ABC sites, and so forth and always would come back with 15-20 trophies and all kinds of awards and so forth. Nat Stetson, who was the manager, Building manager, he also was the AC Manager, the new RDA manager and DOE manager, the Plant support the patrol of those fully and also took great pride in the Patrol Division, the development of their Pistol Team winning all these awards, and so forth. He was very supportive of everything and he helped us build a modern small arms range with automatic turning targets and so forth and things of that nature. I can give you a picture of that too.

- SG: Okay. I'll return these to you.
- HH: This is Plant Manager, Ken French; that's Nat Stetson, who was the DOE manager. This is the Pistol Team of that time, some members of it. Now one of the other things we did on the Plant; during this period of increased security starting in about 78-79, we talked about, we spent about 70 million dollars building security areas around the High Secure type things we wanted to protect. We put in a PIDAS, which is a perimeter double fence type thing. PIDAS means Protective Perimeter Intrusion Detection Assessment security thing. The major places are protected by this PIDAS out in the Plant. Some of them still are.
- SG: (Inaudible)
- HH: Yeah. We put in many additional alarms around the different places, cameras and everything as part of the upgrading back then.
- SG: So, DuPont put that in, not Wackenhut? That came in before the turn over?
- HH: Oh, Yeah. That come in before Wackenhut come in. We did all that.
- SG: I thought that Wackenhut did that?
- HH: No. No. That was all started, some of it may have been finished up after Wackenhut come in. No, that was part of the DuPont effort. It started with that. Yes. Just about all that was in. Yeah. Most of it was working before Wackenhut took over. That's part of the effort, there around late 70's, early 80's. Most of that was before Wackenhut came in. When they started giving more money to the sites to upgrade the security, that's probably a Nationwide thing at that time.
- SG: Did you think, was that a necessary thing that should have been done earlier or was it..
- HH: No. I don't think so. The threat at that time, didn't require it. The International threat did not require it.
- SG: Prior to that time?
- HH: Yes. Only when the threat was upgraded quite a bit, and as classified, I can't talk about what the threat is. That's when they started pouring money into improve the security around all those places. Yea. I don't think it was really necessary before then. I really don't.
- SG: Then you went back to Tritium in '87-'93.
- HH: Yes.
- SG: And that's when you finished up your career?
- HH: Yes. I finished up there in the last, I managed the Tritium Projects Division for a couple of years and then I represented, well DuPont left in '89, April 1, 1989. Westinghouse took over. By then, I was already back in Tritium then. So then, when they talked about reconfiguration and Tritium consolidation program, I was the Westinghouse representative on-site manager of reconfiguration Tritium consolidation program which involved a coordination of a quarter of a million dollar project. There was a lot of people involved in on the Plant. This was part of the consolidation program of Mound Laboratory in Miamisburg, Ohio competing with the Tritium facilities to take over a lot of the stuff that the Tritium facilities were doing. Also, the Pinellas Plant in Florida, as result of the effort of the Plant here of showing the DOE and the other interested people that we could take over some of those operations.
- SG: That had been done now in Pinellas?
- HH: Yeah. But, the Pinellas part went to Sandia in Albuquerque, what they were doing. So they shut down both those Plants as part of the consolidation program which resulted in additional working RTF, additional things going on there, we can't talk about, a lot of what those are. That was a successful

consolidation program, which was never questionable in my mind. I always felt like, that we had the best Tritium process anywhere here and the most experience, handling the most reservoirs of all the years and the success with that, and the actual takes on the Plant how to build those facilities and how to manage them. I felt like, that it would be very irresponsible to transfer that type of responsibility somewhere else. I still feel that way today. I retired in September 1993 and been enjoying my retirement since.

SG: You think back over your career out there, is there anything that you are especially proud of being involved in? Anything that stands out in your mind?

HH: One thing that I'm proud of is the DuPont safety record out there. We did meet all the schedules; we did do all those things and still had one of the best safety records in the World. That was ingrained in you when you joined DuPont, right from day one. One of the things that the DuPont Plant Manager did was every morning in his staff meeting with his General Superintendents. Every morning, first thing, the Safety Supervisor would give a report on safety throughout the past 24 hours, what happened during the nights.

## TAPE TWO

HH: You asked me what some things that I felt good about or what?

SG: What you were proud of being involved with?

HH: Yeah. One was working with the people out there, not only every job I had, but the fine people I worked with, the educated people not only in the process; Security; Patrol, the ones that were dedicated to what they were doing and it was a pleasure working with all of those people. The record at the Tritium facilities and the products shipped out to the military is something that I think is phenomenal. Everyone who had a part in that, continued to have a part in that; is very dedicated, very proud. Should be proud of that. I think, the transition we made to Wackenhut, from having security there all those years and all of a sudden to turn it over, I think worked out real well. When you turn over a 500 man force to what I call "gun toting people." The one thing I didn't mention earlier, was back in the early '80's too that may have prompted DuPont to turn this over to a company involved in such things as a main focus was we had a lot of demonstrations, Anti-Nuclear Demonstrations. We made a lot of arrests. One thing that significant, that happened that helped change and slow down that Anti-Nuke stuff in the Country, and I'm not against people who, I'm not against them, I just felt like it was necessary, but what I'm trying to say is the trespassing for Anti-Nuclear people, we had two different signs on the fences around the 65 mile perimeter around the plant and also on the areas within the Plant. One was a red, white State Law type trespassing. The other one was a yellow DOE type trespassing. The significance of those two was that the State trespassing sign, if anyone trespassed, we arrested them. So we were State Constables, so we arrested under State Law. We'd take these trespassers in the Court, whether there were people just coming out there fishing on the Plant, or just whatever, an Anti-Nuclear demonstrators. We'd take them to court and they'd just slap them on the wrist and fine them \$10 or \$15 dollars I think. The maximum was \$25. After a while, they'd come back again. Well there were demonstrations all over the Country at the Nuclear Sites. It became so intense, that about 1980 and '81 that Federal Marshalls were handling, trying to handle the support all these demonstrations, where they could arrest under the Federal Law if they trespassed. That was a thousand dollar fine up to, I believe, a year in prison, whatever, if you

damaged some Nuclear stuff, whatever property. The Federal Marshals were tied up with this and wasn't doing the other work they were supposed to so, DOE, they got a law passed someway where they could train and qualify so many contracted guard force people like DuPont Patrol people were and let them qualify to arrest under Federal Law. So we trained so many people. We sent them down to the Federal Law Enforcement Training Center down in Georgia, and qualified so many people that could then arrest under Federal Law. The next major demonstration we had, and intestinal trespassers, DuPont arrested them under Federal Law. We had the proper things to tell them under each law on the different colored cards, blue, red, yellow and so forth, so when we went to court we'd know exactly what we told them and the whole works. The first court cases we had in the Country from the Contract of Patrol Force under Federal Law, was here in Aiken. The ones we arrested, they were all found guilty, fined a thousand dollars and so forth. When that word got around, all of a sudden, there was hardly any demonstrations, except peaceful-type Anti-Nuclear demonstrations. These others were the type intended to say they were gonna come on the Plant, they were gonna damage the Plant, they were going to intentionally trespass and everything across the country, when the word got out that each Plant could arrest under Federal Law, the thing slowly started diminishing very quickly. I'm not sure if we've, that's the only time we arrested under Federal Law, that one time. After that, everything was peaceful and no one tried to come on the Plant or whatever. We had one large time where there was going to be 5000 people to march on the Plant and, of course, at that time we had State Law Enforcement there, the FBI, the SLED - South Carolina Law Enforcement Division, here in the State, the highway patrol, we had South Carolina Wildlife People who helped us out. So the March come down towards the bottom of the barricade and they turned around and did not force their way on the Plant. That was something else that we were involved in, that I believe that if you were on the Corporate Board, your expertise was in manufacturing other than Nuclear materials, mostly only commercial operations and so forth. I think I'd be a little concerned about having the Guard Force People involved in things like that, really.

SG: And that why, how you are associating that with possibly part of DuPont?

HH: I think that helped influence, maybe. I can't say, but I do know that the other Offensive Guard Training was the final straw that DuPont wanted to get out of the weapons business on such a scale we were on. I might mention another thing, there, about that, that I forgot to. Back in the early '80's, during this intense time, we got armored vehicles, and we had them in each area, each High Security Area. They had a turret on top, a 30 caliber machine on top, a 20 caliber machine gun on top. We drove around the areas continually during a certain period with the person on top and the turret and a driver in there.

SG: You were actually patrolling there?

HH: Yes. We patrolled there. DuPont Patrol did that. That's all part of our intense operation. These things were all 24 hours a day, 7 days a week. Here's a picture of one of them. I got another picture too, I think. It's called a Military D100 Vehicle. That's another thing I forgot to mention on that okay? I got some other things here I'd like to show you, if you wanna.

SG: Okay. You mentioned several things that you're proud of being associated with in you job out here. Are there any things that made you ashamed to work out here? Would have made you feel bad about working out here?

- HH: No. Not ashamed about at all. Not a bit. The only thing that bothers every manager of any group with any size, was when I had to terminate people for cause for certain things. Had to take away their livelihood and so forth. That's the only downside of, not only here, but on any job where you have to terminate somebody for something. We had a real hard rule-in Patrol about certain things and I think that hard rule was that you worked safely, you never pull your gun out of the holster and various things like that. You maintained your post in military type fashion, checking people in and out and so forth. They didn't let anything get out, but occasionally something, it could be excessive absenteeism, whatever, you know, different things like that, that you had to terminate someone. DuPont had an excellent program to put people put this, where you almost fired yourself. You'd go through a probation period and all this stuff and everything and occasionally it got to the point where.... That's the worse times I've had. You always go through a few sleepless nights when you do that. That's the worse thing.
- SG: Now you answered all my questions. If you have anything else that you want to add?
- HH: Okay. Nothing else. Appreciate you talking and....

**END OF INTERVIEW**

## Oral History Interview – Dell Harvey

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Born on November 9, 1920, in Baxley, Georgia, Dell Harvey was raised in a number of different locations throughout South Georgia. She got her first training as a nurse at the Crawford Long School of Nursing in Atlanta. After that, she took a post-graduate course in surgery out in California, followed by a year serving as a surgical nurse in Calcutta, India. Harvey completed her BS degree at the University of Georgia Medical College and began working at the Savannah River Plant in 1952.

Her first assignment at Savannah River was as a nurse in the 400 Area, where she worked with the problems posed by exposure to hydrogen sulphide. This work was soon expanded to include the CMX-TNX area, and finally the 200 areas, where there were a range of other potential medical and health problems. By the late 1950s, she was stationed at the main medical building in A Area, 719-A, where she worked closely with Dr. George Poda. Harvey retired in 1983, but can occasionally be found helping out at site medical where she is known as “Darling Dell.”

**Interviewee:** Dell Harvey

**Interviewer:** Terri Gillett, New South Associates

**Date of Interview:** June 15, 2006

This interview is with Dell Harvey. It's being conducted by Terri Gillett, Historian with New South Associates. It takes place on Thursday, June 15, 2006. It's being conducted as a part of the Savannah River Site History Project, which is documenting the 50-year history of the Site and its impact on the surrounding area. Mrs. Harvey is being interviewed as representative of the Medical Employees on the Site.

Terri Gillett: The first thing is where were you born and when you were born? If you don't want to tell me, you don't have to.

Dell Harvey: I was born in South Georgia, Baxley, Georgia on November 9, 1920.

TG: Okay. When did you start working at the Site? How old were you then?

DH: I was 32.

TG: 32?

DH: Uh huh.

TG: Where did you live before?

DG: My father died when I was very young and I was raised by a brother, and he was working the St. Simons Island on the bridge on Jekyll Island. So, we went through the first three of four grades in Brunswick, Georgia. Then I came back for a couple of years in Baxley, he was stationed there. Most of the rest of the time was across South Georgia, like in Fitzgerald. I graduated from high school in Fitzgerald and I went to one year of college in Valdosta, Georgia. Then in the following year, I went to Crawford Long; it's part of Emory now, School of Nursing. I finished there and I got married in my senior year and my husband had come home with the Navy and had to go back. So I went out to California. While I was out there I took a post-graduate course in surgery, which at that time was my specialty. I worked out there for a couple of years and then they would draft Surgical Nurses, so I went overseas for almost a year as a Surgical Nurse and I served in Calcutta, India. When I came back I completed my BS degree through the Medical College at Georgia. Then I worked with an Eye Surgeon and a General Surgeon in surgery until I came down here in 1952. In 1952, you want to know about 400-D

TG: Sure.

DH: I was one of the first nurses who would move the supplies from the old schoolhouse over to the medical. My favorite memory of that, the building was full of mice at the old school and the mice were having babies. So as the babies were born, the drivers would go move in supplies kept us in the know about that. But it was real interesting; things like the X-Ray, just part of it's moved there, the rest of it 719A. The Lab was there also. Dr. Bradford was there at the time. He was Head of Medical.

TG: The old schoolhouse, is that the Ellenton Schoolhouse?

DH: The Ellenton Schoolhouse. That's where all the physicals, the majority of them. Most of the physicals, you know, were done in town before they actually set up anything. But then the physicals they started doing out there. And it was hot! You came down from Atlanta into these gnats and things. You knew how hot

it was, but, we came in and we were processed there and because we were supposed to have a training period. I did not get for two weeks because the one nurse that I was replacing was pregnant. They had a very rigid rule that at the end of three or four months they had to leave, so I had to go directly on shifts. I got a baptism of fire. I thought I'd learned something in the military, but with the thousands of people that were here on construction and this on flow, we would have them on the emergency business. So we were taught about the H<sub>2</sub>S and I'd never heard of a massspectrometer and things like that. But we learned. It was just tremendous and the people, of course, we were all learning. We were all different people from every walk of life. We were all basically learning. It was a really, really interesting job.

TG: Who was training ya'll in the early days with all this new technology?

DH: Actually the Department Heads did a lot of this by word of mouth. The H<sub>2</sub>S and the heavy water, you see, were a wonderful lab down at CMX and TNX, which you knew about. Those people came in and by word of mouth, we were taught, of course, the dangers of the different acids and things like that. The use of oxygen, every bed had an oxygen and one side of it was, the guys soon learned even on the midnight shift the docs that really made them feel good so they would come in at first and tell you they had an H<sub>2</sub>S exposure.

TG: Oh, oh.

DH: Which was a farce. They wanted oxygen. But safety was so secure. Security and safety, we spent hours. I always remember the five steps, you know about Russia and the things they taught us how they would invade education, religion, basic schools, news media. These things were taught rigidly. The one thing that you could never miss was the safety, security. And we were really over run with safety people. So if these people came and told us they had an H<sub>2</sub>S, you had everybody and the Plant Manager within a few minutes. They soon learned that they didn't use that for a hangover. But it was real interesting. Would you like to know about the resuscitation methods?

TG: Okay.

DH: It was an old instrument called a Neolator and it very awkward. You had two tanks of oxygen. It was negative pressure breathing. Heavy, heavy, heavy. And so you had to learn how to use that, but it was not very adequate. And of course our ambulance was excess; the old high boxy ones. They were really very awkward. A lot of accidents with construction, but at that time you know, construction was set up and the one nurse that was there before me had been working on construction. Evelyn Potter. She had come over, but she didn't stay too long, but she was an excellent teacher too. And then another girl had come down. So many of our people came from Tennessee, from Oak Ridge.

TG: Oh. Okay.

DH: And they were real interesting because Tennessee people are very adamant about, even their popcorn is better than you can get here in South Carolina. But they knew their job and were very rigid about the people that were coming in there. So Dr. Bradford said, "I will tell you one thing. Oak Ridge would never hire these people." They had a style. You know how you walk through, if you're going into a sub station or something? Those people, they couldn't walk through that style, they weren't hired. They were too fat. He was funny. He came in one day and said, "What is that terrible odor?" 'cause, you know, you always smelled the gas. And he said, "What is that terrible odor?" And I said, "That's from the sardines and onions you're eating." But he was a great guy and he said, "If you'll tell me the truth, no

matter how many mistakes, I'll stand behind you. But if you lie to me, you're gone." And he really stood by that principal. He was just an excellent person. I can actually say that I loved it. I never thought I'd love that type of work because I'd always been in hospitals. But the people you did move listening and after a while if someone came in over and over with a headache or something, you knew that there was another problem behind it. There were a lot of problems, marital problems and things like that. People never had that much money or that much freedom. That alley, you know, between 278 and 19 were just all those beer joints and things and they would go back and forth. But it was just a real, in fact there was an old book written about that era by one of the sheriff's, but I'd forgotten the name of it; The Dark Cloud or something Over South Carolina. I'll let you know later the name of it. It didn't last too long because it really was the nitty gritty of the lower side of what was happening. You got to realize we had people from every walk of life; and every different type were, and the people who came down to us from the power plant up around Wilmington, they couldn't smoke up there so they dipped snuff. It would be real amusing to be in a meeting 'cause they didn't want you to know and they'd swallow it.

TG: Eww!

DH: Then they'd get sick and have to leave the meeting.

TG: Now, why couldn't they smoke? I've seen ashtrays.

DH: Up there. They worked in the Munitions Plant.

TG: Oh.

DH: DuPont's Munitions Plant and they had never been able to smoke. That was long before this tobacco, whatever that is, snuff came into being. And so that's what they were doing when they came here.

TG: Oh. Okay.

DH: Of course, we had some very brilliant people who came down here from all different places. It was such an education to get to know the people and you'd learn so much about different functions that we would never, because it was not all medical. We were very busy most of the time, but it was. You had to know the background of why this chemical did this or this machine did this. Then you know of course, you probably have already heard about the terrible death. It was one of the first that we had out there when cleaning out the tank. He was scalded. That was a pretty serious fall, where the guy was permanently damaged. But our safety record, in my book, was excellent. You just, it came first. It really came first; that and security. We know now that we bent over backwards. So many things happened that we should have called the families in. But we were not allowed to do so. And any unusual incident ....

TG: Like what kind of things?

DH: Well, if they were exposed to anything. They had an H<sub>2</sub>S exposure you see, or if they were contaminated with something. There were still, you know, acids and things down there. We would have to keep those people, see. Well, we didn't have anything at that time, but showers. We didn't actually did it, cause we weren't into the Alpha and Beta, you see, like we did when we got in the 200 areas. But, the counters, you know, they counted it even that early on; there are so many things that happened. It's probably superfluous with this.

TG: No. Everything is interesting.

DH: Well, I'll tell you this. In 400 you know, we were still down in swamps and in the mornings when you're on the midnight shifts you can look out and the duck ponds would just be full. The old farms were still

there as was the Ashley Plantation. If you could sneak away, those were wonderful trips, something that I would take in. Because you would never see the Ashley Plantation, you know, later on it was dismantled. But the trees were so massive and the house still had that walk outside kitchens with the old stoves and things. The guys would go out and bring in the peaches and the watermelons because they came up spontaneously for a long time.

TG: Uh huh.

DH: And they would bring those things in; and the guys broke a lot of rules. They'd go out and get stuck in the mud or go fishing or things like that, which they were definitely not supposed to do. But if things happened. Do you want a funny? Okay. I'm gonna tell you his name. This one guy would always stop out at 278 going home and one morning he came in and from his knees down he was really scraped. Well you know you had to bribe those injuries up. And I said, "Claude, what on earth happened?" He said, "Well, this guy" um, no that was the one who had the bruises. He said, "You know Dell I don't drink." I said, "Yes, Claude." He said, "We were sitting in this booth and this man came and he was just gonna make me take a drink and I was trying to climb over that booth and I fell." Well, you knew that. So a few weeks later he came back in and he had these terrible skinned knees down the front. I said, "Now Claude, I know better. You have to tell me what happened." He said, "Well I didn't know this woman was married and I was in the house and I had my clothes off and here came her husband and I grabbed those pants and started running out. I didn't know that woman was married. I fell over the chain-linked fence." Well, they would tell you and they were, that's the first time I'd ever have people. But then, you know, we did really more counts in the first place. We did actual treatment down there. We learned a lot and added new equipment as we came, as Dr. Poda came on. He came down from Indiana, you know and he had a lot of good ideas.

TG: We have a good interview with him too. We did get him.

DH: Oh, I bet you do, 'cause see, didn't he tell about it. Surely he told you he and Mac worked so hard on, even the instruments Dr. Poda did.

TG: I have that interview. I just read excerpts of it so far. What was your staff like? How many people like staffed your area?

DH: At that time, starting out at 400 now, we had one lead nurse and this was that, first was Evelyn Pardue, who'd come over from construction. Then Mary Barnett, and I think she came from one of the Tennessee plants. Not Mary Barnett, Mary Barnes. She came down and she was a very good staff nurse. Then you had A, B, C, and D shifts. You were all alone. You had a doctor on call. But at that time, see, you didn't have more than 2 or 3 doctors. We got "D" up running. At that time, half of the back of Medical was still Personnel. We called Industrial Relations; people like Billy Nightingale and those, Dan Miller, Bill Cue. They are all dead. They taught us so much procedure that we'd have to follow. 'cause you know, you had injury reports, you had safety meetings you had all these things. You had the legal aspects of it. So they were just a really wonderful group to work with. But they were always in the process of moving on up to 703A. So they did move out. And then the heads of the departments, like Power, Electrical, we called it E and I being electrical. Those heads were down at the other end of the building, so we had really close dealing with those people for a long, long time. And there was no real secret about heavy

water, because you know they'd be doing, and we really learned, what we learned the first thing is to respect it.

TG: Right.

DH: And we had to give the people who used the Flare Tower, you've heard of it, the one that burned off excess gas. Well, once every week or so, they had to climb that. As soon as those guys went up, they had their complete physical every time.

TG: Oh.

DH: Before they'd go up for that.

TG: On the one, or did they ....

DH: No. If they survived that, we let them live. But the other group that we worked so closely with was the trouble man. You worked very closely with him because all your ambulance runs began and ended in that and these people were a little bit it, they were either real young on who'd come out in that position or older man who had some background in that and they were excellent from the day, I still go to their meetings. They were our backbone because anything that we needed they could usually do it and anything we knew because they were well trained. They just were a really great group of people. They were from beginning to end in my book. They had excellent leaders, they had excellent training, excellent sense of humors and good cooks. And then on May the following year, is that Memorial Day?

TG: May?

DH: Early in the year of 1953, a day job came open. I'd been on the shift all the time over there and so we'd ridden in the same carpool with the same people. We got to know them and you'd become a family. To this day, you remember who they were because, I moved to 200F to open the first day. There was nothing; we didn't even have paved streets. So we moved over there and this is another character that's dead that I do wish you'd ....Art Mallory

DH: He was real bossy and John Hershey, I'm sure you've heard that name. John I think was over in production at that time. And John didn't know what phone was. He'd step out in the hall, you know at the other end, and call you. So, this first day I didn't have any equipment. I had everything in this building and medical was always so last unit to get anything, of course in the first place they'd come, cause there were only four or five women in the area at that time. They had the Medical Records that moved in, you know for the personnel over there. The Lab was open and going already. This is in separations, now, the 200 area. They hadn't paved the sidewalk. My first patient, Mr. Art Mallory, he came in, he'd been down to Edisto and one of those stinging fish had bit him. He said, "Now I want this foot soaked." And I said, "Now I want you to know I don't have a tub." He said, "Well, we'll just find something." I said, "Don't have this place open." He was insistent. I said, "I just can't do it." We found a little old pan and finally soaked his foot and he gave me a hard time all the time. But John Hershey was very funny. He would yell down there, you know, to tell me what he whatever he wanted. We go up and really got going and this is another funny, you may not want it. But Lowell Clark had come out there. He was a graduate from Agricultural School up in Clemson and I had met Bob Caldwell. Bob had something to do with a little bit with the, oh everything, with the Health physics. He is the first person that never happened after that first episode in Wilmington. He took me all the way through that building. He and Pat Walton. Pat, I believe is still, he lives here. They took me all through that building and they

explained every procedure. Things you would not believe, without bragging anytime, cause we operated on a "need to know" basis.

TG: Right.

DH: If you didn't need to know that, you didn't know which is bad. We know that today you have to have some knowledge. But he took me through and he explained that whole thing; the equipment, the cover suits, the covers, the decontamination, we used, and I presume if they still have it we used Tide.

TG: Yes. That's what they had in all the shops.

DH: We used Tide. We had this really vain girl from over in the Lab and she got her hair contaminated. We washed that stuff 'til it stood out like that. And finally I said, "I just think we are going to have to cut it." Well, she came up out of that chair and let me know that we wouldn't cut that hair, but we finally got her clean. But Bob had taught us, and then we had excellent Lab supervisors that had come in.

Phone interruption.

TG: We talking about the girl and the Tide.

DH: Oh, well we got her clean, but she was a headache for several years out there.

TG: About how many people, did people get contaminated often?

DH: No. It was a very rare occasion, so we made a real deal out of it, you see, when it did happen because, honestly, you can't imagine. I don't know of any other place I've ever worked and I worked in hospitals, doctors' offices, where safety was just, you really got banged on the head and if you've ever been through a safety investigation out there, you don't ever want to break the rules again. See if they would leave a breaker open, when they locked out anything it had a double lock. If you ever broke that rule, you'd better fall on your knees, 'cause the Lord was the only person who could help you. I learned a really great deal from a lot of the people in "F" area. It was the only one that was around the clock. Now, I don't if anybody mentioned, but along, about that period of time or very shortly thereafter, we started having rotating nurses. We opened you know our area was the first to go on line. I have those people too. Two of them are still living; one of them just died. But they had day nurses there, but on shifts, at night, we had what we called rotating nurses. See we'd go out there and all of us stayed lost when we were in those woods out there. But that's the way we handled it. And then, if it was anything serious and the nurse wasn't in that particular area, they came, "F" area. And "F" area stayed around the clock until about 3 or 4 years ago. Maybe not even that long; maybe about 2 years ago. Then they moved it over to "H". When they moved that unit outside the fence in "H" is when they came to that. This happened after I left. Well, when I finished setting "F" up and we were going, and we were averaging 100-125 patients a day there, they were coming through. We were doing physicals, we were doing ....

TG: Is that just in the 200 area or, really?

DH: Yes. Oh yes. We had a full-time doctor, Dr. Shepard. He did work a little bit over in "H" at that time, 'cause "H" was just starting up. And then when I got it going real well, we had a clerk that snowed the doctor too much and it just became an unpleasant situation. So I requested to go over and work in 200H and I finished there. Then when they opened next, like 100P or something, Althea Harkins who is now dead, she had three days seniority I think, three days seniority only. So she and I were in deep when we opened it. And we went over there. We were the only two that stayed on. They combined "H" and "R".

It was her, yea, she had three days on me. She decided to keep that so that is the first time I went to 700 which was probably in the late 50's, early 60's. That, when you were there, you see, you relieved in all the areas. By the end, all the areas had a day nurse, and you relieved if one of them happened to be ill, out on vacation, or if they needed help you went out.

TG: Okay.

DH: And that was the story. That didn't last too long; and then along came the visiting nurse situation, which was never successful because that's like sending a nurse as a policeman. Dr. Bradford was still there at that time and he didn't really approve of that. It's not a good thing to use a nurse as a, then they don't trust you to tell you the things that you need to know when you come into medical.

TG: Right.

DH: Now, we did minor surgery and things like that, sutures, foreign bodies in eyes. Along and then we didn't do any contamination in medical, decontamination. We had no facilities in the areas to do decontamination. But where I did that with the hair, you went over to the Lab with the sinks and things and showers.

TG: Okay. In 773?

DH: It's 772, is it 2 or 3 in "A" area?

TG: Oh. It's a Lab, not the Lab in "A" area.

DH: The big area was in 773.

TG: Yeah.

DH: They never had a large first aid up there. It was just a small unit because if anything was complex at all, it was sent over to 719.

TG: So where were you saying that you did, like the girl with the hair?

DH: In 772F, over in the Lab.

TG: Okay.

DH: We can go there. And as time went on, you know they opened the really closed areas. We were all "Q" cleared when we first went out there. But there were a couple of buildings that were closed even to medical. The cleared patrolmen had to go and bring them out. And we had some pretty wild ones. We would run out of oxygen and you couldn't resuscitate. I was on the midnight shift in "F" one night and for about a week this man had been coming in complaining with indigestion. We didn't have anything but Maalox then. And finally, his last name was Davis, I said, "Davis, I'm not giving you any more medication until you go to the doctor. I know your wife works at the pharmacy and you know Dr. Deloach, but you have to go." Because you know, after a while you realize it. Well, he came in and he said, "Dell, if you'll just give me one next dose, my wife & I will go and see Dr. Deloach in the morning." He hadn't gotten out a lick outta me and said Davis is lying over here dead. So I went out and we had Dr. Echols then. Well, I still thought, you know if you injected a little adrenaline in the heart and give it a couple of whacks. We didn't even have Heimlich or CPR had not been taught to us at that time.

TG: Oh, boy.

DH: They just expected you to know what to do, so I did that, but he was dead.

TG: Oh, he died?

DH: We didn't have but those two deaths ever on my shift. I had, one of our very best friends, Eddie Frost was over in the maintenance department out there, and he was so good to medical. He was just real nice. One afternoon I had terrible laryngitis and we'd all gotten some money for one of the other nurses named Louise Marx, 'cause it was her birthday. They'd given me the money and he was going to pick up an alligator bag that she wanted and I had laryngitis. So he came by and he sat there and talked and he said, "I have to go home." His wife's name was Dell too. He said, "Dell's gonna give me the devil 'cause we have a dance tonight." So we walked up the hall and I was squeekin' you know, couldn't get anything. We had what we called a "Rape Box," which you could call directly to patrol. You just smash the button and call them. Eddie was 6'4". He started out the door and he always wore this bowtie. I sat down in that chair, I looked up and he just did like this and slid down by that door. I knew he was dead.

TG: Oh.

DH: And I loved him so dearly. He was such a friend to medical. You know you can't help some special. And so, I squeaked until I found, but see there was no way to move him. I went down the hall and I picked up that stupid neolator and I slid it. It must have weighed 30 or 40 lbs and you opened it up and it had this facemask and that negative pressure it forced the air in. So I got that on, but there was no way I could get him. I couldn't even pull him down. And so I finally got them to understand to come to the emergency door. They couldn't get in the front door. We worked on him a long time, but,

TG: Yeah?

DH: Yeah. That's life. You know you just, you do, which is a good way to go if you gotta go.

TG: Right.

DH: Now, let's see.

TG: Actually, I would like to go back a little bit and then we'll go to 719A or 700. Why did you come here? Why did you come to this area? Did your husband get a job here or?

DH: My husband was with the Ford Motor Company in Atlanta and he was allergic to paint. He was over in the union section. He had actually started out as an electrician, he was wiring the electrical parts of the car and then he was with the union for a few months. But he was so allergic to paint. He had to be in the paint section that we had to do something. And I had been working for a wonderful ophthalmologist up there that I really liked and I just couldn't imagine coming down here, but his brother-in-law had come from a power company down in Jacksonville up here. So they asked us to come down and we did. The housing was just atrocious.

TG: Yeah. I wanted to ask you about that.

DH: We had those little houses in Governor Aiken Park where we stayed until we could find something else and ....

TG: The little duplexes in ....

DH: Yes.

TG: Where the walking track is?

DH: No. You know where Governor Aiken Park is over at, (she whispers) it's the black section at the end of South Boundary, down in there. But, most of us, the ones in supervision were able to get houses out in Crossland Park, you know that was the "IN" place then. But then we had bought a house later. I did a lot of volunteer work at hospitals, University and over here. Because I felt I just couldn't give it up, but I worked full time out there.

- TG: So, did your husband work out there too?
- DH: He came in. At that time, it was Electrical and Instruments.
- TG: Okay. Okay.
- DH: So he came in and we both started out in 400. He stayed on a while longer and then he went over to the hundred areas.
- TG: Okay.
- DH: He mostly did day work. I was completely through with my BS degree except one five credit in Chemistry. The lady had come down from Atlanta to head the MCG program here. So, she called and said, "You have to finish." So I had to go back. I ended up to with 2 ulcers 'cause I had a nine year old daughter at that time and working full time I had to run home, feed him, run to Augusta to college and then back at night. But I finally got it in 1962. The BSS all I lacked. It wasn't an easy transition because nursing, you either love it, I think, or you don't. And of course we didn't have the stress, the paperwork in those days that you have today. You had to actual work. But I just never thought about going anyplace else. I took a lot of extra courses, my minor was in Psychology and I did more listening than anything else. My major was in medical, so how much have I skipped that you needed?
- TG: Let's see. Actually this is another thing, that's not really about the site. You said that there were, I've heard a good bit about life during construction and thereafter, that there were a lot of beer joints and loose women. Tell me a little bit.
- DH: You'd better turn this off.
- TG: I just didn't realize that, like now I've seen it a couple of times, you know.
- DH: I'm trying to remember what they called those big bowls. But you know, highway 19 was a racetrack with those guys. It's almost as if they didn't care about living. They would race; there were a couple of deaths due to those races. But they would stop so many of them coming and going. And I saw so many marriages that they came that they worked here. That ended because of that. We had this one woman; she had a beautiful figure. She would come and her busts were so natural and they were so pretty and somebody said, "Those aren't yours are you?" And she said, "Do you want to see?" And she flipped that out right at the bar and put it in, I forgot what they called them, those big beer mugs, but the were like that. You think of them as brandy snifters, but they were real big. And these are the stories you heard all the time.
- TG: Really?
- DH: But the prostitution was just terrible!!
- TG: There was prostitution?
- DH: You know Robin's Trailer Park?
- TG: I've heard of it.
- DH: Okay. In fact we rode with one man who went through this divorce thing. So many of the women that were working, this is just post war you see. So many of the women working there never worked out, had never been exposed to that many men, because we were outnumbered 2 to 1 and you saw a lot of divorces and a lot of things. But Robin's Trailer Park had it pretty bad, because sometimes they'd just line up when the midnight shift. The husband would go to work in the midnight shift, they would be out there.

But even some of your better marriages, you would not, they ended that way because I guess it was such a temptation to be recognized and appreciated which many women aren't.

TG: But did you ....

DH: All of those things are a part of it. It's hard to put into words because they leave a lasting impression.

TG: Well, there was so many people here.

DH: Oh. Honey, can you imagine when the streets weren't paved and you couldn't shop in Aiken. You had to go to Augusta. Even the churches; they really didn't want us here and they didn't make too much bones about it. But the stores could really be rude. So many of them, we got a lot of Yankees, you know from up around Delaware. They were rude; they tended to be rude to the people. And down here we knew, you know we understood this influx and you could stand it. You just knew you had to go to Augusta to get what you needed. Because they just weren't ready to cope with that. The churches weren't ready; the schools of course weren't ready. We were having two shifts and the kids that started in, unless they were brilliant didn't have much of a chance. Well, there was a lot of poverty. And, you know I had a five year old that started early, which I should have never done, but you would have the Black people, you know would come and work as a maid. But if along came the cotton at that time, you knew you didn't have them. Or if there was any other produce that had to be picked, they actually belonged to the big landowners. Not as slaves, but you know most of them were indebted. That was just part of it. They were indebted, so it wasn't really reliable, you couldn't depend on it. If you didn't have a swap system with some wife who didn't work, you did have a hard time with children. No nurseries, no day care, nothing like that. No chance to talk to the poor teachers because they were just so overwhelmed. And then we began to settle down, you see, as I guess they sort of culled the employees as they go into the ended part, like putting in the reactors and things like that. It was a little bit different. But it was just fantastic what they did; to watch all that in progress. It's just hard, you see the picture and you'd visualize these things. Well see Ol' Ellenton, most of it was still here when I came. It was beautiful; all those massive camellias and hollies and things like that and the schoolhouse.

TG: Now the schoolhouse. They were in the schoolhouse when you got there? And you helped move .....

DH: All interviewing and we moved physical equipment.

TG: Did they move the TC buildings? Those big cartwheel things?

DH: No. Now, that was construction.

TG: That was before.

DH: Because construction had they're whole set up. They actually had they're own ambulances. You see, our people who were building 400D and then into the hundred areas were construction workers. You had to take them on an emergency basis. And then we would transfer them. We called that Central Shops at that time, because all construction's major shops were there and you should have seen the exodus from some of those areas in the afternoons.

TG: Really? Traffic was bad?

DH: Yes.

TG: So, 19 was just two lanes at that time?

DH: No, I believe that, maybe it was three lanes in places. Well, see, it never was two lanes any further. I don't believe then. Maybe where Duke's was it came down to two lanes, 'cause see when they got into

Whisky Road there was nothing you could do. Still can't, which I'm glad. It's pretty sad, that there's never been any basic coordination between your county council and your city council with our different people because one of the things that was really bad. They promised New Ellenton that they would install water and lights and everything if they would move when they moved them in from Ellenton; if they would move their businesses off the main street, but they didn't. You see, they put every single thing on the main street and Jackson was not quite as bad. What they did, they did have an older section over at the one side down by the river, but the traffic was just so horrendous through those places.

TG: Right. And so did you, you know, did you carpool with your husband, 'cause ya'll worked at the Plant?

DH: Occasionally, when were in 400D, but in just a little while you know they would have to shift you to another shift. Most of the time in 400D I had ridden with just about the same people the entire time. I remember Rabbit Harrison.

TG: Let's see ....

DH: Ask me, 'cause I get started my mouth and don't know when to stop.

TG: No. That's what I like. Let's see. And so, when did you move up into 700 area? You said it was like the late '50's?

DH: It had to be, let's see I came in '52. It was very close to the '60's.

TG: Okay.

DH: When I had surgery. 'Cause I was still in "H" and then I worked "R" and "P" for a while and then I had, it had to be very close to the '60's and during that time we were getting from separations you see we what we were getting contaminated cases. It was pretty crude, the way it was. As you were there, you dismantled it, you realized how come, it was you just put them in that bath. We had visitors come out from University Hospital because our rule was if it were something, and so they were incorporated with this as it went along. The training was very rigid. We did it exactly like you would in surgery. You had the pass-through window, the clean person out here who handled it then, and then the other, anything that touched things went into the contaminated bins. And then, there again, we worked very closely with Health Physics; that's Radiation Control today. We worked very closely with and we got to know a lot about the instruments and things they used, and what they needed and we all wore the badges, you know to see. But we didn't go into the buildings very much anymore.

TG: Let's talk, I want to talk about the bath, the lead bath in 719A. I've looked at the original drawings of that building and that, the bath wasn't in there but it was kinda set up like that already. What was in there before that bath was in there?

DH: Sinks; just sinks, and a shower. We had a shower. I'm almost sure that they took that one wall out to bring that bath in because, you see, it was brought in, it had to be welded intact, but you know I can't remember. I do remember that the big trucks and everything were out there. And I remember them putting in the tanks. See, that was a special basin. You never added any water to that 'cause that basin was limited to contaminated solutions only.

TG: Okay. And you said Dr. Poda designed that?

DH: He was in on the design; of course they brought in engineers, but he, they knew what they wanted and we had already done it piece meal, like that using that neolator you see. We complained so much about that neolator. No matter what we used, it was contained, it went to the burial ground you see, but those

things were so awkward. I almost lost a patient one morning taking him to St. Joseph's because I hit it with a train. It just ran right across it. We had to sit there and I ran out of oxygen and the man almost died.

TG: What was wrong with him?

DH: He had a heart attack.

TG: Oh. Okay.

DH: And I cut him down as low as I could, and finally there was one of those guys out the window and I said, "You stop this, we got to go through. You stop this train." And they did.

TG: Okay.

DH: I said, "He's dying." So when we came back to work I said, "I'm want to tell you something. I'm never taking you for that ride again." He said, "I'm never going with you." But it was these sort of things. Just like I picked up a man, it was just about the time, remember; you weren't here, you're too young. Seat belts, everybody was required. Well they had safety would sell those seat belts and he had them and he left after a midnight shift and he just apparently went to sleep down there. There's a dead space down almost before you leave the Site going toward Barnwell and Williston, and you can't have radio pick-up. So we went racing out there and we had a rule. You had to take anything like that to University Hospital. Well, he was still conscious. We had to wade out in this mud and get him out. The new seat belts were still sitting in the package over there. He was conscious and I said to him, "You will have to take him to University." And the man said, "No. No. No. Take me to Barnwell. Take me to Barnwell." Well he was in shock. I had his feet up, that's all I could do. He was so internally damaged and I would have had to driven about 3 or 4 more miles to back to radio pick-up, see, we couldn't do it. So I said, "Well, we already turned around to come back. Okay, that's his desire." And see, they hadn't given those rules then. You did what you were told out there. And so we took him, and of course he died. Things like that and that old radio thing. But of course that's all we had; they were old Army surplus. We even had bandages and things that were still from the Second World War.

TG: Really? Wow! So, if somebody went in that bath, did you expect, did anybody ever go in that bath?

DH: No. Not that I know of.

TG: What was the training? Was there a different training?

DH: Well, you know how they let down in that. Yes?

TG: Yes.

DH: Yes. We had very rigid training of that. And you know that would be limited to the number of people who'd go in there. There would definitely be somebody, call it Radiation Control, somebody was there with the instruments no matter what happened. They are the first one that came. And if we were debreeding an injury now with the bath, you usually started just like you do with surgery. You started outside toward the center so that the contamination is not spread beyond that. Then when you'd finally get down to that, with really fine instruments, 'cause you would just take a little bit of that tissue and that instrument would be there. He would be there to do that.

TG: We'll have to turn the tape over.

DH: I talked too much.

TG: No!

**SIDE TWO**

- DH: You have a lot in there that you don't, you can delete it. I never say that with Westinghouse. See, I retired from DuPont and as long as I was getting a pension from DuPont, I could not work for DuPont part time. So Dr. Mathis called me back to work construction, which was a separate entity. So I worked with that and Bechtel about three or four years part time. Then when I came back, I was with Westinghouse. It was almost as if; people wanted to get ahead with DuPont, but they never stepped on your back with bloody shoes to get ahead. This was the thing that impressed me almost immediately out there. That, and you get through all these things VIP, VIP, special people that were being employed. Finally this man came through, he was a Navy Admiral or something, been in for the Nuclear Ship. I said, "How come you're a VIP?" He said, "Am I a VIP?" I said, "It says so right here." He said, "Well, I didn't know that." That's just the way it worked and that's the way it is with all industry today and it's pretty hard to accept that. If you've been in one who were family oriented, and it was a product, our product was to give the nuclear material what they needed and do it as safely and as inexpensively as we could. You just didn't waste. You couldn't waste then. I wish I knew more about it. Of course, we were trained and re-trained. Every week we'd check the oxygen and all those things and our instruments had to be sterilized and they were in there. But the bath thing itself, the thing we were trained with the Tide and the Clorox is immerse that person and do that. Drain that water out. Never put another drop of any other kind of water in there. Did you see the bath?
- TG: Yeah. I've seen it. I've seen it. I was, I kind of catalogued all the stuff in that room before they dismantled it and then photographed it about a thousand times and things like that.
- DH: You saw all that HP instruments in there?
- TG: Well, there were a couple. There was some HP stuff in that far room.
- DH: Yeah. Now that was their room.
- TG: Right. They were in the center and all that, I mean, is was just pristine, like when the 1950's were in there, or 60's.
- DH: They never changed that procedure because theirs was the same. They calibrated those instruments once or twice a week, just like we did with the defib thing.
- TG: Do you think those nurses like, well not now because the building's gone, but when people were working in that building a year ago, were they still updated on that procedure regularly?
- DH: Um hum.
- TG: Yeah?
- DH: 'Cause see, you still have contamination.
- TG: Right. Right.
- DH: That's right. It's a sort of pass-on something. There's nothing complicated about it. You got to wash and dry that person and scrub until you get them clean and if you can't, you even debris them.
- TG: They would do what?
- DH: Debris. You have to get it. If it's skin contamination, that's one thing. Now you know about chelating.
- TG: No.

- DH: Okay. If there was internal, we gave it Chelating agent. We gave them in the beginning, now I don't know how that ended up. We gave them a very strong laxative. But then we chelated. That was an intravenous infusion. Do you know what chelating means?
- TG: No.
- DH: You know what cholesterol drugs do?
- TG: Yes.
- DH: They bring together the fat. What we did with chelating material that's almost, well think of it as a magnet. It's a material that would bring those particles and you would throw it off through the bowels and the kidneys.
- TG: Okay.
- DH: And they added lots and lots of fluid to do this.
- TG: Well, this is maybe an icky question. If they had contamination, internal contamination that you handled with a Chelating Agent, were there excrement buried in the burial grounds or stuff like that?
- DH: No.
- TG: No?
- DH: We weren't thinking so much of it as an internal contamination. We were thinking of contamination that got into the bloodstream from puncture wounds; the glove box.
- TG: Okay.
- DH: A glove box, you know. This happened occasionally, and usually you can get all of that contamination.
- TG: Okay.
- DH: In most cases. And the ones they didn't get, we don't know about. And that's why you have this thing where they're giving you \$150,000 for stuff like that you see. But the thing is, the dissolution of records is the worse thing that happened.
- TG: Oh. Really?
- DH: They were called dip sops DPSOPs and I'm saying this, you know, not as a professional. They told you were all the electrical wires, what all the procedures were. Well, when Westinghouse came in, they wanted to start a new, and so many of those things. The only reason I know this, see, is when I went back out as part-time, they hired a lot of the people who'd been there from DuPont and come back as consultants. They had nothing to work with. The dip sops were gone. Those procedures were gone because they changed the whole procedure. Well, we were no longer in the Cold War and I guess they felt they just didn't need it.
- TG: When did you retire out there? What year was it?
- DH: 1983.
- TG: And Westinghouse got there in 1989. So you worked, okay.
- DH: But in between, we took a 10,000-mile motorcycle trip. We went up all the Mississippi all the way up and through Canada and up into the Ice Fields and back across the United States. That was our retirement party.
- TG: That sounds great!
- DH: And when we got back, then Dr. Mathis called and asked me, Bectel then was building DWPF, so I went out and I worked part time, did relieving nurse and things like that, and then that was the other one, that's

who I worked for then. Then I worked for Bectel for two years part time. So when Westinghouse came, Barbara called and asked me to come back, which I was real happy to do because I'd worked with that whole group of nurses. There were a lot of changes even then. Your filing system, your computers and things like that.

TG: Early on, what did you do for entertainment when you were working out there? Did you take part in any of the, I know that they had you know dances and parties.

DH: Yeah. We did. Yeah. We did. We had barbeques and we had. You know in the beginning construction had a nice recreation thing up near 400, and occasionally some of the people would invite you out there. But I never participated very much in that. But we had picnics and we'd meet at Barnwell State Park, we'd meet. We just were a very sociable group. Most of us and there was a comradery there that you don't see today. You know, people are too busy, all us are too busy to do things. But there were no caste systems.

TG: Oh. That's nice.

DH: Because you worked with the Doctors and things like that.

TG: I know that they opened three parks by Pecan Grove, Oak Road, something else. Did you ever go to any of those recreation parks?

DH: No.

TG: One was in Jackson, one was in, down by the park ....

DH: Yeah. I think we used to go play softball in one of them, I forgot. And then the last one I think was out here on the back roads, one of the horsy roads. We did a lot of that. We went to all the dances. There was, they would not give you one drink then. That's what I would say. The old Bonaire opened in Augusta and we used to have the dances there and people were always jumping out there. But on the whole, it was you know, at that time a group of it, and a lot of supervision and there were about 5 or 6 in Medical; they established what is today the Aiken Assembly, which is a dance club. They'd have 4 or 5 dances a year. Pretty early on we joined that. It was limited to 100 couples.

TG: Okay.

DH: And we had the Fermata Club too, you know with a swimming pool and things for children. Our main thing then, we did a lot of work. We did a lot of work with Millbrook because most of us even then lived on this side of town and to get those schools accredited, they were still so overcrowded, we were constantly having spaghetti suppers, cakes, anything we could think of to raise money until we bought equipment for seeing, even for the teachers, they didn't have equipment. And finally along this may be 5 or 6, we were getting where at least Millbrook had just been built and we were over here and we did for them. And then Sharon started St. Angela. Even the doctors; we would go over there and help them get accredited. But so many of them were Catholic you see, we would go over there and do eye tests and hearing tests. And the Plant would let us borrow that equipment, which was very unusual because you didn't bring a piece of equipment off that Site, because if anything was contaminated. You knew it wasn't, but that's just how careful they were.

TG: Right. Right.

DH: 'Cause you realize how guarded the Nuclear Industry was until well after the Second World War.

TG: Yes.

- DH: The Cold War was over, almost, before we stopped doing things like that.
- TG: Did you go to that big variety show? It was like in '52 or '53. It was in Bell Auditorium.
- DH: Yeah, man. Well our entertainment was so limited see. You had, there was one theater, one I believe in Aiken at that time, well, it was so overrun. We would go to that Majestic or that other one in Augusta. They had an S&W and S&S and everybody went over there on weekends. We didn't have any money. We weren't paid anything. I started out at \$62 a week. I took a cut of about \$20 when I left my doctor to come down here.
- TG: Oh, really? Oh, I just thought of something and now I forgot. Why did you decide to, why did you pick Aiken over Augusta to live when you first came here?
- DH: My sister and brother. Because I had a sister over there. But there was actually no limit. At least when they came to Aiken, they had built temporary housing like Crossland and Governor Aiken Park and Robin's Trailer, which we didn't want. So, there was no way to get a maid and my sister-in-law was not working. She had a young daughter and she kept my daughter. 'Cause see, I was having to work shifts.
- TG: Oh. And she lived here in Aiken?
- DH: Yeah.
- TG: So have you lived in this house a long time? Did ya'll build this house?
- DH: No. We build one over on Wofford Circle first. When we build over there we build that house and then we had some problems and we sold it. And then, we came back, when we came back I bought at 22 Erskine. But we had a water problem that could never be worked out and Dan Miller and I tried to, he lived next door. He had been in Personnel too and he rode in the carpool. We tried to take care of but you couldn't. You always had that water over it. So this house came up and we bought that like in the late '70's and we worked real hard to get it paid for so we could retire in the '80's. 'Cause David loved farming; that's his hobby. We had 15 acres out there so, he retired before I did. I worked two more years after he did.
- TG: The reason?
- DH: The pay was too good. He has blackberries, tomatoes. They look kinda bad; the weather's been terrible this year. But until this year, he had some wonderful corn, you just can't imagine. He has two rows this year. He has corn, tomatoes, string beans, onions, radishes, all those things you see. See, he had a Pulmonary Emboli and he's fine, but this past year he had treatment for cancer of the prostate, but he's fine now. But he doesn't have the energy to do it. At 88 I don't see it.
- TG: Did you have a little produce stand out there?
- DH: We'd have people come pickin'. He'd settle for almost nothing. Blackberries and the scuppernongs The Blacks loved the scallion scuppernongs. And you'd be amazed the people would think that really. We had people from Woodside and Cedar Creek that loved to make jellies and they'd come out and make all that.
- TG: When you started, when you were in Ellenton, the Ellenton Schoolhouse and the personnel were in there, how many people were coming through there a day? That was still at the height of employment, right? When they were trying to staff?
- DH: My badge number was 1366 and Dave's 1367, and I think about 8 or 9 hundred, the number that morning when I came through.

- TG: Wow! 8900?
- DH: That was 8, 9. In fact I knew who that man was. He was in power at 400. He'd been there for 3 or 4 days and Althea was only, maybe she was one day before me. 'Cause she was helping with the physicals in the schoolhouse and I went on over to D-Area and we just had to set the whole thing up. None of us had ever done anything like that.
- TG: Right. Learn as you go?
- DH: And we actually did X-Ray and Lab. It was just one room because Personnel had the other side of that hall.
- TG: Did everybody that came in get a physical examination?
- DH: Yes indeed! They sure did, and they took a pretty rigid test; math and things like that.
- TG: Everybody had to come through there?
- DH: Everybody came, had to have a physical.
- TG: Even the people that were just, like, recruited because they were brilliant scientists?
- DH: Yes. They all came through here. You see, later on when we got into this hearing test, now this is 700 they installed the booths in every area. We had to have, I think it was almost a month of training to give hearing tests properly. And then, you know Doc Poda was a very innovative person. He realized we were getting so many people from down here in the valley, that we needed to do a breathing test on these people. The first thing he had, he just concocted this thing that you blew until you got the bubble up through that water. Well that didn't work too well. So then when they got the Pulmonary tests, we had to take a test in that, we had to take a test in Audiometry. We had to learn how to do electrocardiograms. We had to learn to draw the blood, make the slides and preserve it and send it up. We did the complete physical. We did a written physical. Blood pressure, eye test, hearing test and it was just like a routine CBC in the beginning and a routine urinalysis and then we got the microbiology part, which was, I mean right on top of everything. And you know the doctors in the hospital really resented that in the beginning.
- TG: Why is that?
- DH: Loosing money.
- TG: Oh. Loosing money.
- DH: 'Cause they get to think that we do the chest X-Ray, see. And for years, you know, the doctors themselves read that. And we got into a little trouble 'cause so many of those people had come to us from the cotton mills that they already had that lung problem and because of the mills and all the looms, they all had hearing defects you see.
- TG: Right.
- DH: Then we got several, many, many people from Kentucky, West Virginia up from that area who had black lung.
- TG: Coal miners?
- DH: Uh huh.
- TG: Well. I just thought of something. That chelating agent? Is that the ....
- DH: EDTA.
- TG: I had a little pamphlet or something.
- DG: It should be in some bottles that we add to 1000 cc. of fluid. EDTA. Now that was kept locked up.

- TG: That wasn't the DP, it was dip something something. Did Dr. Poda come up with that? Where did that come from?
- DH: That was, I don't know where that came from. Chelating is a really old thing. Kissing cousin maybe to bleeding, remember. I never knew the exact philosophy of it because we used it quite often when somebody had inhalation or if they had a wound, then we would use it. That procedure also changed somewhere in the late '70's and '80's. But the EDTA, it was then and I believe it's still used today, maybe they changed it to something now. But anyway that's what it does. It pulls that contamination out. It's almost like a mineral, it pulls it out and passes out through the elimination tract.
- TG: Okay. What was your favorite area to work in our there?
- DH: 100C.
- TG: 100C? What does 100C have? What do they do there?
- DH: It was a reactor. Now, I'll tell you why I liked it. Number one: I worked with the best doctor that I'd ever had. I worked out there with him the whole time. Number two: We handled all of the personnel who handled shutdowns. You know, every so often, the reactor shuts down. They sent out a group that worked over us. It was still Central Shop you see. We had a group that worked out of there. I also had so many of the really nice construction workers and we had people in there who had a lot of experience. Nobody was after anybody. It was just an unusual situation from beginning to end. And I stayed there the last ten years.
- TG: So that was in the late '70's too.
- DH: Yeah. From '70 to '80. What are you going to do with all this information?
- TG: This is going to be typed up and I'm going to read it and, it going to be for posterity, it's just gonna be for, you know ....
- DH: Like that thing you bury for a hundred years?
- TG: Like a time capsule.
- DH: I'm glad. I'm sorry it hasn't been done on a periodic basis because people would have remembered so much more. Like some of the procedures that would be very interesting. A lot of this is superfluous. You and I know that. It's just one individual. But you could never get me to say any bad about that procedure out there.
- TG: Right. About DuPont.
- DH: I had one problem. One doctor, two doctors. One of them ended up as a psychiatric, a complete psychiatric case and the other one was, in my belief a pathological liar. You could not turn your back on him. The rest of them, some of them were crazier than I was.
- TG: Let's see. So you did not live here before the Plant.
- DH: I wish Mary had been here though. There are so many little things, 'cause she worked in Personnel a lot. She worked with Medical and she worked in Personnel. She was very good. And this Fletcher woman, if you have a chance to talk to her, she had so many different fields. You know clerical did that. They didn't ..... And my favorite, I had two favorite Plant managers. John Grannigan and well, Ken French was very good, and Julian Elliot was the most unusual person I ever knew. All those people out there. I guess Don Miller was the first one of course, but he didn't stay long. They sent him to India or someplace like that. He was smart. Julian Elliott was the most unusual person I've ever known. He went to every

area. If he met you today and he went to Wilmington and came back years later, he'd say, "Well, how are you doing Dell?" He asked me about a black janitor who was out there and, Told me his name and everything.

TG: Wow!

DH: But they were the kind of person that you knew would not lie to you, would definitely not lie to you. And they wanted it right.

TG: Was there kind of, like, I know that there were safety manuals and security manuals. Was there like a written Honor Code or anything like that?

DH: Man alive! Everything. That thing came and you had to change it every.... You'd better know it too.

TG: Was that considered noteworthy?

DH: Safety and security.

TG: So they printed a new one all the time.

DH: Yes. Sir.

TG: They would update it?

DH: Just like the new personnel. You got a new and it had to be added to hour dipsop.

TG: Let's see.

DH: It was amazing. The safety and security and even today, I'll walk into the place and say to them, "That is not very safe." But now we're seeing that security lax. It's so dangerous. Just mention the veterans. Well, I went over the other day and they said your stuff may be somewhere else. Well, you see, I've never claimed any, I did go back and get my BS degree on my GF.

TG: Oh, you mean with identity theft that just happened.

DH: Yeah. Yeah. Every day you pick it up.

TG: Well, was there ever a time, like, when you first started working out there that you thought, "This is silly, I'll just, you know" or were you right on board with the safety and security the whole time? Did you see the importance of that?

DH: If you're in Medical, you realize, particularly safety. I'd been in the Second World War. We got prisoners of war back from Saigon and I knew what war was all about. And I knew that security, and I'll tell you I was taking a sociology class up in Atlanta before I came down here and somebody wised-off, one of them kids who hadn't been in the service, and said, "Well" he said, "I don't know so much about this freedom and security" and then this guy threw himself up, he'd been in French Resistance and he said, "You don't know what freedom is and if you don't learn to appreciate it in your lifetime, you will." And we don't. We haven't. We let things go too far already.

TG: Right.

DH: And I'm not afraid of this.

TG: Let's see ....

DH: I don't know if I told you what you need to know.

TG: Oh, you have! You have just exactly what I want to know. These are, like kind of, we've already covered some of these things and we talked about safety. Let's see.

- DH: I have called everybody I know about that confounded bath. I don't remember. I do remember that wall and that plumbing. See, we'd them busy, we'd go back and watch that thing. We knew not to let any water go through that thing.
- TG: There was an accident. I can't remember where it was. It was out West somewhere and it was called the SL1 reactor accident. Three guys died. Do you think the decontamination bath was put in as a response to that, or did other, do you know if Oak Ridge or Hanford or any of those other places put in similar stuff at a similar time?
- DH: I think so. I don't know whether it was an accumulation of knowledge, 'cause at that time, there was AEC, it was shared. If they had it out there, then we got a notice of that. And you read it. It was read at a safety meeting. And you see, it begins to show you where your needs are. It may never happen, but be ready for it.
- TG: Right. Right.
- DH: It's like New Orleans. You better build that dam a lot heavier and higher the next time.
- TG: I was just wondering, if Dr Poda was in on the design, if he was ....
- DH: See, he went, they would send him everywhere.
- TG: Oh, they sent him everywhere?
- DH: Oh, yes. He went everywhere. And Mack went a lot. But then there were a couple of others in Health Physics who would go; in fact, they went Pennsylvania you know, when the 3 Mile Island thing.
- TG: Oh! Oh really!
- DH: And then they also, a lot of our people went to Russia.
- TG: Oh! For Chernobyl?
- DH: Sure did. And they came back grey-haired at the lack of safety.
- TG: Really? Yeah. Now they're starting to open that up for tourism. Chernobyl.
- DH: Dang if I want to visit? Do you?
- TG: I don't want to go there. No. Let's see. I'm just gonna ask a couple of these questions that are written out. You never had to be treated for any kind of exposure, did you?
- DH: No.
- TG: Okay. And do you feel like your health has been impacted in any way?
- DH: I've had cancer twice and I definitely can tell you that I do not feel that I ever had an exposure.
- TG: Okay.
- DH: Here's the training. Bob Caldwell and Pat Walton really trained you. And they had a powder, fluorescent powder. And if we got contaminated, you know, they'd cut our tail off. So, they thought it was being funny, 'cause we'd go with the equipment and we'd be very careful, gloves, shoes, protective clothing and everything and the minute I would take that glove off one of those jackasses would put just a little powder and I'd get contaminated. Then they would, "You got to go take a shower." So one day, you know, "if your washed you just run ahead and started your IV's for chelation. One day I said enough is enough. I have never made it through here that they didn't put, Pat Walton was the worse, the absolute worse.
- TG: But it was not harmful.

- DH: Oh, heck no. They did it on purpose. I was the only one, 'cause he knew he could get me, 'cause I'd get so upset. I said I've done everything, 'cause see I had a lot of surgical training, you'd think. They fixed me every time. So one day Pat was just frightened to death of me. I mean he was just panicked. You know we were giving all those immunizations out there and so I went over there and I had that thing full of sterile water, I took the top off and stuck it back in there. Bob helped me. We let him get just a drop and I said, "You have to have a shot." And he said, "That thing doesn't have a needle does it?" And I said no. He never contaminated me again. But see, there were always things like that. It was never dull; but it very serious when you were doing it. And there were so many people that broke the rules and felt like "Well I don't have to put on protective clothing. I don't have to put on these shoes." And other things like that, that it's amazing that we didn't have more problems.
- TG: If you were caught doing something like that?
- DH: They'd fire you; and they should have. That is not funny. You're not fooling with chewing gum. Better than any college education and if you took that job seriously and learned what they offered you.
- TG: Well, that's interesting.
- DH: It wasn't terrible. It was so diversified. You had something different all the time.
- TG: Since you and your husband both worked out there, did you talk about your jobs at home.
- DH: Yeah, if we wanted to. We didn't even want to do it. Well now, he knew more 'cause he was out in the areas, but I heard more. Particularly you couldn't discuss some of those things, but you hear more from different areas. You learn, you'll amass a lot of scattered information, but if you put it together, it might be worth something to some foreign agent.
- TG: Right. But they all got "Q" cleared.
- DH: Yes.
- TG: Because like, a lot of couples, like you know, that one of them worked out there, the other one didn't know anything about it, that he worked out there, what he did.
- DH: Well, that's what I said about we were too secure. I'd forgotten about what happened in down in "D" area. It had to be a gas exposure. Well, to keep him out there and to keep him in oxygen and to give him IV's and all that stuff, well H<sub>2</sub>S is gonna kill you if you just get a sniff of that, but you know some of the acids they used to make, but we'd get an occasional small one or something like that. The clothes would be contaminated or something, but the body itself wouldn't. Well you know that immediately went in the bag; you never took that stuff home. So, you might mention something like that, but then they wouldn't tell the family anything. I've had so many people call the Plant Manager and everything; and they're out there if you have an incident like that. They wouldn't tell them these things and sometimes, in as much as 24 hours. That, or course, wasn't right.
- TG: No. What would they say?
- DH: They'd say, "Well they're here and they're doing fine." Well that's not enough to know your husband went to work this morning and didn't come home. How do I know you're not out there in a contaminated pit or something.
- TG: Right.
- DH: It did get a little out of hand.
- TG: Any of this, like you were saying, impact your life offsite?

- DH: Never.
- TG: Never? Okay.
- DH: We had routine evacuations and they still have. That's part of anywhere; we had that regularly.
- TG: Routine evacuation of your area?
- DH: Right. Practices.
- TG: Did you ever submit safety suggestions or anything like that?
- DH: Yeah, I worked real hard to get disposable syringes and things like that because it's so time consuming to do anything different.
- TG: Right.
- DH: In the beginning, see, particularly with one of the doctors who's head of the department, he was very stingy and he would let our IV fluids get way out of date and things. So, we anonymously turned in some things of that nature. That's when McClaren was a jewel and he took over Medical. He got that part of the business part straight.
- TG: Do you think, did you feel that you were really doing something important for the Country, working out there?
- DH: At first.
- TG: At first?
- DH: Later on you realize it's.. Yes, you always have to have certain amount of protection and the disaster is the Atomic Energy Commission is political, political, we can go on and on. Sad. Because they're making some changes with that council that does the advising; that's wrong. Because those people really know what they are doing. It has nothing to do with politics.
- TG: Right.
- DH: And it's really sad. You can see. As far as our National Security, it's gone, the news media ruined, they controlled when they shouldn't have.
- TG: Right. Yup.
- DH: And it's really bad.
- TG: Well, then if you don't have anything else? If you've got any funny things you want to tell me, or any anecdotes?
- DH: I have to tell you. This nurse had a kid. You've seen people with a perfectionist. Her name, this isn't on?
- TG: It's on. I can turn it off. Turn if on or off?
- DH: Oh, leave it on. I'll just say nurse. This nurse, when a patient had been out ill for a few days, they'd have to come through Medical. So, Elizabeth said to her, Miss Jones said. "Why were you out ill?" She said, "Oh, I had an ear infection." And Elizabeth said, "Which ear?" "Oh." She said, "I had a middle ear infection." And Elizabeth said, "Which ear?" And she said, "Elizabeth, I told you it was my middle ear." Well Lucy Walker and I were standing outside the window and we started laughing so hard and Elizabeth said, "Excuse me Miss Strickland." And she came out there and she said, "That is not for anything." There was something like that all the time; just stupid stuff. One day Lucy and I walked out in the hall and, when I first went up to 700, and Lucy's incorrigible, I wish you could talk to her. And she said, "Dell, what is that button for." And I said, "I don't know. I've never seen it." It said just turn on in case of emergency. I said, "Let's see." And I leaned back my head against it and you never heard such

an alarm. And within 30 seconds we had patrolman, EMS, doctors. We just flew down that hall. It gets dull.

TG: What was the worse case you ever treated out there? Like, does anything stand out?

DH: Being involved with individuals, you pick up a blood work and you see "Leukemia," these things and it's really bad. There was an incident when they started putting in the well test that this kid that I'd been sort of counseling because he was getting in with the wrong crowd was out there. They had these long wrenches. You know, you'd twist it clockwise to make that pipe go down to reach that. This really nice black man was helping him and all of a sudden that thing just hit the wrong thing. It spun around and it really fractured, I think it's the tibia. Broke the skin and it was really bad. Well, that was one case we had to send out. They put him in a cast. And I was and the odor and it was so bad and they just sent him right back out there and we come in. So, finally Dr. Baldwin went over to Augusta and talked to that orthopedic man and said, "Let's take the cast off and put something else on." And you know, just old fashioned; that's the way Dr. Baldwin was, old fashioned way. We took in some A&D ointment and applied the ointment and every morning I would debride that wound and then we would lay it with sterile saline towels and put a heat lamp over it and do that. It took us at least three months to get that area healed.

TG: Wow!

DH: And you know to the day I saw him after 25 years a few years ago and he said, "Oh Miss Dell, that A&D stuff is good isn't it?" And you know, you remember people like that. And then the other one was this man who'd been in Patrol and he never did anything but patrolled. Well when they cut down on Patrol, started cutting down, he went in as a truck driver and he backed up and I think it was a loading dock in one of the 200 areas. Well, this drum, he apparently tipped it and that rolled over him and he died. And the other one that was really, really bad was, I think his name was Ragino or something at 400. He fell from a scaffold and he was permanently damaged mentally.

TG: So the guy that the tank rolled over him, he passed away due to his injuries?

DH: Not immediately.

TG: How many, like nicknames, some people, you know.

DH: Gabby, Gabby Barnes. He talked, he never stopped talking from the minute he got up to the minute he went to bed.

TG: No. No. Like nicknames for areas or I've heard like at 703, like if you had to go up to the Managers Office you were going down the Emerald Isle 'cause they had green carpet up there. Anything you can think of like that? Like did ya'll call a particular place some funny name?

DH: No. We tried to stay away from 703. You know 773 was the Lab and the Cafeteria, the credit union. That was a really nice addition to the Site too, when they formed the Savannah River Credit Union. It was all employees at that time. It was very convenient because by the time we'd get into town, the banks would be closed. They'd never stay open in those days. And the cafeteria was a really nice asset too.

TG: That was one of the first things they got rid of in 700-Area.

DH: Yeah.

TG: So I never got to see that.

- DH: Well, they knew then they were beginning to dismantle and it was different without 703 because it all began and ended there basically. There were a thousand things and sometimes I'd don't ....
- TG: Well, that's okay. We can ....
- DH: But you can see the people and remember the funny things and the good things and the bad things and the sad things. I learned a lot. I learned a lot. I learned a lot about medicine from our doctors, 'cause we were always so careful to take a good history when they came back, particularly if they had something rare or different. We were so interested to see what the newer medications and the new treatments. It was just really impressive when Radioactive materials came along for the thyroid. One of the most interesting things we ever had, we had a juvenile, he had become a juvenile diabetic. He had been on heavy doses of insulin all his life. He lived down at Barnwell. He went in and he was having thyroid trouble and they gave him the Radioactive Iodine and he never had to take another drop of insulin. The same thing happened to one of the nuns when Sharon was at St. Andrew.
- TG: Really?
- DH: Never heard of it before or since.
- TG: Let's conclude the interview then.
- DH: Okay. I could give you something to drink or something.

END OF INTERVIEW

## Oral History Interview – Don Law

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Don Law was one of the premier newspaper reporters and editors to work for the Savannah River Plant. Born on May 20, 1922 at Elliott, South Carolina, Law was working as the managing editor of the Orangeburg Times and Democrat, when he decided to seek employment at the Plant. This was in the early 1950s. At that time the initial construction was still going on, and Law started a bi-weekly tabloid geared for the Plant's huge construction force. In April of 1955, this newspaper was transferred over to Operations after the conclusion of most of the initial construction. By this time, the Plant newspaper was called the Savannah River Plant News and Views, the name that it would keep for decades to come.

Law served as both reporter and editor for the News and Views, where his official title was media relations specialist. Naturally, there were many potential news topics that were strictly off-limits. The newspaper reported what it could, and this meant a concentration on safety issues, the activities of the Operations Recreation Association (ORA), and finally, some of the work conducted for the Transplutonium programs and other peaceful uses of atomic energy. Law retired from Savannah River Plant in 1982.

**Interviewee:** Don Law

**Interviewer:** Steven Gaither, New South Associates

**Date of Interview:** June 18, 1999

Steve Gaither: This interview with Don Law, as being conducted by Steve Gaither, Historian with New South Associates. It takes place on the 18th of June 1999 at Mr. Law's residence. This interview is being conducted as part of the Savannah River Site History Project, which is documenting the 50-year history of the Site and its impact on the surrounding area. Mr. Law is being interviewed because of his long involvement with the Plant newspapers.

Mr. Law, could I get your date of birth?

Don Law: May 20, 1922.

SG: Where were you born?

DL: At Elliott, in Lee County; a little crossroads town near Sumter and near Bishopville. On a farm really, in the upper coastal Plain of South Carolina, right off I-20.

SG: What were you doing before the Plant came here; before the Plant was announced?

DL: I was working in Orangeburg, as a Managing Editor of the Times and Democrat. A guy from DuPont came over to talk to the Rotary Club about the huge new construction project under way, not too far from Orangeburg, and I interviewed him. As I tell people, whenever I interviewed with anybody I'd always ask them for a job in those days because I was working about a 14 hour day on a daily newspaper.

SG: Was that in November 1950, that you did this?

DL: No. That would have been after construction was started. The announcement was November 28, 1950. I was at the newspaper office that night. The story was coming in on the wire and this girl, Ethel Ashley, an Ellenton native who worked Orangeburg and also brought in news releases from the Health Department, I think. Anyway, she and her friend came down to read about what was on the wire; what was happening to her hometown. That was a very memorable thing. Ethel just died.

SG: What was Ethel's and other folks, what were their responses?

DL: There were sort of shocked, I'm thinking. They were excited and shocked, I guess. Not upset, I don't think. She was one of the heirs to the Ashley Plantation, about a 14,000-acre plantation. The largest. Everybody knew of the Ashley Plantation. She was one of the heirs to it.

SG: Did you know of any folks lived out on the property that was going to be taken over by this site?

DL: I knew Ethel. She was the only one I knew.

SG: She was the only one?

DL: We were about 50 miles from the site.

SG: Yeah. That wasn't far. Was there much of a reaction out in the Orangeburg area, to the sites now?

DL: Well, I think people were sort of excited about the job opportunities and as Dean Livingston told me today, he was the Publisher of the paper later, that the Plant was the biggest employer of Orangeburg County people in those days, in the construction days in particular.

SG: Was there a lot of work in the area at that time?

DL: No. You know, there was not. We needed industry.

- SG: What were the typical occupations out in the Orangeburg area?
- DL: Well, that was a farming area, primarily.
- SG: No large industry at the time?
- DL: No. Not much. There was a meat packing plant and things like that. Anyway, as a result of that interview, Howard Miller with DuPont sent me an application and I filled it in and about a year later I was called for an interview.
- SG: How much were people told about what the Plant would make, and bringing in?
- DL: I think they knew it was a Weapons Plant; an Atomic Weapons Plant, I think. It wasn't too long after Hiroshima and the end of the war in Japan and you know, atomic weapons were considered the main defense of the Country. I don't think there were any particular negative reactions to it.
- SG: At that time, was there a different attitude about Nuclear Energy and things related to the Nuclear Industry, than there is today?
- DL: Well, we were beginning to hear stories about the wonderful potential of Atomic Energy, and it would run your car maybe, and produce free electricity and all sorts of things. I don't know about whether there was much speculation about its use in medicine or not, but it was considered a benevolent thing from my point of view if you weren't in Hiroshima.
- SG: When you first got your job out at the site, what was your first assignment? What did you first do?
- DL: Well, I was hired to start a newspaper for the construction force, which got up to about 30,000 people at that time and, so I started a bi-weekly tabloid for the construction and it got up to 38,000 and was one of the biggest circulations, had one of the biggest circulation of any paper in the State, I guess. I did that for about 2 or 3 years and then I transferred over to Operations. I was editor of the paper for 20 years or so, but then I was given another title. I was Media Relations Specialist and I had the newspaper. We hired someone else, Bob McClaren I think was the editor, and he reported to me, but I didn't edit the paper at that time. I did news releases and did a little bit of speech writing and things like that.
- SG: Did you talk to a lot of the construction employees?
- DL: Oh, yeah. I was always out in areas interviewing, trying to find interesting stories. We had five brothers, who were all pipe fitters I think. We had two midgets who were hired specially to do pipe work in small areas; enclosed areas. I think one of them was in a Hollywood movie. I forgot what movie. We had all kinds, you know with 39,000 people, you get some of everything.
- SG: Where were the people from? Were they from all over, or lots were local?
- DL: Most of them were from within a 60 or 70-mile area. We had people commuting from Charleston, which was 100 miles. I summed up a few from Columbia. But, generally, they were from the neighboring Counties. Of course, in construction, a lot of people had skill, lathes craftsmen had to be brought in from all over the country. As result of that, the Plant's construction organization was unionized because the union had the capability of bringing in so many pipe fitters, and things like that, that you just couldn't recruit locally. So that was the main justification they used for having unions in construction. Although, it was pretty clear, that they were not going to be unionized in the operations force.
- SG: Did you get a feeling that a lot of the construction employees were coming here hoping for a permanent job, or for most people it was temporary?

- DL: I think most of them, except for the real people who were recruited especially for this job, who went from one big construction project to another, wanted to stay on permanent and most of them would anyway. The typical union craftsman was looking for big construction jobs with lots of overtime and things like this. Which wasn't going to be the case after the construction phase was over. In order to recruit those people, they went first from a 45-hour week and then a 54 hour week. They had six nine-hour days, I guess. The reason for it was partly to get the job done, but more so to inflate the wages to attract the people they needed.
- SG: Did you talk to a lot of the locals in the area, also, during the construction era? Those people not working at the Plant?
- DL: Did I know a lot of the local people?
- SG: Right.
- DL: Well, I moved into Aiken and our friends were townspeople as well as Plant people.
- SG: What was their reaction to this huge construction force coming in?
- DL: Well, they were pretty nice about it, in a way, in that some of us looked pretty obnoxious and wanted to come in and reform things like they were back in Delaware or somewhere, or Tennessee maybe. You know, it was a fact that the DuPonters, most of them were DuPonters, very few were AEC. They really could take over an organization. A lot of them, bright young people with families starting; they wanted to be active and everything. Little League and the playhouse and everything, they wanted to take over. They did take over pretty much. The local people kind of just stood back and didn't have much to do with them. There were many exceptions, of course.
- SG: You changed to Operations then, Operations Newspaper.
- DL: Yeah. In April 1955.
- SG: Was that, pretty much, a continuation of the News and Views Newspaper?
- DL: No. That was a new, entirely. It had been started a year after I started the construction paper. Another guy started the newspaper and operations and I went over and replaced him.
- SG: I guess, what I meant was continuation of the same style, same approach to?
- DL: I would say I had to deal with a lot of old DuPonters who, when I moved into Operations, I had encountered a lot of people in management who wanted to get involved; bosses who wanted to take a more active role in supervising a newspaper, and that was one of my problems. And, finally, they kind of left me alone, I guess.
- SG: That was one of the questions I wanted to ask. Who decided what was in the newspaper?
- DL: They set up this terrible procedure. They already had set up, when they started the operations newspaper, they had a committee of practically the whole staff had to read everything that went into the newspaper.
- SG: The staff of the newspaper?
- DL: No. The DuPont staff.
- SG: Oh.
- DL: Management. They would say, well, why don't you do it over, do so and so, you know. Well, you couldn't just get a lot done. But pretty quickly, I think they realized that, you know, it wasn't a very good way to run; a committee wasn't a real good way to run a newspaper.

- SG: I found in, what is construction's history's guidelines for the newspaper, for instance, that there would be no discussion of politics of political issues; or obviously, controversial issues, or organized labor or anything that could involve security. Sounds like a lot of things that you couldn't discuss. That came from Construction History, probably published in 1955. In fact, there's the cover page.
- DL: This is what it was set up when I started. This is right at the time I was starting up the construction newspaper. This was even before I came to work. This is what was ....
- SG: That is what the stay in power....
- DL: This is was with the construction organization. I had to do some, you got a pretty good run down. Anyway, I had considerably more freedom, I guess in construction days, but in my first phase, they had already had in place in Operations, this terrible review procedure, that I had to show everything to everybody.
- SG: That's the committee?
- DL: Yeah. Anyway, we finally worked it out.
- SG: Was that a big change, coming to this kind of environment from a ...
- DL: A daily newspaper?
- SG: Yeah. A daily newspaper.
- DL: Oh, all the difference in the world. Yeah. I had to be aware of a line organization and so forth. You know, I was no hot shot newspaper man, but I'd know if something; in Orangeburg I could call the Governor if I wanted to, if it was something I needed to be answered. You know you didn't do that in an Industrial set up. You had a line organization and so on.
- SG: Was that frustrating a little bit?
- DL: What's that?
- SG: Frustrating or a strain?
- DL: Yeah. It was frustrating some, but, I got over it, and it worked out very well. I didn't have any bad experiences. That continued only for a year or so, until I got things, I got a boss who kind of went to bat for me and told these guys to leave me alone; because a lot of them didn't know anything about editing a newspaper. They were very capable of production people industry wise, but they really didn't know much about newspaper.
- SG: What did you see as your most important responsibility for the newspaper?
- DL: Well, the primarily responsibility was communication between management and employees; portraying the Company in a favorable light to employees. A lot of it goes public too, to give the public a good impression of the Plant and its employees. The morale of the employees was a lot to recognize; employees who had done something significant on the job or off the job. Community activities were played up and that kind of thing, of course, particularly responsible for promoting safety and, to some extent, security. Initially, our security took a bigger step, but then you got to the point where there wasn't too much the newspaper could do about security.
- SG: How did they use the newspaper to promote safety? How did you use it?
- DL: I told somebody once, that I felt like the paper just presented on outside an appearance of a place where everybody just went in a big hole in the ground and came out periodically for safety meetings; a great coverage of safety meetings and recognition. We played up company service to a guy who got a five

year, or ten or something. If he got 25 years, we'd get a big story about him with a picture of him and his family. But then, eventually, everyone got 25 years and you couldn't do it. I remember we promoted seat belts during the days when seat belts were practically unheard of.

SG: The early '60's?

DL: Yeah. I arranged a picture of guy and his little boy in the front seat of a convertible, so you can get a picture from up above real good, with seat belts on and those kind of things.

SG: Was the newspaper published off-site as well?

DL: It was printed off-site, yes.

SG: It was printed off-site. Was it distributed off-site? Or was it employees only?

DL: In construction days, we had boxes at the gates and you'd take a paper there. Then after I got in operations, we mailed them to their homes.

SG: Did you consider your audience plain employees, or was your audience also the outside.

DL: Essentially for employees and their families.

SG: How did you promote security? You'd mentioned that earlier?

DL: Some ad somebody could see about, you know, "loose lips sink ships" or something like that. Not that, but that was about the only way, some slogan or something.

SG: From your talking to people out on the site, and I'm kind of assuming that you looked around and saw things at the site in ways that maybe other people didn't. I'd like to ask you a couple of questions about attitudes out at the site, and how they changed. Has there been change in the atmosphere out at the site? This is regarding security really, the overall attitude or atmosphere as well, from say, the McCarthy Era and then the period after that, and then you go into the Environmental Era and Anti-Nuclear Era in the late '70's and early '80's. How has that atmosphere out at the site changed or has it?

DL: Well, you know, I left in '82.

SG: Oh. Okay.

DL: So, a lot of things have happened since then that I'm not familiar with. I think everybody was very loyal to the Company and supported what we were doing from the point of defense and believed that Atomic Energy was a good thing, with potential for non-military uses and I think we felt, at that time of course, it was the main stay of our defense. So people felt somewhat patriotic. Is that the answer?

SG: Okay. What did you do during your off hours for entertainment?

DL: I raised three boys.

SG: From my place, that's three points.

DL: Drove a lot of carpools to little league practice and that. My wife and I were very much involved in Church work. I was an officer in the First Presbyterian Church. I was in the Air Force Reserve. I was in there for much of this period we're talking about 'til I reached retirement, about the time I retired from the DuPont, I guess. I had weekend duties about once a month at some base, either Shaw Field or for a while there, after my wife became ill, they assigned me to Aiken Radar Squadron at the airport. I did my duty there. I had two weeks of duty in the summertime at some interesting place, in Shaw Field or Myrtle Beach.

SG: Were you ever in ORA activities?

DL: What's that?

- SG: Did you ever take part, or must take part in Operations Recreations Association activities? The ORA?
- DL: The ORA? Well, I covered the activities. A lot of content of the newspaper was ORA.
- SG: Right. That's the reason I was asking. Was that popular among the employees?
- DL: Oh, yeah. I'm sure. They had a lot of good programs. They had a big picnic, once a year, for all employees; every kinds of sports. I was never much into sports, but a lot of people were.
- SG: It seems like in the early papers, they had dances, big bands would come and entertain and then they would the picnics that you mentioned and sports – soft ball teams and baseball teams, I think, football. Did that change throughout time? Was there less interest in that later on?
- DL: I can't say that there was. I don't know about the last 20 years, the last 18 years, but I think it continued pretty much. There weren't as many dances.
- SG: Right.
- DL: What do you want to ask now?
- SG: Well, the dances at first were segregated, at lease in the ....
- DL: Yeah. They had a Colored Recreation Association, it was called and I don't know. It must have integrated about 10 years after. But they still had some events that were primarily minority. They had gospel sings that attracted primarily. But in the first days, they had a picnic. The Colored Recreation Association had picnics and special events that appealed to them, Gospel sings and so forth. Later, they didn't have those things I guess as much. Go ahead.
- SG: No. No. Go ahead. I was just looking up another question.
- DL: Well, I felt that the Plant, it obviously pioneered in offering job opportunities to minorities that they, the kinds of jobs they never been and never been available before and very quickly the Personnel Superintendent, construction tended to follow the old ways and they just followed existing patterns, but very quickly I think that Operations began to realize that they couldn't do that and they opened up hiring opportunities and eliminated any discriminatory practices.
- SG: Do you know about when that was? When they started opening up?
- DL: I'm scared to say, but the late '50's I'd imagine. I remember Lessy Price, who's now a very influential member of management out there and a City Councilwoman in Aiken. She was hired and she was from essentially a rural background. Her father, they were from a farm down in Barnwell County, but her father had gotten a job in Aiken, as a city employee. But she came in with a high school education, and she was very attractive. She was put at the front desk and she was kind of, management needed to show that they were offering up opportunities to the blacks. She was good advertisement for her race.
- SG: Going back to the recreation, ORA, for a second. Do you think your department management encouraged involvement in ORA and recreation?
- DL: Encouraged what?
- SG: Involvement in ORA? And in Recreation?
- DL: Oh, yeah. They were very much behind it. It was a morale thing.
- SG: Is that the reason that they encouraged you, because of morale? They thought that the off-site activities would enhance the work ethic, I guess?

- DL: I think it was generally conceived. People were busy playing softball and things like that. Well, it was a big, happy family. DuPont was very paternalistic and they wanted a big, happy family and that was one way to have one.
- SG: Was there effort to have, to make it more of a family setting? Was that fusion successful?
- DL: Well, you know, the things like the family picnics; the picnics were for families. DuPont prided itself on being family oriented and if you had sickness in your family, your supervisor made it his business to be concerned, to inquire and be concerned and offer help. All the DuPont Employee Relations plans were slanted in that direction with the Blue Cross and Blue Shield, later dental insurance, and things that covered the family, and life insurance people. Young employees who died, families were left with nice insurance settlements. That would have been unheard of in previous days and rural South Carolina, let's say.
- SG: A couple of the people I interviewed said that their work crew or their department were kind of their extended family.
- DL: Yeah. I think so. There was a lot of loyalty.
- SG: What about the economic impact of the Plant-owned areas around and outside?
- DL: I don't know. It was just unbelievable and the fact that they were able to attract so many people was an indication of what their jobs, they were the best jobs around and everybody knew it.
- SG: Were they still attracting people to the area during operations, or was that? ....
- DL: Oh, Yeah. During operations especially, because it was permanent.
- SG: So they attracted people to \_\_\_\_\_?
- DL: The average person who was hired, local people who were hired and in construction had no comprehension of, you know, I thought I could come over for a permanent job and then I realized, well, they started a newspaper operations and I guess I'll go back to Orangeburg. But, later, after the construction phase, people realized that these were permanent in operations.
- SG: Were there any housing shortages in that area?
- DL: Yeah, very much so. A lot of people lived in trailers. They threw up a lot of duplexes around town.
- SG: Around Aiken, here?
- DL: Yeah. And North Augusta, and Barnwell and Allendale to a lesser extent, and of course in construction, but they even built these trailer parks; government-backed. Robins trailers of Philadelphia, I think, set up a Trailer Park in Augusta, Aiken and Barnwell, I guess, and had about 500 trailers in each one. They even had dormitories too in Barnwell I guess. Things were awfully crowded; we lived in a duplex on the other side of town until we could build a house.
- SG: Was it crowded, there at the duplex area, where you referred to the trailers?
- DL: Yep. It was hard to find places, Yes.
- SG: Did you ever visit some of the Robins Trailers?
- DL: Yeah. Uh huh. I did stories; I interviewed the people who lived in the trailers for the construction newspaper.
- SG: What were the conditions like there? What was it like living in the trailers?
- DL: Well, these were really young people and they really were the salt of the earth, as far as I was concerned. They were good people. They were not unhealthy situations, I don't think. The people who

lived there, maybe, were willing to, either they were not used to anything better, or they were willing to put up with it because of the money they were getting, good money. You know, a 54-hour week. I just came back so many times, impressed with the caliber of people that were working out there. People who didn't have big jobs, but had respectable families and nice homes.

SG: Did the coming of the Plant to this area, also impact things such as schools, education, anything like that?

DL: I'm a little bit deaf.

SG: Oh, I'm sorry. Did the Plant coming to the area, did that also impact school in that area and education?

DL: Oh. Tremendously, yes. The schools had to go, I think some of the schools went on two shifts, I'm not sure.

SG: During the construction?

DL: Right. Uh huh.

SG: Was that even true in operations? Or do you remember?

DL: I don't remember that. Later, yes, but the schools, they threw up a lot of temporary type buildings, most of which have been torn down. Of course they are still using these trailers, you know. All of the schools are dependant on trailers, mobile units still.

SG: What about crime in the area? Did the Plants coming here and all the people coming here, did that impact crime?

DL: There's a legend about all sorts of crime on that highway from Augusta to the Plant site and ...

SG: Is it now Sandbar ferry Road?

DL: Yeah. There are stories about houses of ill repute and things like that, and you know, some of that. But, I wasn't so much aware of it. The average employee was a family man.

SG: How about politics? Have the politics in that area been influenced?

DL: Yeah. We first saw a Republican. You couldn't find one.

SG: You never saw a Republican.

DL: Some of these people coming down were Republicans and very quickly a Republican movement started and took off. North Augusta, you know, they don't even have any Democrats running for office in North Augusta, and it's almost the same way in Aiken. In earlier days, you didn't know any Republicans, except maybe one guy who hoped to be Postmaster, if the Republicans got elected. Of course, that was about the time of Eisenhower and he had a lot of appeal to people all over the Country. It made it easier for the Republicans to recruit people, I think.

SG: I guess, even in Aiken, Aiken was kind of a vacation spot for people from the North who would come down. Is that true? Prior to the Plant's coming in?

DL: Right. But, they lived quite apart from the average. The average citizen had little encounter with them and still, you know have very much dealings with the winter colony. You know, I know a few people pleasantly having been on Red Cross Board with them, but it isn't a matter of opposing each other, looking down on them, or anything else. It's just that they have different interests.

SG: Well, I was thinking of, that would have been one way that different attitudes or Republicans couldn't come down, but if there were only here for a few months ...

DL: They really didn't get involved much in politics. They voted up North probably.

SG: Did you ride in a carpool?

- DL: Oh, yeah. Everybody rode in a carpool.
- SG: Why did everybody ride in the carpool?
- DL: Well, you didn't have two cars usually and it was an economics thing, but it just amazes me to see all these cars coming from the Plant with just one person.
- SG: No.
- DL: Yeah. Everybody rode in a carpool and that went right up to top management. It was a social institution. You know, you spend more time with them, then anybody else. And so you were careful who you got in your carpool. You tried to get people who could stay awake, for one thing. On their driving days, let's say. But even after people got two cars, they continued to carpool up until a whole new class of people started coming in. I guess, when it started really building up, fifteen years ago or so, it had a tremendous increase in the workforce and a whole new group of people came in. Carpools didn't appeal to them. Of course, the oil shortage during the early part of that, changed that some. The Plant promoted carpools, but it was just naturally understood that everybody carpooled.
- SG: You said it was a social institution.
- DL: Yeah. The carpools, those were your best friends, probably. You were with them more than anybody else.
- SG: Was it kind of, an extension of the Plant, off of the Plant into your ....
- DL: I don't think so. It wasn't work related at all.
- SG: You didn't talk about work related things?
- DL: No. It depended on where you lived and where you worked on the site.
- SG: Why did you say that you had to be careful who you got into your carpool? Was that the main reason that ....
- DL: Well, I had one guy who tended to just go to sleep and almost everyone smoked in those days. I don't think anybody worried about that. Smoking was kind of required and in later years, I'm sure, well sometimes, excessive smoking maybe worried you a little bit, but you know, you didn't want somebody who was a jerk. I don't think they call them jerks anymore. They're nerds now.
- SG: Did you usually pay for your carpool?
- DL: Pay for it? No. You just drove one day a week.
- SG: One day a week?
- DL: Yeah.
- SG: So you usually had 5 people in your car?
- DL: The ideal carpool was 5 people.
- SG: We've been kind of curious about carpooling and how pervasive it over at the site, and we also had somebody write to us and he said, "Somebody needs to do an article on carpools, and how much it impacted our lives."
- DL: It really did. I wrote a couple of columns in the paper, I think, about carpools.
- SG: Maybe I can get ....
- DL: I wrote a column called, "Unclassified," and it may have gotten into that some. I wrote something when I retired. They asked me to write everything I had, have you got a copy of that?
- SG: I've got a copy of it.

- DL: Maybe it talks about carpools in that. Let me see what I said about it in that, if you've got it. Gosh, they gave me all this space?
- SG: They gave you a whole page.
- DL: Yea. I talked about the albino crows.
- SG: You got albino crows, huh?
- DL: I went to the museum today, looking for that story about Gus Parkson, and I found it. The story about Fred Renis coming back to talk about Neutrinos. I made a copy of it. I forgot what I said. I don't want to conflict with what I said.
- SG: You talked a little bit about segregation. What about segregation out on the site? Well, I guess you did talk about that. Did they start bringing in, giving more opportunities in the late '50's?
- DL: Management didn't tolerate any discriminatory practices. Anything, anyone that had developed, they quickly eliminated them. I was not aware of much, any racial problems out there much. It seemed to me that, black people got a lot of opportunities they would have never gotten before. They might not all feel that way.
- SG: Did you ever get to see things out on the site that you felt you should cover but you didn't have the opportunity or that you couldn't because it was a family newspaper?
- DL: I recognized that this was not, the Plant paper was not a part of the free press, you know. I couldn't write an editorial blasting the DuPont Company, for example, had I been so inclined. But, I can't think of anything specific like that.
- SG: There's nothing that stands out as something that you really wished that you could cover that, but couldn't for security reasons?
- DL: I'm trying to think. No. Well, several times a release of radioactive material or something and there would be a building evacuation, something like that. I think usually AEC or DOE made an announcement to the paper. I guess, some of those could have been played up real sensationally if you wanted to, but didn't.
- SG: I don't remember. Did ya'll publish those when they were released. I don't remember seeing any.
- DL: I don't think we published them in the Plant paper. No.
- SG: Yeah. The AEC had their press releases.
- DL: We didn't cover those in the Plant newspaper, I'm sure. We didn't handle bad news.
- SG: Right.
- DL: Not a free press.

## **SIDE TWO**

- SG: I just asked you about stories you wanted to cover but couldn't. On the other hand, your job out there gave you some good opportunities to cover some really important things, such as the Neutrino stories.
- DL: Right. I took a lot of kidding about the neutrinos, because I was not a technical man at all, and somebody thought I was nuts about things you couldn't see and so forth that were going through your body; millions of them going through your body all the time. That may be an exaggeration.
- SG: What other important stories did you get to cover?

- DL: Not many. It's hard to think of any, right off the bat.
- SG: I saw, I think it was an article that you wrote, that you took a Russian Scientist on a tour of Augusta?
- DL: Yeah.
- SG: Was that, that was another opportunity.
- DL: Yeah. I was asked to do PR for the American Nuclear Society's topical meetings on radioisotopes, I believe. We had some Russian Scientists here. Those Russian Scientists were really a novelty. They met at the Richmond Hotel in Augusta; the meetings were there. I got to know several of them and I offered to take them on a tour of Augusta, just to show them what the town was like.
- SG: Was that in the '60's?
- DL: I guess it was in the '60's.
- SG: Did you ever do much coverage of the peaceful use of Nuclear Energy?
- DL: Yeah. We did a lot; we promoted. I think the idea was to make people feel like Atomic Energy was not entirely unwholesome. We played up the peaceful uses as much as we could.
- SG: I guess there would also be the point of view that you were at this huge plant and you can't talk about what it's producing, but then you can talk about the peaceful uses.
- DL: Of course, Cobalt was one of the things ....
- SG: Cobalt-60
- DL: We played that up and we played up Californium, all those things. I did do some, I said I couldn't remember any stories. We did do a number of stories about, of course, that Californium would be cure for cancer, 'cause Cobalt was already being used as a cure for cancer and food irradiation. We played it up. It was sort of batted down, but it's come back and is now being promoted.
- SG: In looking back over the things that you covered out there, is there anything that stands out in your mind as the greatest accomplishment in the Plant?
- DL: Well.
- SG: You're coming at it from a non-technical point of view.
- DL: What was accomplished by the Plant? Well, the Cold War, I think that everybody would concede that how nuclear strength had as much as anything to do with; well, atomic energy probably prevented war as much as anything. Between the nuclear powers, both, well, all were scared to death of nuclear attacks. I think the Russians realized how superior, and they couldn't keep up.
- SG: Does anything stand out as the greatest problem at the Plant?
- DL: What was the greatest problem at the Plant?
- SG: Anything that stands out, that you remember?
- DL: No, I can't think of anything that was particularly a problem. I felt good about my service out there. I retired early to take another job, but I had no ill feeling about the Plant or anybody out there. I thought, they had given me a real opportunity.
- SG: From your prospective, did it seem like there were some periods that the Plant operated more effectively, and some periods that it operated less effectively? Or would you be even able to judge that?
- DL: I really wasn't in a position to judge it.
- SG: Is there anything that you are particularly proud of, in being in your association with the site?

- DL: I don't think anything real specific. I felt like I might have made some contribution in creating goodwill among employees and between employees and management. That was my job, as much as anything.
- SG: Do you have any specific examples? Something that you thought that the newspaper did that was particularly effective about creating goodwill between employees?
- DL: Well, I think when we did stories on families, for their service anniversary, or because they had done something significant in the community. I thought that it made those people feel like they were recognized and appreciated.
- SG: Is there anything that you feel bad about, in your association with the Plant?
- DL: Nothing I want to talk about.
- SG: Okay.
- DL: No. I really can't think of anything. Let me think about it. I'll call you back.
- SG: Do you feel that you made a contribution to National Defense?
- DL: Well, yeah, you know in a very general way. I know the Plant was a Defense Plant and we were doing it. I wasn't operating a reactor, by any means.
- SG: Well, that's about all the questions I have. One more thing, I wanted to ask you. It's about, do you remember the big fire in Aiken?
- DL: Oh, yeah.
- SG: It might have been before your time.
- DL: No. I was here.
- SG: You were there? Did the newspaper cover that?
- DL: Yeah. We ran pretty good coverage and pictures of it. The Plant sent a photographer. We sent a lot of firefighting personnel. The Plant Fire Department really brought the thing under control. I didn't come into town about that time, but we had all these pictures and stories about it. As much as anything, I think it made the town appreciate the Plant.
- SG: Were there other incidences like that? That's a real clear example of where the Plant had an influence on the outside.
- DL: The Plant provided the stimulus and the personnel for all kinds of things in town. Such as, the United Way, the Red Cross Blood Program. Everybody at the Plant gave blood. The people who were running, the officers of the Red Cross were often, were usually were Plant people and they supported these things wholeheartedly. The Plant gave, I don't know what percentage, but you have those figures showing what percentage of the United Way money came from the Plant; over half I'm sure. And by that way, the town really became to appreciate the Plant. I know the real leaders in the community knew what the Plant meant and appreciated it. I don't think there's any question about it. Plant people were involved in everything; the Chamber of Commerce, every organization almost to a fault. It was a sore point for a while, and then I think it was no longer a sore point. It was a sore point at first when these people felt like they were being pushed out. But then they realized, then people began, their children began to marry local, families locally and that sort of thing.
- SG: Is there anything else you'd like to add? Something that maybe I should have asked you that I didn't?
- DL: I thought you'd never ask. I can't think of a thing, Steve. You covered the gamut pretty well. If you think of anything else, give me a ring.

SG: Okay.

DL: I'd be glad to answer. I appreciate the efforts you made on the Gus Parks thing and I tried to...

**END OF INTERVIEW**

## Oral History Interview – Mal McKibben

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Born in Buena Vista, Georgia, and raised in South Georgia, Mal McKibben obtained a BA degree in Chemistry from Emory University in 1955. After graduation, he obtained a job at Savannah River Plant in the Savannah River Laboratory. McKibben's "technical assignments included support of SRP's production reactors and the Heavy Water Components Test Reactor, development of analytical chemistry methods, spent nuclear fuel reprocessing, special isotope separations, and research on radionuclide separations. Managerial assignments included technical oversight of the two SRP separations facilities, and Senior Project Manager for design and construction of the \$2 B Defense Waste Processing Facility. His last assignment at SRS was as Senior Advisory Scientist for Advanced Planning" before his retirement in 2000.

McKibben currently serves as the Executive Director of Citizens for Nuclear Technology Awareness (CNTA), an organization whose mission is "to improve public knowledge on the real benefits and comparative risks of nuclear activities, including nuclear production of electricity, nuclear medicine, food irradiation, nuclear weapons production, and nuclear waste management. We also seek new nuclear missions for the Savannah River Site (SRS) and the Central Savannah River Area (CSRA)." (<http://www.c-n-t-a.com/>)

**Interviewee:** Mal McKibben

**Interviewer:** Terri Gillett, New South Associates

**Date of Interview:** May 23, 2006

Terri Gillett: This interview (with Mal McKibben) is being conducted by Terri Gillett, Historian, New South Associates. It takes place on May 23, 2006 at CNTA (Citizens for Nuclear Technology Awareness) at 1204 Whiskey Road. Mr. McKibben is being interviewed for the Savannah River Site History Project for the technical portion of the thematic study. I'm going to ask you again on what we just talked about. How did you come to work at Savannah River Site?

Mal McKibben: I worked at Emory University in Atlanta on Nuclear Research Projects for a couple of years, '53, '54, and '55 and so when it came time to look for a job, they thought maybe I already know what an Alpha particle is and stuff like that, so they, I came over and interviewed and they hired me into the Savannah River Laboratory at that time, 700 area, and I worked out there for about 100 years, more or less. Actually, I retired in '55. Excuse me, 2000. Hired in at '55 and retired in 2000. Had a great career, enjoyed it very much.

TG: So, were you actively recruited?

MM: Yeah. They recruited from DuPont in Wilmington and came to Emory and talked to about six of us and two of us came over and interviewed and I was hired. The other guy went somewhere else by his choice. But, I've always enjoyed it.

TG: And so where were you born?

MM: I grew up in South Georgia, Buena Vista, Georgia is where I was born. I lived all over South Georgia.

TG: Okay. Educated at Emory?

MM: Yup.

TG: Before you came to the plant area, you were a student?

MM: Yeah.

TG: Do you remember the announcement of the plant?

MM: Oh Yeah. I sure do. In fact, I came over here in the summer of '53 to see if I could get a job in construction just for the summer. I didn't get the job, but it was an impressive thing, because it was, as you know, there were about 40,000 construction workers here and it was busy and booming and I think I just looked too young and skinny for them to want to hire me. But it was a big, big deal. Big deal. I remember the announcement very well.

TG: Do you remember, did you know what was going to be made here?

MM: No. Not really. The newspaper accounts at the time said Hydrogen Bomb Plant and they later were saying that what would be made here is materials that would go into making the Hydrogen Bomb, but the bombs weren't ever made here. Although the very early days, before construction started, they thought they might be. In fact, there was a building, 235F, that was sort of build for that purpose. But it was never used for that purpose. So what we did was make the tritium and plutonium. The plutonium part of that became known very quickly. It was a number of years before tritium would become public, but, yeah, I was a little aware of that before I came.

TG: When you moved into the area, where did you live?

MM: I lived in Augusta, Georgia right across the street from what is now Augusta State University in a garage apartment of some rich lady over there. That was all I could afford at the time. But, there was a fraternity brother of mine, he worked at Sears and I worked at the site. We lived over there for about a year before I moved to North Augusta.

TG: So you live in North Augusta now?

MM: I have lived in North Augusta ever since. Yes.

TG: Obviously, you weren't married when you moved here and didn't have a family?

MM: Nope. Nope.

TG: Did you meet your...

MM: Yeah.

TG: Were you married or did you get married?

MM: No. It was a couple of years before I met the lady I married. One of my roommates was dating a girl from North Augusta, who was going to the University of South Carolina in Columbia. Her roommate came down and spent the weekend with her and we started dating and then we got married.

TG: There you have it.

MM: A year or so later.

TG: What was your first impression of the site like, when you got on the site?

MM: I thought it was an extremely well run, efficient, no-nonsense place. Very high security in the earliest days. I could not help but be impressed with the business-like nature of it and with the quality of the people that I met. This is pretty neat, you know, and this is important. In fact, my employment here kept me from getting drafted at that time. It was considered a weapons site for National Defense and my draft board in Jesup, Georgia tried to draft me and fortunately, The Atomic Energy said "No, you can't have him. We need him first." So I avoided having to go to Korea, which was very pleasant for me.

TG: Well, that's interesting. I didn't realize that. What was the attitude towards safety at the plant?

MM: There is no company in the World that has ever had as much emphasis on safety as the DuPont Company had in those days and still does. Every meeting of every sort always started with safety. All of a sudden, you realized this is a new ball game. When you walk up the stairs, you walk on the right. You don't run. You hold the handrail. You don't run on the site anywhere; and it was just one rule after another. So we had lots of safety meetings; we learned the safety rules and by golly, we obeyed them.

TG: So, nobody took it nonchalantly.

MM: No. Not at all. It was very serious and if you saw somebody violating a safety rule, you told them, right quick. It was very common.

TG: Do you think that, that attitude, did it change over time?

MM: No that attitude stayed with the DuPont company as long as they were here. Interestingly, when Westinghouse came in, some of their rules were less strict than ours. And there's a funny story I heard and I believe it's true. The first Westinghouse plant manager was named Jim Moore. He was walking up the stairs and on said behavior one day and saw a maintenance man. Saw him not walking onto the rail and taking two steps at a time. He called him down and said "You can't do that." That was sort of typical. But Westinghouse, to their credit, which is now Washington Group picked that up, they learned

the lesson, they saw the value, and their safety record has been excellent. I have nothing but good things to say about them for that.

TG: Did you ever have to be treated for a radiation or a chemical exposure, while you were at the plant?

MM: No.

TG: No?

MM: No.

TG: Do you feel your health has been impacted in any way, good or bad?

MM: Oh, I think it has definitely to the better. Believe it or not, I am convinced as a lot of other people are that, small amounts of radiation of both background improve your health and there is a lot of good evidence of that.

TG: Okay.

MM: And so, I expect to live forever, and so far, so good.

TG: Pretty good. So, we just talked about safety. I want to talk a little about security, the attitude towards the security at the plant. I know you said it was tight.

MM: It was very tight and there was no nonsense. You followed the rules or you got called into your boss's office right quick. People who left their badge once, their supervisor contacted them. If they left their badges home twice, their boss's boss contacted them. Three times, you were in serious trouble. It was, violations were written up and was a serious part of your performance on your job. We had a big control, for example in Separations Plant in "F" area. First of all it was exclusionary, so you got onto the site with one badge and you went through the exclusionary gate and got another badge and you went upstairs where you worked. There was a long control room there that was divided into three segments. The people in one segment had no idea what the people in the other segment did. This was for security. That was very rigid. It was taken very seriously. But in spite of our best efforts, the Russians built a plant just like ours. They built it cheaper, but there was the same process.

TG: Did you, were you able to work on site before you got your clearance?

MM: No. I actually got my clearance before I showed up.

TG: Oh.

MM: I interviewed early enough, so they had time to do that.

TG: About how long did that take?

MM: Oh, gosh. Several months. Three or four to five months to get my clearance. So I didn't have to go through that. A lot of people did.

TG: Okay. Did it ever make you uncomfortable, the security issue? I mean having to deal with all these different...

MM: No.

TG: No?

MM: No. It really didn't. I thought it was kind of neat to have my own safe. Keep secrets in there, you know. It was good and we thought it was serious. This was a war mentality. I mean, seriously. We felt like we were doing something important for the nation and to this day, I think we did.

TG: How did that security impact your life off site?

- MM: It definitely did. I could not tell my wife anything about where I worked or what I did; my family and in the community. You were told in your training for security you don't talk about your job if you're in a restaurant or in a bar or whatever. That's just not something you do. And so it did impact it. But not adversely, you know? I could still talk about the weather and football and baseball. I just couldn't talk about my job.
- TG: About management real quick.: Can you tell me about any changes that happened between the DuPont and Westinghouse switch?
- MM: Yeah. There were some very major changes because DuPont's contract said that DuPont ran the site according to their own personnel policies, their own engineering standards, etc., etc. When the Department of Energy, over that period of time, developed standards and things for every other site in the Country, but they did not exercise those at the Savannah River Site. So we were the Savannah River Site in those days. DuPont had a freedom, that the other sites did not have. When DuPont said something was unsafe and they were going to fix it, it was unsafe and they fixed it. Now, at other sites, the DOE didn't have to approve that, or the Atomic Energy Commission, whichever it was. And it was a very different way of doing business. No, the Atomic Energy Commission people were on the site proper. They were all in 703-A and when they wanted to come out, they called and got permission to come out. It's a very different world when Westinghouse took over because all of a sudden you did everything by DOE order, DOE regulations, DOE QA standards and procedures; conduct of operations. All of those rules and regulations were very different. So it was quite a major change. And then of course, DOE at that time, also established offices in all the areas to oversee work. We called it "man to man defense," but it was very much, they were very much present. That's what Congress wanted them to do. And they did it. For us poor workers, it was not altogether pleasant because now we had to explain and justify everything we did, where we didn't have that problem before. It was very much a different way of doing business.
- TG: So not only did you see a new management, you saw DOE a lot more.
- MM: Yeah. They were on the site and they would come into your office and ask questions and sit down and have a cup of coffee with you. We never did that before.
- TG: I'm going to go back to security real quick.
- MM: Sure.
- TG: What did your training consist of? I assume you had an initial training.
- MM: Yes. You had to go through an initial training; part of employee initial training. Everybody went through it: for safety, for employee relations, for standard DuPont practices and security. The rules were clear. You got your own security manual and your own safety manual and you learned what was in that manual. Every month we had a safety and security meeting and those tough topics were covered in that meeting. They usually lasted an hour to an hour and a half. It was a significant meeting and records were kept, who was there, who was absent. If they were absent they had to make it up. It was taken very seriously.
- TG: Were there any specific security training for you job other than the other employees went through?
- MM: There were specific security rules for each area, depending on the level of security that was required for that area; and there was different levels. But, generally, the security rules were the same. Security

manual covered it. You could not leave your safe open, unless your hand was in it. If you walked out of the room and your safe was still open, that was a security violation. And if you were caught doing that, you were written up and it was in your permanent record. It was very serious.

TG: Who had safes in their office?

MM: Almost all the professionals did, and managers. If you were doing work in a secure area and doing work, research, whatever, or production on something that was secret, then your monthly reports were secret, all of your, a lot of your internal memos were secret. And so you had to keep a very strict accounting of those, and you had to keep a list of all of them that you had in your file. So, it was a very strict, much stricter even than it is now as far as the accounting of your documents is concerned.

TG: Okay. What did you do, were you involved in a recreation association and what did you do in your off hours?

MM: Well, young single guys mostly chased girls, but we had a lot of single people in the early days and we established a lot of friendships. We had bridge clubs, we had other activities that were employee-decoration association events that we went to. Most departments had dances or parties for their employees. There were a lot of things to do. It was kind of an interesting time because a whole bunch of us guys who came here right out of college and quite a few young girls also. So it was a social time and it was often. There were at least two movie theaters downtown Augusta and at least one good restaurant, sort of good. We went to those places. We went bowling.

TG: Were you encouraged to participate in company special activities?

MM: We were given the opportunity. Your boss would say, "Gee, we'd love to have you there; I hope you can come." You know, that type of thing. But there was no pressure.

TG: Do you feel that DuPont/Westinghouse or other management were interested in your life off-site?

MM: DuPont was very interested in your safety off-site.

TG: Okay.

MM: And they spend a lot on teaching you home safety, fire prevention, don't electrocute yourself, you know, those kinds of things. But DuPont neither/nor Westinghouse has ever made a point of trying to do any control of your off-site social life or church life or whatever. You know, that was up to you and so it just wasn't part of it. Now it was a little different from Los Alamos, where they were in a closed city. They had much more organized things that they did than we did here which was never a close city. Although, when they first started designing the place, they thought it might be, but it wasn't.

TG: When you said moved to North Augusta, did you move into one of the subdivisions that were built to house....

MM: Not initially. I did. We first got, it was a duplex apartment on Georgia Avenue. Three of us single guys. It had three bedrooms and then one of those idiots got married and we moved to a place over in Summerville, which was one of the communities that build for housing the surplus people that were going to be "transients," the locals called us. Coming in there, you know. I had a 4 bedroom house over there, in that area, a bunch of us single guys. I was the kook!

TG: And you still live in North Augusta now?

MM: I do. Just outside of North Augusta really, but it's basically North Augusta.

- TG: Did you ever contribute to any of the safety suggestions and things like that? Do you remember in participating in that program?
- MM: Oh yeah. Part of the program was they encouraged you to turn in safety suggestions; the things that you saw could be improved. I think all of us did that. It was encouraged and your boss smiled on you if you turned in one or two of those every month. That's was viewed as a good thing.
- TG: Did you win awards for your suggestions or other actions?
- MM: No. I don't think so. I don't remember winning any awards. There were some people who turned in humungous numbers and they were recognized and written up in the plant newspaper and that kind of thing, but I tried to avoid that much fame and fortune.
- TG: How was the plant newspaper looked at. Was everybody excited when it came out?
- MM: Oh Yeah. The plant newspaper, the SRP News, was read by everybody. A lot of news: weddings, you know anything in that. Some really good writers. A dear lady who lived next door to me in North Augusta, Pearl McMann, used to write an article every month. Good articles. Don Law was the first editor of that; and now he does a little work for the Aiken Standard Newspaper, although he's getting a little up in years. He turned out a good product. A lot of information. Safety records. Who won the safety award for the month. So much of this year, whatever. There were a lot of things in there of interest. But nothing secret.
- TG: Nothing secret.
- MM: Right.
- TG: Did you carpool to work:
- MM: Yes. Almost everybody did in the early days because, believe it or not, in the '50's, there weren't many families who had two cars. So, to carpool was essential; and it was highly encouraged; one of the things in the newspaper was ads, where we worked dayshift and we needed a carpool member. You know, that kind of thing. Almost everybody did. Yeah. That was kind of the "folksiness" of it. Had some weird carpool drivers. Guys I wasn't real sure I was going to make it out alive occasionally, but we did. But that was common. Almost everybody did that.
- TG: Okay.
- MM: If you stayed over and had to work extra, the site had a traffic and transportation department. You'd just pick up the phone and call them, they came and got you and took you home.
- TG: Really!
- MM: Yeah. And it worked very well. They don't do that anymore.
- TG: Do you remember the traffic? Was there a lot of traffic?
- MM: Yes. The DuPont 500 is what they called it. There was a lot of traffic. The highway patrolmen, for the most part of it, left us alone. They didn't want to get in that mess. It was a lot of traffic. But of course, DuPont, since everybody started the shift at the same time. Later on Westinghouse had so many people on the site, that they sort of had one shift heading out, one after another with that sort of thing so that, in one area, to help the traffic problem. In the beginning, it was all at the same time. It was liberal.
- TG: Can you talk at all, about segregation out at the site?
- MM: Sure. The site originally constructed as a segregated plant. But before it ever opened, DuPont and the Atomic Energy Commission weren't going to operate it that way. Now this was 1951.

TG: Right.

MM: And the site was segregated, meaning the whole area was segregated, the schools were segregated. Most of the stores were segregated. And the restaurants certainly were. And so this was a bold decision by the DuPont Company and the Atomic Energy Commission. There weren't going to do that. So, we all ate together in the same cafeteria. We all went to the same change rooms and all that sort of thing. At least all the men went to one and all the ladies went to another. But, there was no segregation of black vs. white. They hired quite a few blacks; some professionals. One of our really super chemist, PhD Chemist lived in Columbia and got a PhD from the University of Chicago. Black guy; super nice guy. So there was lots of openness; a lot of friendliness; not a problem. It was just not a problem.

TG: What buildings did you work in out there?

MM: I started in 773A, which was the Savannah River Laboratory. I worked there for a year or two. Then I went out to 772F, which was the Laboratory's Department for doing control of the site processing; doing its analysis and sampling and that sort of thing. Then I went to 706C, which was a Reactor Technology Building in "C" Area where the C Area Reactor was. Then I went to 704U, where we had the heavy water components test reactor. I worked there for a few years. Then back out to 772F and I was in Separations Technology at that time. Separations Technology had their own double laboratory in the Laboratories Department Building. I did that for a few years. Then I went to 221F, 221H, then to San Francisco. I came back and worked in the Defense Waste Processing Facility, "S" Area – a couple of buildings there. I was a project manager on that project. Then up to 773 4A I think it is. It's an office building next to 773A. I stayed there in Advanced Planning Group until I left the company C and D HR.

TG: Did DuPont encourage career diversity? Did they want you to move around?

MM: Yes. Yes, they did. DuPont, more than any other company I've ever known, moved you around very deliberately as part of developing your career. They would plan, OK where do we see this person being 10 years, 15, 20 years from now, and what sort of experience does that person need to get into that job. And they did that. They did move people. There was some movement off-site to Commercial DuPont, but not a whole lot. Most people, if they were at a site, they stayed at a site. And I did, but through a number of different departments. And that was valuable. It was very valuable experience. It improves your marketability. It was a good plan. A good career development that DuPont did.

TG: When you started there, did you expect to retire from there?

MM: I had no idea. I had no idea. I didn't know what to expect for my career. I didn't know where, whether I wanted to go to a Commercial DuPont Plant, or somewhere else. So, I just took it as it came. And, I had a wonderful career. I just thoroughly enjoyed it. Good people – DuPont and Westinghouse.

TG: Part of my little project is 703A, the building. Can you just tell me about that building? Your impression, did you ever get called up to that building?

MM: Oh, Yeah. Regularly. All the time. That's where the management was. We had reviews of activities. If you were working on some project, you wanted to tell management about it. You went to 703 to give talks and to do planning and to do other things. That was a routine visit and trip and was always fun to rub shoulders with the brass, you know, when you were a young fellow. That's where all the Atomic Energy Commission Offices were. So it was a routine thing. Plus, that was a lot of, like the Photography shop was there, the plant records division was there. So, if you wanted to look up an old monthly report,

or something, that's where you went to get it. If you wanted to get the photographer to cover an incident for you, an event, that's where you went to pick up your photographs. You know, that sort of thing. So it was a regular, busy place. We all went there.

TG: Actually, most of the photography records I've gone through a lot of the old negatives and it will say like "major incident" or "minor incident" and it'll be just a picture of somebody laying on the ground like they fell. Do you know anything about what that would be?

MM: Nope. Nope. Nope. I never fell. No. I don't. That doesn't ring a bell with me.

TG: Okay.

MM: My experience with photography was when I had an experiment going or some new equipment coming in and I wanted a picture of, you know that kind of thing. I'd just call them up and they'd come out and take pictures. We had a particular celebration for an effective something important; a ground breaking or a safety record or something and we had a celebration. We would always get photographers to come out and take pictures of that. They would often go in the plant newspaper. I was never involved in any incident photographs, I'm glad.

TG: They did look minor. They looked like maybe somebody tripped over a mop.

MM: Oh. I guess. Yeah.

TG: Is there anything that stands out in your mind as the greatest accomplishment for yourself or the plant? You can answer for yourself first.

MM: Well, I really had the wonderful opportunity for a Bachelor's Degree Chemist to do some research and development and I did in fact, have some inventions which led to major improvements and reprocessing a fifth fuel there. It got written up, broke papers. Those things gave me a great deal of credibility with my management; got to go to Wilmington and give a talk. You know, that kind of thing and it was three or four of those that stood out as things I'm just dang proud of. For the plant as a whole, wow, there are several things. We had, by far, the highest Neutron Flux in one of our reactors that any reactor has ever had; and did some incredible production of very isotopes, heavy isotopes. Way up here. And, that was an amazing achievement. I didn't have anything to do with it, but I was sure proud of it. There was a fellow, I forget his name now, who discovered the Neutrino in one of our reactors and he won some major prize for that; The Nobel Prize or something, but it was first discovery and proof that there was the Neutrino, which had, theoretical Physicists had predicted existed, but nobody had ever proved that it was there. Well, this guy did. Cohen, I believe, was this guy's name.

TG: That sounds familiar.

MM: Yeah. But, anyway, that was a major thing that happened at the site. It wasn't even a DuPont thing. That was a, some, a National Lab came in and did that and just took advantage of the fact that we had a lot of Neutrons in our Bio Reactor. We had some incredibly good safety records too, from time to time. Fortunately they are still having those. Construction right now the site has gone some amazing long times without accidents. And we did too. We won prizes and awards for that. Clocks, or umbrellas, or you know, all sorts of things. I think everybody there was proud of our safety record. It has always been true, and often said, that just based on statistics, employees were safer on the job than at home. And that's still true. And that's important. That's something that everybody was proud of.

- TG: Is there anything that would say, contrast, that stands out that is a problem at the plant? Or something that you weren't pleased with out there?
- MM: There were always little technical problems on the job, but no really big ones. No really big ones, where we killed somebody, or released a lot of radioactivity. Or that kind of thing. We just didn't do that, and, so I don't know that I would say any particular problems. The traffic was a problem. But, no, I would say no. Nothing comes to mind.
- TG: Okay. Okay. Back to just you personally, how did you get interested in Nuclear Chemistry to begin with?
- MM: Well, I was a sophomore at Emory University and I thought I was going to make it into Chemistry. One of my chemistry professors had this contract with the Oak Ridge National Laboratory and he said "I'd like for you to work on this job and, if you will, be the student leader. We had about six Chemistry majors that did analyses and that sort of thing. So, I thought that was kind of fun. Learned how to do counting of Beta/Gamma counting and other things; chemical separations and learned how to separate radioactive materials. That was just fun, so I wasn't sure I wanted to make a career out of it, but it was fun. So when I was offered a job over here, I took it and I thought I was going to go back to graduate school after one year, but my car died. The second year I got married. You know, I never did go back.
- TG: Not that you just fell into it, but it wasn't really a result of, like, arms race or any National....
- MM: No. No, it wasn't, but it was an exciting subject. In the middle '50's, early '50's, it was the thing of the future. Everybody thought nuclear energy is going to really boom. So, it was an exciting field. And, in fact, the Savannah River Site had no problem hiring the very best and brightest students from all the universities. Cause it was an exciting field; everybody loved it. It's different from that today. But, the good news is, that's turning around. In the last 3, 4 years all of a sudden the enrollment at universities that have nuclear programs has just gone straight up. We're going to see a lot more of that excitement as we explore how do you make a reactor to drive a space vehicle. You know that kind of thing; in which people are working on. So there is a lot of excitement there. It's not like it was in the '50's, but it's still a lot better.
- TG: Is there anything that we haven't discussed, that you'd like to talk about, while I think of something else?
- MM: Well, you know, it's been, for those of us who were there in the early days, when it was so new and so exciting, it has been sad to watch it die because the plants that we were in, almost all of them are shut down. A lot of them are being demolished and torn down and that's been sad. One of the things we do here at this office is spend a lot of time trying to get new missions for the site. And we are really please and excited that there are some real options out there that we think are going to come. And, we believe that the long-term prospects of the Savannah River Site now are very good. But, it has been quite a transition from those early days; we wanted to make as much plutonium as we can; we want to make as much tritium as we can. We want to protect the site environment while we are doing that, and all of a sudden that whole mission is gone. Except for making tritium. We still do that, but separate it, we don't make it. That's been a sad thing.
- TG: Okay. Can you describe, like health protection measures that were taken out at the site?

- MM: Yeah. We had a department called Health Physics, whose job it was to train us and to monitor things and be sure that the protection, I guess, not only radioactivity, but also chemicals were very carefully controlled, and we knew how to deal with that and all the proper equipment, radioactivity monitoring, etc. etc. We were trained on how to do that. Certain jobs you had to have a Health Physics person with you to make sure it was done right. So that was from the very, very beginning. An essential thing and a very accurate to the extent that they could be done accurately, records were kept on the exposure to chemicals as well as radioactivity. And, I think it was done very professionally and very well. I never had any doubt that the company and the government had my interests in mind in that area. We had Government regulations and DuPont always set their limits well below that; and ever since then, they have been set well below that by right. So I really had not concern about whether I was getting too much of this or that. Hazardous chemicals or radiation were monitored too closely and we were trained too well.
- TG: How was it monitored?
- MM: There were lots of different ways. For example, in all of the laboratories, there were continuous air monitors so that if there was any airborne radioactivity, it would immediately alarm and you knew. In addition to that, there were individual monitors, film badges, dosimeter pencils, etc. that you had to wear if you did certain types of jobs. And you read those, or you turned your film badges in and Health Physics read them for you. Those records were kept, very, very well right from the beginning. So, if you knew you were supposed to get no more than a certain amount of radiation in a week, in a day, in a month, and those, you knew right where you stood. I worked very closely with a lot of very high-level radiation. Again, I never had a doubt that it was being handled as safely as it could be handled. It was in my hands. If I was going to do something, I knew when HP needed to be there and knew when they didn't need to be there. I had instruments that I could use and the pencils and badges, so it was just very well done from the beginning.
- TG: Well, is there anything else that you'd like to say; and anecdotes about the site?
- MM: Oh, there were a lot of good times. At the production building, 221F, there were a bunch of guys that came out there on the loading platform every day for lunch. They brought their sandwiches and cokes and they would toss bread out and they got several crows. They'd come out there every day and eat the bread. One of those smart-alecs put out a little trap that trapped a little crow. They had spray painted him white and turned him loose, and there were all sorts of reports about an albino crow climbing all over the site for a long time. There were things like that that went on. But it was a fun place and a very responsible place and I enjoyed it very much.
- TG: Well, great. I'm going to conclude this interview.
- MM: Okay. Very good. I'm glad you came over.
- TG: Thank you so much.

**END OF INTERVIEW**

## Oral History Interview – William Mottel

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Born on March 6, 1929, William Mottel was raised in Michigan and later attended Michigan State University, where he received a degree in chemical engineering. Active in the Army's nuclear weapons program in the late 1940s and early 1950s, Mottel obtained the rank of major in the Army Reserve. He began working with Du Pont at Savannah River Plant in 1953, where his first assignment was in the Savannah River Laboratory. In 1964, he transferred to Savannah River's Separations Technology, where he served as an area supervisor. He became assistant plant manager of the Savannah River Plant in September of 1975, and became the fifth plant manager after Kenneth French's retirement in December of 1976. Mottel served in this capacity until November 1979, after which he became a production manager in Du Pont's Petrochemicals Department in Wilmington, Delaware. He went on to work for Du Pont overseas and to co-author *Industrial Safety Is Good Business, The Dupont Story*.

**Interviewee: William "Bill" Mottel**

**Interviewer: Terri Gillett, New South Associates**

**Date of Interview: June 21, 2006**

Terri Gillett: This interview with Mr. Bill Mottel is being conducted by Terri Gillett, Historian with New South Associates. It takes place on June 21, 2006 at Mr. Mottel's home on Hilton Head Island. This interview is being conducted as part of the Savannah River Site History Project which is documenting the 50 year history of the Site and its impact on the surrounding area. Your date of birth is the first question.

William Mottel: March 6, 1929.

TG: Okay. I know you got your degree in Chemical Engineering from Michigan State.

WM: Yes.

TG: Did you pursue that career knowing that it would come to lead you into Weapons Technology?

WM: I had no concept when I went to interview with DuPont. What they said is, "We'd like to hire you, but you're going on active duty." I was an ROTC graduate in tech. I was distinguished military graduate and they offered me a regular Army deal and I said "no." I had a wife and two little ones and here I was, a graduating senior and I said, "I'll take my chances." And so I was called to active duty, I graduated in June, Second Lieutenant, ready to go. Because I'm going to be become a Chemical Engineer some place. DuPont said "wait until your military obligations are over." That following August, I found myself a job with Park Davis and they said, "We'll take a chance with you. And then maybe you'll come back to us after your military obligations."

TG: Okay .

WM: I chose to go with DuPont after a little better than two years and I was kind of putty in their hands with the military. I went to Aberdeen Proving Ground, Army Ordinance Officers. Fresh officers were running through a training program, probably something like six to eight weeks. And then they were put into field organizations and most of them were going to Korea. I'd been there for about four weeks. I got called down to Headquarters and I said, "What in the world is this all about?" And they said, "We want you to fill out some paperwork and I can't tell you why." So it turned out, I was getting into the Nuclear business in stock piles and all that kind of stuff. I had a very good academic record and I think the leadership thing was there. "But," they said, "now don't tell anybody what you've been doing." Most of the people left and they kept me there to go to another course. What do you want to call it? I needed a "Q" clearance, which was a top clearance and they couldn't tell me what I was going to do or anything else until the clearance was there. So on a Friday they put a note in my box in the bachelor officers' quarters and it said, "Come down to Headquarters." I went down to Headquarters, and this was on a Friday. It said, "Monday morning we want you in Albuquerque, New Mexico." And I said, "How about that? How can I possibly do that?" We negotiated for a little more time; a week or two because of my wife; it was going to be a permanent change of station, which meant that I could bring my wife down there. So they put me into a Nuclear branch and it was normally about 12 people; 12 or 13, something like that and they represent all the branches. So, I went to school for six months and then they came to me right after and said, "We'd like you to stay and teach." So here I was with stockpile knowledge and all this stuff. There weren't many books written at the

schools - what are the nuclear weapons? How do we use them? What they were. All that was memory. And they were doing it for staff people that were taking. But they pulled me out of that thing. They started out looking for a Nuclear Physicist. By the time they got down to me in the Chemical Engineering and my record, they sent me to the course and then they allowed me to teach. And that was quite an experience. We spent a lot of time with Los Alamos and the whole shebang. So when I got ready to get out of the military, DuPont said, "Well, we've got a job for you."

TG: Okay.

WM: And it's Savannah River. I would know everything that was going on at Savannah River and what was going on because of our... what materials we were going to make, how to make Plutonium 239, how to make Tritium and all this kind of stuff. I had that in the military.

TG: Okay

WM: So when I came in, one of the first things they said to me was, "You have quite a background." And I said, "Well, why am I not in manufacturing? I got interviewed for the manufacturing job." And they said, "Well, because we thought with your qualifications, you'd be better off in the Laboratory, but now if you want to go over and talk to the Lab director, he'll tell you the same thing." He told me, Noel Law is a tough old guy, and he said, "You really don't think you ought to be here?" And I said, "No, I think I'd be better over at the Plant, where I'm in the manufacturing part." He said, "Well, tell you what? Why don't you give it a try for about six months and if you still feel that way we'll go along with you and you can go over to the Plant." 16 years later (laughs)...something like that, I found myself in the Plant. I went through a whole series of jobs, but when you look at going to the Savannah River Site... if it's all right for me to deviate here?

TG: Absolutely.

WM: I'd never been in the state of South Carolina and we were in Albuquerque, New Mexico and the humidity was about 20% in Albuquerque, and it was swamp when you got to South Carolina. I said, "Boy is this going to be tough." The wife moved down. I went on active duty in August. I was in Albuquerque, New Mexico in December and my wife was allowed to travel down home for Christmas holidays and then she came down soon after. She saw Albuquerque. She didn't see South Carolina, and she said, "This is kinda nice." (laughs) So we took the job in South Carolina, site unseen. And then I remember saying to several people up north, I said, "You know, the people in the South are going to live longer." And they said, "It's going to seem longer." (laughs) Because, growing in an area like Michigan, New York, that kind of style, it's like. "Let's just get the job done and move, move, move." The southerners are really kind of slow, there's nothing disrespectful about it, but it makes you a little anxious, like, "Gee guys, why don't we do this and why don't we do that."

One thing happened after another and before we know it, we've got five children. Then we were seven. We had up to seven. We had two when we came in here; and we had five more.

TG: Wow!

WM: We always said we were only going to be here for a couple of years. We adjusted to everything, the kids got in to school and I said, "Gee, this is great." I'm moving up to Plant Manager and everything is fine; doing well in the community. My wife is doing some teaching and we were just as happy as can be. You

know. We were up to our eyeballs. I coached peewee football for 25 years, which was; you probably don't have that.

TG: No.

WM: I'll never forget that. The town recreation people decided to put in a peewee football program, that's [ages] nine to 12. They wanted any interested people to come down. So I went down to the meeting and they said, "who do you represent?" And I said, "Our Lady of Peace School." And they said, "Oh, you can't play in this program." I said, "You can't? Why not? It's a recreational thing and you're doing it on a school basis for the place to practice." They said, "Well if we let you in we have to let the blacks play." And I said, "Oh my goodness. What have I run into?" (laughs)

WM: And there was a big banner at the Baptist church in North Augusta, and it said "Saturday Night, Catholic Priest to Tell All," you know at such and such a time. I'm saying, "goodness gracious." There's probably a dozen of us in the Catholic family, you know. And here they are. But that was, just to grow up with that, you know. The thought down here was, you have to be here about 20 years before they stop calling you newcomer.

TG: Right.

WM: And so that was, and the Barry Goldwater campaign was coming along about that time and I found out, I was raised in Michigan and I was potentially a Democrat because most of the people in Lansing, and that area, were Democrats. My parents were Democrats. I got down South and I said, "you know, these southerners, they're darn good conservative people and they know what they're doing. And they're God and country kind of people." So, I ran for office and I was one of the first three that got in there since the Civil War.

TG: Wow.

WM: So, that was interesting. But getting involved with the Plant and that going on, you get to a level that you have to give up on stuff like that because, for example, you can't hire people who you would like to hire. You got to go and find the right kind of people. We had a waiting list; thousands of people who were looking for work. So I had to get out of the crossfire, after I ran for town office. But, we really got to love that town; it was fun. I chaired the Public Safety and Public Water and Sewer business for Aiken County. The city of North Augusta, when I was on Town Council, was dumping raw sewage into the Savannah River. The State of South Carolina came down and said, "You know, you can't do that anymore." Here I am, a Chemical Engineer who knows something about water and everything else. I said, "You know, they gave me the responsibility to do something because they said if you don't get the thing taken care of in North Augusta, they'd be no more building permits." So all of a sudden all the real estate people and everyone else are on our side."

TG: Right.

WM: So they can sell more property and whatever. And that was quite an undertaking, with Strom Thurmond, who I got to know very well. It was about a 40 million dollar deal at the time. Strom always said, they couldn't have done it without me. But it was funny. They put together this thing and we started taking sewage from Aiken and from North Augusta. And now, I think they're reaching way out. Once you've got a good water and sewage system, you can really expand.

- TG: Right. Right.
- WM: For the town that had an organized thing to do. But all of a sudden it just hit me. I got into that business and started to see the southern people in the job. Went to see Strom Thurmond . We had to select an engineering firm and for this we need money. Strom was one of those guys who said, "I'll get it for you." He did. He was fantastic. So they, I got a little note from DuPont and it said, "Well, you've been down there for quite a few years and you've been the Plant Manager. When are you going to start up your Waste Water Treatment Plant?" And I told them, they gave me a year, an extra year to stay.
- TG: Okay.
- WM: So to get that thing going, 'cause I thought running it in the community ....
- TG: That was at the end, that was when you were Plant Manager you started the waste water thing?
- WM: Yeah. I actually started it too, about four to five years to do it all and to get the money. But, I was too young to retire. And it was such a nice promotion, but to leave a town in which you've been in for 26 years, I mean forget about Michigan. This is the longest place I've ever been.
- TG: Right.
- WM: I remember going out when I got ready to take the transfer because it's got to be the right thing. We'll take the promotion and go along with it. I went in there [Du Pont] as Production Manager for a number of plants. Had fun. They put me in a kind of Personnel job. Then they asked me to go to Switzerland.
- TG: Oh.
- WM: I was in charge of Employee Relations for DuPont in Europe. And that was fun; Carol thought she was on vacation and I was over there working.
- TG: Yeah. I would like to live in Switzerland. I'm going to run back to Albuquerque real quick.
- WM: Yeah.
- TG: Was there a buzz about the Plant being built in South Carolina? Did you hear anything about it? I mean seems like the same industry.
- WM: The thing was handled so well, that they just had the big wigs who really wanted that Plant here and nobody ever knew what they were really gonna do. They didn't have anything to really bite on until they said, we started to see how many jobs were going to be there. The people were looking for it. It was one of three sites in the United States and that one was selected, and for a very good reason.
- TG: I just didn't know if, while you were working in New Mexico, I mean, I guess my question is when did you first hear about the Plant, about the Savannah River Site?
- WM: When they announced that they were going to break ground. That was in November of 1950.
- TG: Okay.
- WM: And I got there in September 1953.
- TG: Okay. So did you know anything about the Plant before you arrived?
- WM: I knew a great deal because I knew how the reactors were handled, that they were making Plutonium and how they were making Tritium. I was certified to work at stock pile sites and to know that the nuclear components that are there. This is what happens to a, and I had to be certified and so, I had all that background information.

TG: And because you were "Q" cleared already you were able to get the information? Okay. A lot of people, you know, didn't know what was going on. And so, some of the questions ....

WM: By the way, on that site there were people working in separations that had no idea at all what was going on in the reactor buildings.

TG: Right.

WM: They isolated them.

TG: Right.

WM: And I grew up in separations and by the time you get up to a General Superintendent level, you've got to know what everything is and then you get to Assistant Plant Manager and Plant Manager, you're there.

TG: Right.

WM: But the name of the game in the town, they'd say, "What's going on out there?" And people would say we were making bubble gum.

TG: Bubble gum?

WM: The first time I heard that, I said, "That's it."

TG: That's funny. So, I was gonna ask, you kind of said, you kind of told me what you thought about the South when you first arrived here, but what did you think when you first, your first impression about the Plant itself?

WM: You know what job I've got now? I'm President of that Heritage Foundation.

TG: Correct.

WM: I went to a meeting and all of a sudden I come out of there as the guy.

Greatest undertaking in the history of mankind, including the Great Wall of China. When that thing was built. And I was there to see it, when the construction workers were up to 38,000; something like that. And they were sharing beds in town because they didn't have enough places for them to sleep.

TG: Right.

WM: I shouldn't say sharing. They weren't in the same bed together, but it was a bed that they said, "Well, okay, you can have it for 8 hours, I'm going to work."

TG: Right. So taking shifts.

WM: There was a real spirit. The other thing was, this was a hurry up deal. The Russians were ahead of us and when the Government came to DuPont, by the way DuPont had been in the very new Manhattan Project in the State of Washington. They got out of there when the war was on. But they [Government] came to DuPont again and said, "We need you. The Russians are ahead of us, and we've got to do something." So here comes this Plant. Let's see, for I think it was about three years that we had all the stainless steel in the Country. Nobody else got it; we got it. And we got all these things, all the priorities and it was really an exciting thing to be. They had the right people down there and the work ethic that comes from the southerner. They're great. We literally took these people out of the fields and brought them in there and taught them what we were doing. But there was a tremendous influx of people with a lot of experience. Some of the people had been at Hanford, Washington and it really. The thing was just alive and well. It

was unbelievable; and their safety record was outstanding. They were very good about that. So be it we brought two party politics in there. I ran the Barry Goldwater campaign. I started to say that earlier. Aiken County was probably 70%, what we call conservatives. Boy, was that the beginning. And it took another three or four years then Strom Thurmond changed parties. I was at the place that it took place up in Columbia. A large crowd, but it was great to hear Thurmond say it. This is where it hit.

TG: I know that the Lab was not completed until 1954, the 773A building.

WM: I figured you knew about that.

TG: So when you got there, where did you work?

WM: I went down to TNX.

TG: TNX. Okay.

WM: And that was the old deal again, what's TNX? It was the separations end of the business; looking at mixers, settlers and all other thermonuclear evaporator. Then there was CMX, and that was Chemical and metallurgical experimental and the water system behind the reactor. When we were down there we were all stunned by one and other, because a lot of things were done there. And people kept thinking TNX. They said, "What does it stand for?" And they said, "Well, they called it TNX when it went to Hanford, the TNX project. Training and Experimental, TNX. That's what it meant."

TG: What is it? What did you say it was, thermonuclear experimental?

WM: TNX. The TNN, for example if you are making TNT and it was an explosive and we didn't want anyone else to know what it is, we didn't want anybody to know what it is. We called it TNX.

TG: Okay.

WM: And I think that's how it came about. We never confirmed it and I talked to some of the people who were out there in Washington and they said, "We called it TNX right from the beginning." I said, "Training and Experimental, or TNX TNT?" I got about half and half. But they didn't care.

TG: So did you have a hand in designing the Lab at all? Or what kind of space you would be working in?

WM: About 15 of us engineers in one small room, and we were doing all sorts of test work and all sorts of things we were doing. We started doing some things when I got transferred up to the Lab. But an interesting thing about that Lab, I guess Merv Sand was kind of the ....

TG: What was that name again?

WM: Merv Sand.

TG: Merv Sand?

WM: Merv Sand.

TG: Okay.

WM: He would essentially, take the person who was coming into the Laboratory or was going to be working at the Laboratory, I think, probably the first contact would be in the trailer. But, he said, "I'm going to tell you how to find TNX." And that's where they went cold, Merv Sand said that. But you'd get in your car and you'd drive down to the 773A Building, which was a kind of Trailer kind of thing because they were still building and you'd go to TNX. I found it and I said, "This is good, I passed the test." A lot of people didn't find it.

TG: Right.

- WM: But a lot of very good people are down there and you know it was all in the separations end. I moved up to 773A probably a year later.
- TG: Was it a state-of-the-art, fabulous lab?
- WM: No, TNX was a lot of boiler plates.
- TG: No. The Lab when you made it to ....
- WM: No. The Lab was... the beautiful thing about the Lab was you didn't have to be a separations guy. You knew what was going on with the reactor people. A lot of things were going on. They had all the resources there to bring to the Plant. So, that became a happy place and I felt awfully good. We developed some ion exchange systems that we actually put into the canyons; which had never been done before. How you precipitate Plutonium, how to go about it. We developed that stuff. You knew that you were doing something well. They ran it like a research job, but they said, "Don't mess around with the people too much in detail. Just let them, if we see something broken out there, it's gonna be fixed." You know, how can we fix it? So, try it for 6 months and see if you like it. But they came to me after 16 years and said, "Time to go to the Plant."
- TG: Right. When you were still in the Lab and you were working on these research projects, was that knowledge shared or was it, did it just stay on the, did the knowledge stay at SRP or did you share it with DuPont or other Atomic Energy installations?
- WM: I can't tell you precisely when it happened, but when I got into the Tritium manufacturing deal, I opened up all these things that I had with Los Alamos, I'd had in the military, and it was often going there to be sure it was gonna be this other than that. There was a reservoir that was, being stainless steel, say about like that, and loaded with Tritium-Deuterium to go into hydrogen bombs, and we got lucky at those things. I said, you know this is silly. Once they come back to be reworked we had to dump what was in there because Helium was growing into it and we had to get it away. He says, "There's a tremendous amount of money to be made. We don't have to put new reservoirs back in. All you need to do is cut them to open them up and then seal it and load it again and send it back." And we made millions of dollars off of that. Put people out of the reservoir business. But we had to convince Los Alamos, now was out there. We had metallurgical. And that was Chemical Engineers aren't too far away from metallurging. We had some very capable guys that knew that this thing couldn't fail on the stockpile, and you're telling me you're going to cut this thing in the front and you're going to rebuild it out there. It was just a piece of tubing. And I had to prove to them that they really could. So we would take the weld fronts and just beat it with a hammer, just bend them over; if nothing happens, it's a very good sign. It was that kind of thing. That was a product of the Lab. When I came on, they were running the Plutonium 238 for Space Power. It's good for so many watts per gram and they needed Plutonium 238 as opposed to Plutonium 239, which is fission. We developed that whole thing. Plutonium 237 had to be irradiated to make Plutonium 238. In the case of Plutonium 238, now you've got stuff that's got a 90-year half-life or something like that and normal Plutonium has a 24,000 year half-life. But here we made the first stuff that came out and went to space. That was a product of the Lab.
- TG: Oh. Okay.
- WM: So, it was an exciting thing to do. When I got over to the Plant, I started out in Tritium work, but then I moved up into Separations in general. This is when I was able to hire people; influence on who goes

where. You know, we need somebody over here and they'd go through the hiring process and all of a sudden you'd be saying, "I got everything we need." It was a tough location to say goodbye to.

TG: Right.

WM: I mean it was so much fun.

TG: So you really didn't feel a lot of pressure at the Lab to produce things? You were just kind of left alone to research?

WM: As a matter of fact, we had a reputation that the people in the Plant would call us and say, "This damn thing doesn't work, and what are we doing wrong?" They'd say, "You mean, really, you can do that?" because they were working down in the canyon and we'd run all the remote stuff with the hands on kind of thing at TNX, and then put them into the Plant.

TG: Did you interact with, while you were at, during your time in the Lab, did you interact with management there, with upper management, Plant Managers very much?

WM: Yeah. They knew I had been teaching Atomic Structure, Radioactivity, Energy Fission and Fusion. Somebody got a hold of that and said, "Hey why can't you run these people through that, because you can tie up the weapons and you know what you're doing and people will feel more like it." So they did that early in my career, about six months and we had a hundred people at a crack. You can just see that you're telling them things that they didn't even know about. So, that helped and that's what really kept me at the Lab. I had a smart enough boss who said, "You've got a lot of information. These people need that. Most of them have clearances, so you can go that far."

TG: Right.

WM: So it was productive right from the beginning.

TG: Okay.

WM: If I hadn't left the Lab, I probably would never have been Plant Manager. They took me over and put me in a technology assignment. The next thing I know, I'm running the Tritium facilities and all that stuff. One of the things they do in DuPont is if they see somebody who looks like he's pretty good and he's got a handle on things, we were working on mixer settlers, and I was doing some work on it. One week they said, "They want you to talk in Wilmington, Delaware." The real power was in Wilmington and they wanted to be sure they knew what was going on in the Savannah River Site. So I went up there to make a presentation. Now, fortunately I had been teaching school and I talked to Colonels and all this kind of stuff. But here I put together a talk; got a little bit of help from my boss and he says, "You got about 20 minutes." And he says, "They'll be kind to you." And so here I ride the train all the way up from Augusta saying, "Uh huh, now what?" And that exposure was something that you first would say, "What, why am I doing this?" Well then somebody told them what I'd been working on and they wanted to see what it was and talk about it. So I can go up there and do that. I did that probably two or three times because they said, "Let's get Mottel back up here." So the Lab gave me the opportunity to have a lot of exposure to management, and it's probably why I got there.

TG: Do you think that DuPont was grooming you for the Plant Management position?

WM: Or for something, there were a lot of big jobs in a Plant like that. We started up the first reactor; we had 8300 people, and we had 1000 over at the Lab. On the construction force, they had a couple thousand building things and modifying things.

- TG: Back to the Lab. So, you were working with chemicals and metals and things in the Lab. Was there a risk to you of exposure, radiological or chemical exposure? And did that ever happen to you?
- WM: It's interesting when I was teaching school in Albuquerque, we had components there, we'd see it and play with it, whatever. The big bomb itself, you know, you've got 30 people out there that you're talking to and they're going "There it is!" You open it up and try to tell them how it works and you really... I don't know why I got dwelling on that one. When you get to the Lab, relative to something that's going to be happening at the Plant, Plutonium technology comes into the thing, and exposure to Plutonium is dangerous. Criticality wasn't a problem; we weren't worried about blowing up like we were worried about contamination. So we paid an awful lot of attention to what we were doing. Proper safety shoes covered with canvas, if you will, and we had essentially zero nuclear problems. DuPont's approach to safety was kind of DuPont's approach to what they did in research facilities. They knew they were working with something dangerous. It was well protected.
- TG: They took precautions.
- WM: We probably wrote some things in the book that we've never even looked at before, but we had to do this, we had to do that. Let's see, have you ever talked to Mac McClerron?
- TG: Yes. No, I haven't. I talked to Mal McKibben.
- WM: Oh. You know Mal McKibben. I knew Mal very well too. Mac McClerron was in early as I recall. Reinig? Have you talked to Reinig?
- TG: I'm actually talking to him through email right now, but ...
- WM: Reinig was the head honcho on handling the radioactive materials. We did everything really right; the track record for the time. What a wonderful opportunities to make a mistake. We had no record of anybody being exposed or hurt by radiation in that Plant. And that's on record.
- TG: Right.
- WM: Others, had all sorts of problems. The Government that we were working with at that time was smart enough and DuPont made it clear. "We are going to run this thing for you because you said it's for God and country. We need it and we understand that. We're gonna run this Plant like we run anything else in DuPont. You're going to have to pay our people. You'll have to get good people in here. Don't you worry about why we're paying them so much. That's none of your business. You want us to run this plant. We didn't let anyone from the Government even go into the facility unless they were going through to show somebody something that they couldn't monitor. Today, they're out there running the damn Plant. It's pathetic.
- TG: Right.
- WM: When I left the Plant we got up to Wilmington, Delaware. Some funny things started happening. I mean, people were calling me, and Donner said, "Can't you straighten these people out?" You know. "They're breaking our back. They don't know what they're doing." We had one guy that came in there and he got to the point where he didn't like driving to work 'cause he thought there was [too much] speeding. So what he did is, he started taking down car numbers. And then he goes over to the Human Resource group and says, "We got to get these people, because they're breaking the rules." My phone rang off the hook. Some of these guy, just think about it, what they were doing. They're policing the people on the road coming to

work or going home. What's going on? So it's one of the things that I, after five years away from the Plant, there's a whole different outlook from what went on. I'll never forget that one about the guy getting me in the corner on the phone and saying, "Help." I can't do much about saying it, but some people got in there and they decided, "This isn't really our Plant, and anything the Government wants to do with it, let them do it. It's their plant." When we went through that transition, it finally got to the point that, where things should be done, weren't even done. Like, getting the waste out of the tanks. We knew how to do it; we knew the technology. And then these Government guys would come in and they'd say, "Well, what do you need a hundred million dollars for? We can build aircraft carriers for that. Just build more waste tanks." It's hard, we knew we had to start working on the waste. That's potentially the principal reason of why DuPont got out of there. "You don't need us. I mean, you think you can run this thing better? Goodbye." I was in on a couple of those conversations and it was, the local Government guys said, "Don't leave. We can't handle it." But there were a bunch of new people up in, used to be, what do they call it? There was a group of people from the Senate and a group of people from the House of Representatives. They were put together and they knew what was going on. They knew where the money was being spent, and everything else. (not understandable)

TG: Right.

WM: I'm just trying to think of the names, The Joint Committee on Atomic Energy.

TG: Okay.

WM: That's exactly what it was; The Joint Committee on Atomic Energy. We had a Tritium release when I was the Separations Department Head. I got called up to go to the Joint Chiefs and explain what had happened. Before I did that, I was supposed to go to the Atomic Energy Commission Head, who was a female. She had a couple of dogs. She was great. I went through and explained everything, what had happened. She says, "Everything worked the way it was supposed to do. Why are they making such a big deal out of it?" I said, "Well, I'm here to tell you that it's not a big deal." The Los Angeles paper had Atomic Cloud in the paper telling everybody that who knows, it can kill people in Los Angeles. It was just terrible; anti-nuclear. Fortunately, but any way that Joint Committee just, once the AEC person said, "Look everything worked. No problem. Nobody hurt. Bingo. Send them back."

TG: When you first arrived at the Plant, how did you feel about DuPont's attitude toward safety? Were you used to the priority of safety like that being in the military or was it a shock to you?

WM: No. The point was, you know, that safety is first. Then they started talking about that - safety is first, customer is second, and all this kind of stuff. We wrote... did you take a look at my book?

TG: I have not.

WM: Industrial Safety is Good Business: The DuPont Story.

TG: Right. I need to get that actually.

WM: Yeah. There's an awful lot in there.

TG: Okay.

WM: I began giving speeches when I took over the safety business for DuPont. You come up through the ranks and everything else, and you find out that they really mean it. You'll get the safety that you want. And DuPont's records are just unbelievable. The book tells about that. So, the military I don't think really ever

faced up to all the delicate natures of the thing. To give you an example, they might hire, somebody who might hire a subcontractor to do the work, if they were suspicious that somebody might get hurt. And that's not the way to do it. Look at the book, you'll find an awful lot of stuff in there on safety. In fact, I wrote one of the, I don't know whether he was going to have it printed it or not. Walt Joseph wanted to put a newsletter out. And he says, "Why don't you write something for me. We'll put it in the next one." What I did is I essentially set the stage for what the whole [safety] philosophy was and what everything was, and what the record was and that kind of thing. And now, let me tell you how we did it.

TG: Okay.

WM: You know, tune in. That's available someplace.

TG: I just didn't know about your personal opinion. Like, if you felt inconvenienced at first, that all, by all these safety measures or if you just were right on board.

WM: I was right on board.

TG: Okay.

WM: When you tend to the stock pile site and you see the nuclear components and everything else and you've got people handling the stuff, you say you can't do what you're just, you can't take any shortcuts. And DuPont's been this way since early 1800's.

TG: Right. What about security? Did that impact your home life at all? Did your wife, kids have any idea of what you did for a living?

WM: Carol went through the stuff in the military with me and I would come home for lunch and would have a test in the afternoon. We'd been taught everything, so here I am putting the stuff down on paper trying to be sure I got everything they want. And then I'd go over to the sink and I'd burn the paper. So, that's how I felt about it. We weren't allowed to take anything out that would expose anything in our Nuclear Program. But yet, when they were teaching people, they had notebooks, which got locked up every night. It was a very secure place. It truly was. Those doors can't be opened at night. We're not going to let somebody get that far. They can't get to that safe to begin with. So when we got this stuff, we can't let it get loose. And they kept us informed about what was going on in the World. And I'm trying to name all those players because a guy and his wife were electrocuted.

TG: The Rosenbergs?

WM: You got it. The Rosenbergs. They literally talked about all that and what was going on and every once in a while, they'd come in and put you in a, what do you call it, where they measure your pulse and ....

TG: The polygraph?

WM: Yeah. Polygraph. I think I probably went through two or three of those.

TG: While you were in the military or while you were at the Plant?

WM: Military

TG: The military.

WM: Never at the Plant.

TG: Okay.

WM: But the military, in Albuquerque, some things got violent. And they were being very, very careful. So when I get to the Plant, it's more like what combination are you going to put on that that special guys themselves can set the safe? And you don't let people walk around in a facility without somebody being with them.

- TG: Right.
- WM: We used to joke with the guys. "You're not going in the ladies' room are you?" (laughs) Guess not.
- TG: What did your kids, did your kids ask at all, "Daddy what do you do for a living?" Did they even know that you were a Chemical Engineer? Or did they just ....
- WM: They knew was that I was a Chemical Engineer. They knew I'd been in the military and the nuclear business. What was going on at the Savannah River Plant was that we were making materials for our Country.
- TG: Okay.
- WM: We are not making any bombs. That finally came out. But we were all good friends before that thing even came out. They didn't mind not knowing, because a lot of the community, like North Augusta, most of the people worked at the Plant and you couldn't get anything out of them. And plus the fact, we kept them in pockets. We didn't let them, not many people had the full focus.
- TG: Right. I'm going to turn this tape over, it's getting towards the end.

### END OF SIDE A

- TG: All right. Side 2. Actually, I wanted to ask you now about some of your choices. Why did you pick North Augusta over Aiken?
- WM: We knew some people through the nuclear business. "Where are you living?" And they said they were living over in Crossland Park; Crossland Park, that was the place. So we just figured ,okay, we were going to Crossland Park. So we go over to Crossland Park and there's no room.
- TG: That's in Aiken, right?
- WM: Yeah. It's in Aiken.
- TG: Okay.
- WM: We went right to Aiken. They didn't say anything about North Augusta. We just went to Aiken because people said, "This is the place you really want to live." Well we couldn't find any rental property. Couldn't find anything to buy. Nobody had any money to buy anything, so we were looking for a place to rent. So we went over to North Augusta and there was a new development called Summerfield, and they were just opening up. And then we found one, the four of us, Carol and I and two kids and looking back, I think the rent was something like 50 bucks a month. But that was big money. But anyway it was slapped together and everything was fine. We went from there to a larger one, it was a rental unit and it had air conditioning. Then we had number 3 child, or maybe number 4, so we used the GI Bill and we built a house. Then we got number 6 and number 7 and we went to a larger house. We built a larger house, and the larger house was the one we sold when we left to go to Wilmington, Delaware.
- TG: Okay. So was it Hammond Hills?
- WM: Yeah. Actually when I said Summerfield to you, that was the real temporary kind of stuff. But the homes were new. But they had floor heaters, that kind of stuff. Not the greatest place in the world, but clean and neat.
- TG: Right. Okay.

- WM: Had to go through some surgery problems with my wife at that time. I said, "Eee-gads, how are we going put up with this." After we found out, we finally got her a doctor. She had regional enteritis. And that was before Eisenhower had it.
- TG: Uh huh. Nobody knew what it was.
- WM: Yeah. We got to where we had a real trust in the community. The crowd in Aiken, they just had a philosophy of kind of like, "well, those people in North Augusta, they live on the shore and they're almost on the river people. I don't even know why they're in the County of Aiken." We used to kind of joke about this. I'm trying to think what job I had in the community. But I got up, oh I know what I did. I was in the Rotary Club. I joined the Rotary Club and they asked me to take over a series of speakers for the Rotary who could tell the North Augusta story. So we could really get that out. So I got one of the Priests and an Engineer and business people and the next thing you know, the message is getting out that, it's only on the football field that Aiken and North Augusta had anything to worry about.
- TG: I didn't know if like, maybe the Scientific Engineer people were really like, oh, Aiken and then maybe Operations People were North Augusta. Did you ever see any split like that?
- WM: The real Physicists, the real Doctorates and Nuclear Physics people for quite a while, they had themselves on a level. We worked with the bridge group that was in Aiken. I don't think they ever came to North Augusta to play. They always stayed in Aiken because Aiken was the right place to be.
- TG: Gotcha.
- WM: But we got to know a lot of people well.
- TG: When you first go there, did you notice any shortages, I mean, there was a housing shortage obviously, but like food or could you get products that you were used to having? Or did you have to go without some things that you wanted?
- WM: You know, there's two parts to that one. I mentioned to you the religious thing.
- TG: Yes.
- WM: That topic could be just plain funny. You know, the Baptists I don't think have ever put a ....
- TG: Was there even a Catholic Church?
- WM: You know they were working in a very small building. In fact, I can remember going down there on Friday nights for a Men's Club meeting, maybe about 15 men talking to the Priest. And they said, "Why don't you go out and see if there's anybody out there" at the Church Building. So a guy went out and came back and he says, "A bunch of guys out there with white sheets on and pointed hats and I think they're starting a fire." (laughs) Once we got into the kitchen of the peewee football system, that whole church thing collapsed. There weren't any more battles. The Baptists are a little different. The Methodists are better yet. But there's a strong Catholic group, in fact, they built a school, built a nice Church. Carol taught there.
- TG: But you built that up. That didn't exist when you got there, the Catholic community really.
- WM: No. We were essentially alone. But when I look back at it now, I say it wasn't so bad because maybe more people were coming in and we were associating with them. But it wasn't anything we were worried about the Ku Klux Klan coming after you or something like that. We didn't feel we were in trouble. Some of the funny things that happened, we'd go into a store. We were looking for a new washer, a washer/dryer

combination, with two kids. So we go out and the guy says, "Oh yeah, we got one of those." You know, a big one, and we said, "We would like it to be delivered tomorrow?" "Oh, yeah," he says, "We'll get around sometime." We said okay, well you know, we'll wait another few days. Here I am, driving him nuts and I said, "Get that thing on over here. That's important to us." He said, "Well, don't get so upset about it." Here's that Yankee guy, he's trying to (?), so I finally said, "Well, we're not going to do business with you." He said, "Well, that's your choice." So we went over to Sears in Augusta and they finally come through with things and we said, "We'll take it today."

TG: Right.

WM: It was that kind of thing. So it was some of them, they had stuff. The food and clothing, one of the things that we observed was they hired blacks and females and like we had, I can't even think of some of the names of the girls. But some people were paying \$15 a week to help.

TG: At the house?

WM: With families.

TG: Right.

WM: Yes. And we probably were staying in that category, 15-20, but not for the whole week. We would, these kids started coming during the week. They were ironing clothes while they were there and they were happy people and they were good people. You'd get very attached to them. We handled that very well. The kids didn't have any problems and it was the right thing to do.

TG: Actually, I have a question about how the segregation kind of, what was your view? I don't know how it was like in Michigan in the 1950's, but I know ....

WM: Well, as I told you when I went down to the peewee football meeting, they said, "We can't let you in. If we do that, we have to let the blacks in."

TG: God forbid the Jewish people wanted to have a peewee league, you know. (sarcastically)

WM: (laughs) That's right. It was kind of an atmosphere that we didn't notice how getting into the school system and what's going on and everything. This is a pretty nice town, and if you get into the politics of the thing, now you know where the powers are. We got in that early. I don't think, I never heard anybody talking about damn Catholics or anything like that. We never did.

TG: Right.

WM: Joke one guy told me, "My wife just stopped by to pick up a bottle of booze" and a friend of ours said, "Charley, you can't sell her any booze." He says, "She's part Indian." (laughs) Carol's about 10%.

TG: American Indian?

WM: Yeah.

TG: Native American?

WM: Native American, whatever they call them.

TG: Was that a law or something?

WM: That's an old deal again. It comes from way out West. Don't give those Indians any alcohol.

TG: Yeah. I understand, but I didn't know if it was actually on the books or if it was a joke.

WM: The guy did it as a joke.

TG: Okay. Did you carpool?

WM: You betcha.

TG: Yeah.

WM: That's a story in itself.

TG: Tell me.

WM: 20, lets see, probably 22 miles one way; and your running in a carpool that has maybe five people. Its just a question of who drives, and on what day; and trying to work out a whole system. Literally, when you ride, you work with a guy that far and then you come back and you may have had a bad problem at work or something like that or anything else, somebody doing something and there used to be some guys would stop for beer and salted peanuts and you've got the guy who's been eating salted peanuts and he spills them in the car and you know. "Damn it, Charley, you should have never done that. It's oil. It's gonna be there and I'll never get it cleaned up." So you find all kinds of tirade kind of stuff. Well, you could have picked up a guy in the morning and he's a newly married guy and he's just coming down the stairs from the second floor and he says, "What a wonderful day!" You know he's saying all this and the carpool he's in, they'll have to open the door for him and say, "Shut up!" You know, we don't need your, all that stuff. But, never partying too much together but you develop a clan from that. I always look back and say, "Boy there were some times we should have been writing things down." But when you get somebody who's sick in there and you really know they're sick, it's like family. I carpooled for almost all of those 26 years.

TG: I was going to ask if you carpooled up until the end.

WM: Every once in a while, I would have to go someplace, like to a dinner and I couldn't go home and all I'd do is take a car. Not my car.

TG: They had a shuttle service out there right?

WM: They had shuttle service to get people off the Plant if they had to for good reason. Storm, something like that. But generally speaking, when they used a shuttle service, I think they only did that for people on overtime. Where they would say we're gonna ask you to come out and work. I probably worked, let's see, no it wasn't that, it was Good Friday. I worked on Good Friday, I remember the driver I had took me home and he says, "Man alive, 12 hours work for an interval where you got a week's pay." And I said, "Yup." That's what they did. They paid overtime. That's when I was young, it was great. They wanted me to do something and I said fine. How high do you want me to jump? I'll do what you want.

TG: Was overtime double time or time and a half?

WM: It just turned out that night, when I went I was supposed to count the arithmetic. Like I said, it was Good Friday, on Sunday it was Easter and it was two and a half times.

TG: Oh, great! Yeah. That's nice.

WM: Then after, that's when the driver said to me, "One day's work for a whole week's pay."

TG: Yeah. You've got kids! Did you, actually, well back to carpool for a second. Did you carpool with the same people for years and years or did it change often?

WM: You get into a group that is really reliable and dependable and they have to be transferred to something else on a different shift or something to do. Yeah. They're clannish. Except, you're always saying you got one driver who'll drive you totally nuts because he's looking like this and all over and is going all over the road, you know.

- TG: Right.
- WM: And you say, "we've got to run this guy off." And finally somebody said, "Well no, somebody sit close to him in the front seat, that's all."
- TG: Yeah?
- WM: Or, "Gee, that's a good looking girl."
- TG: When you first started out there, were they on six-day weeks? Six-day work weeks, I've read that it was a 54 hour work week.
- WM: They agreed to 12 and a half hours a day for six days.
- TG: 12 and a half hours a day for six days.
- WM: I think that's right. The union bought it.
- TG: Is that what you worked? Was the Lab the same? Did you work that kind of hours?
- WM: No. The only thing we were doing if we were building something, like something down at TNX that had to be finished, we'd go to overtime.
- TG: But was it normally a 40 hour week? Okay.
- WM: During the construction of the Plant, when they build the Plant, at 38,000 construction workers, I think it was 12 and a half day and a six day week. That's what I remember. Maybe it's not accurate, but whatever it is. The union made them put a compromise in and what they did is that they helped make that Plant available in a hurry.
- TG: Right. And attractive to construction workers to come work if they ....
- WM: It's in this book. I think you'll probably find something about that.
- TG: Yeah. We have that book.
- WM: I want to show you something.
- TG: Okay.
- WM: Mal McKibben's got this.
- TG: That right there?
- WM: Right there. And it's a talk that I put together a 25th Anniversary Dinner.
- TG: Okay.
- WM: When we brought all the top brass from DuPont who had been involved in the thing when they took over the chemical company. I don't know if I got it or not. I probably do someplace.
- TG: Shall we write it down? Get copy of 25th Anniversary Dinner.
- WM: Anniversary Dinner. Mal McKibben's got one.
- TG: Okay.
- WM: And we kinda put a lot in it. In fact, I just pulled this thing out the other day when I was talking to Mal McKibben about something.
- TG: Let me turn this off for a second.
- TG: I want to talk now, can we talk now about your tenure as Plant Manager. I'm kinda turned to that. Actually, before we do that, I wanted to just ask real quick, I'm kind of doing a little bit of writing on the ORA, the Operations Recreation Association. I just wanted to know if you participated in any of the ....
- WM: Used to, do you play bridge?

- TG: No. My grandmother does.
- WM: They maintained a source of, if you're playing bridge then you're playing it competitive. You play with boards. They'd put the cards in there so that you can evaluate somebody else who play's that same thing. I many, many, many times went over and picked up the board from where the board were because we were going to have a bridge party.
- TG: Okay. I know they did dances and had picnics and did ball games.
- WM: When I first got there, the Masters Golf Tournament was there, but they weren't getting very large crowds.
- TG: Really!
- WM: So, I got into a situation and I probably didn't make the final decision, it couldn't have been someone before me, but the deal was, let's see the tickets were something like \$3 a piece to go to the Masters. We worked out a deal that we can get them for \$2. We got some for \$1.
- TG: Wow!
- WM: \$1. They could go over and just have some extras, I think it was a dollar for each one. But it was in the \$1, \$2, \$3 business and that really did a lot for the Plant. To have all these people going out there to watch them golf. It was about the time that TV really came in. But the Masters had never been very many people.
- TG: Really?
- WM: Yeah.
- TG: It's a little different now. Okay, let's see, so on to Plant Manager. Just in general, how did it feel to start out as a Chemical Engineer and move all the way up to Plant Manager? Did you have any idea? Did you have aspirations of upper level management?
- WM: When I got up to the level of Separations Department Superintendent, which is a big responsibility, I always used to say to people like my wife, "All I want to do is be Plant Manager for a day." There are some things that we have to clean up.
- TG: Yeah?
- WM: That was always there. We never went to the private parking spaces or anything like that at the plant. If you can get in there and get out, that's fine. We got some cars around to the back if somebody needs to do something to get some place. If you're here with the carpool, it was. What was I searching for? Ask me again.
- TG: Well ....
- WM: As you move along through other jobs, I think when I got to be the Separations Department Superintendent, and people were listening and paying attention to me. The Assistant Plant Manager was coming down and talking to me, and all that kind of stuff, and I said, "Well, one of these days, maybe." But they, frankly, kind of surprised me when they did [promote me to manager]. Julian Ellett ran the Plant for 15 years; the longest Plant Manager ever. Julian came down from Wilmington and he was Frank Crusi's boss. I was reporting to Frank. Julian caught me out in the 200F area and he says, "I need to talk to you." I said, "Gee, that's good." He said .... Who did I just tell you was heading up the Plant?
- TG: Ellett?

- WM: No, not Elliot. Frank Crusi. And he sat down with Julian and he said, "I've got some things I want to talk to you about." He said, "Frank Crusi should really be talking to you, but," and I'm sitting there and I said, "Okay, what is it?" He said, "We want you to take over the Plant."
- TG: Were you Assistant Plant Manager at that point?
- WM: No, Jim Lauer's gonna get out. I was actually Assistant Plant Manager when Lauer left, but I was reporting to Ken French. And when French retired, in fact, Ken was pretty clever. He just did it like impulse. All the time, bonus systems, things like that you know that somebody thinks you can probably do it.
- TG: Right.
- WM: When we got around to who was going to replace me when I left, that was a bunch of rolls coming down. In fact when I left, a lot of people said, "Why did you leave?" Because a lot of things went to pot. Grannigan had a tough time. And he was just a different make up. If you've been with that Plant all that period of time, you know what's going on, you know who it is, you know who to trust, you know everything. Grannigan got in there and just started playing Wilmington, Delaware. He was, just this thing about license plates on cars and that kind of stuff and they just went into a whole different regime.
- TG: Right. Did you manage your management style on any former managers or did you model yourself after someone?
- WM: Yeah. I guess so. Jay Monier had a Doctorate in something. But he was kind of an up close kind of person. That's the only one that I would look back. Julian Elliot was just a tremendous guy. And you can find out when you get people like that, the blacks loved him. I had that kind of a situation. It was great. The style is to keep people informed. Don't keep them in the dark. And if they ask what's gonna happen? Say I don't know, but I'll get back to you as soon as I can.
- TG: Right.
- WM: Don't, well it's in my book, but I put out some stuff to pass out about how to be a good supervisor and how to be a good manager. I've used that quite a bit and it's things that you stick in a folder and say, "I like that, I've got to write a book." I said, here's my opportunity to pull that stuff out.
- TG: Right.
- WM: So, if you get a chance, look at the book. You'll find in the appendix what makes a good supervisor and that kind of stuff.
- TG: Okay.
- WM: I think I could grab it and do it with you if you wanted, but that's okay.
- TG: We might even have the book. I'm sure we do, because Mary Beth's got a huge library. We can get it later, I mean I can get it when I get back there, unless you want to get it. Okay.
- WM: It's interesting. I bet I've asked people a question like this. "What's are a good supervisor's traits?" And he says, "Well, I'll tell you what yours are." And that's what's precisely in here. "Persuasiveness is one which is decisive that can lead and understands others and speaks and writes well, intelligence; one that is technically competent, has a quick mind, energy, one who is competent and ambitious and shows an instant ability, but what it is, is don't delegate under appraisal, discipline or emotion." When you get, you see so many things that are very obvious. I served as President of the Property Owners Association. We got employees, probably 20 or 30 and the General Manager says, "We're having trouble with the crews and

we're having trouble with the supervisor." And so I said, "You really are? I'll tell you what, look at this." [Mottel's book] He said, "Would you come to the Board meeting and let the people hear this?" And it was unbelievable. They never gave a thought of it; what to look for in an employee. People who are stable, persuasive and intelligent. People who want to work well with people and can cope with change.

TG: Right.

WM: That's big, coping with changes, about the biggest thing; some people can't do it. My secretary, when I retired, I said, "You're going to have to change your ways. This whole thing is different than when you were hired in."

TG: Right.

WM: "You can't just say, we'll that's not my responsibility."

TG: Right.

WM: But anyway, try that.

TG: How did you see that Atomic Energy Commission, was it called the Atomic Energy Commission while you were there?

WM: It was AEC.

TG: AEC?

WM: Then we had ERDA, Energy Research and Development, trying to figure out what the "A" would be.

TG: Association?

WM: I'll never forget the guy who came down from ERDA that toured the Plant and everything else when he came through. A connection that you use in these canyons, two pieces of pipe together remotely, and be sure it's safe. He said, "That's exactly what we do in space with these space connectors.

TG: Oh. Neat!

WM: And I said, "Never thought of it. It didn't come from that." That was the ERDA guy. It was a wonderful experience working with the AEC when we had Nat Stetson in that crowd and the one before him. They'd looked at DuPont as being very capable and everything else. If there was a question about, we for a while had to keep two sets of books, because the Government had their way of doing their things because they said, "Well, if you don't spent the money, you're not going to get some more next year."

TG: Right.

WM: And like if they come in and say, "Well, we've got 20 million dollars, where can you spend it?" and you'd say, "You have something that you want us to do? We'll go ahead and try and find something." That Government stuff, the people early on were not that kind. But the groups that followed them just took over running the Plant.

TG: Right.

WM: And it was a bad mistake.

TG: So you felt like in the beginning the AEC and DuPont ....

WM: Fantastic relationship.

TG: My next question is about your relationship with Nat Stetson because I know he was head of SRP Operations for the Federals while you were there.

- WM: Nat was a great guy; easy to talk to, knew what we were doing. I remember going over it one day, and I said, "Nat, you've remodeled all these offices..."
- TG: Hey kitty.
- WM: That's Arthur. He's half Himalayan and half Siamese.
- TG: Pretty.
- WM: And he jumps. He really gets going. He's something else. He had a blood problem when we got him and it's kept him in the house and he gets along fine except that he wants to go outside.
- TG: Right.
- WM: He's been back there sleeping, I can tell, his eyes are just opening.
- TG: So Nat, you were talking about ....
- WM: Nat was fine. He had some very good guys around him and they knew that working with us, they'd come to us and say that we needed to do this and do that and we need this stuff by such and such a time and he knew how to work with the guys. Some others just said, "well, this is what you're gonna do."
- TG: How often did you meet with him? Did you talk with him on a daily basis? Or weekly?
- WM: No. Nat spent more time in the castle. He'd go around with his own people, but he didn't come around and, I knew Nat well enough to talk to him. They would occasionally ask us to come over and listen to something.
- TG: What's the castle? I never heard of that.
- WM: That's the king that very seldom leaves the castle.
- TG: But what's the castle?
- WM: The castle is his enterprise.
- TG: Okay. Not a particular building on the Site or anything.
- WM: No.
- TG: Okay.
- WM: That's interesting. It's changed dramatically now. I'm just trying to sit here and think of the guy just before Nat Stetson. He was a Christian.
- TG: I can tell you what it was.
- WM: Yeah, and I should know the name.
- TG: Robert Blair?
- WM: Yep. Yep. He was a first class guy. Everybody trusted him and everything. Nat's a little bit more "I'm the boss," but he'll smile when he does it.
- TG: Well, just talk about, well actually how did you see the Plant's mission while you were Plant manager and how was that different from the initial mission?
- WM: I'm trying to think. Say it again.
- TG: You're, the mission in the beginning in 1950 when it was open, you know it was there to do a particular thing for the weapons program. Did you see the mission as different while you were Plant Manager?
- WM: Yeah. I'm trying to be careful. When everybody was going in the same direction, even they didn't know it, very few people knew what all the directions were. If somebody says this is what we need this, we're gonna do it.

TG: Right.

WM: And it worked, fine. People would work overtime and they just loved it. As time went on and the growth of the Government working with DuPont, no kidding, we really ran that plant like any DuPont organization.

TG: Right.

WM: And people knew it. When I was, I had an area Superintendent when I headed up the Separations Department. He called me. I think he's still alive in Aiken. I just threw a couple of Government guys out of my operation. I don't know, they came out here and said they were going to do something. He says, "No, you're not." I said, "You did just right." And I said, "I don't have no problem at all. Don't play patsy to them. You do what you think is correct and that's the end of it."

TG: Right.

WM: We did not open, it had to be a special occasion to get those people to come in or it was no.

TG: Okay. What was their role at all out there?

WM: There were about a hundred maximum when I was there. And a hundred of them essentially running herd on whether we had all the right procedures and all this kind of stuff. But, they never got in on the details of the operation. If we said that we had something broken, and they said, "Well, can we see it?" We said no. "You're not going to add anything to it." So if the people out there who were running the areas were trying to get a job done, knew they didn't have to take it. The transition as I call it, is when DuPont ran into a situation with the Government and, I don't know if I said this to you before. We were talking about a five-year contract. I was up in Wilmington. Nick Litang was there. Nat Stetson was there. We were talking about getting organized for another five-year contract. Nat Stetson says, "I got a problem. Washington thinks that you're making money out of this, and you're making lots of it and we hate to tell you this because we don't think it's that bad, but they do and they don't think that DuPont could really do this as a God and country venture, a dollar for the whole darn thing. They're not stupid. So they got to be making money." So Litang stood up right away and said, "You think we're stealing money?" He says, "Forget about it. Tear up the contract right now." Nat Stetson says, "No, no, no don't, we don't want to loose you. I just want to tell you that there are people in Washington that won't accept the fact that DuPont did this to be nice, to be kind, on demand because it's their Country."

TG: Right.

WM: They said they were going to bring a flock of auditors in, make some studies, and find out were we really stealing something. And boy, you can tell, you can imagine how people feel when you say that.

TG: Right.

WM: As if you've been dishonest.

TG: Right.

WM: So, they made a study; it probably lasted a year. They found out, in the process of doing it, that they owed us in terms of operating costs something like \$50 million more a year. What we were doing with them, the Engineering Department in DuPont was a fabulous thing at that time and they really knew what they were doing down there. They had standards and things like this and this is how you do this, and this is how you do that and the whole Engineering Department was just great. So when they made the study they came up

with, we didn't even include this information from the Engineering Department. We didn't really think of it, because normally we just go to the Engineering Department and do this, do that. But it costs money and we didn't cost it out. Well, you should have. You know. That was the beginning of the things like DuPont says, "We need to start processing the waste." And they, you know, "No, we're not going to do that." They says, "Wait a minute, we know how to do it. We're not going to leave this area without doing this." And we sent them some literature right from the top. And they chose not to pay any attention to it. Right now, we're scrambling with how to get this waste taken care of.

TG: Right.

WM: DuPont had the whole thing, already to go and they were saying, "Well come on, a couple of more aircraft carriers and we'll build more tanks." And we were saying, we never should have done that and we told them that. We said, "This isn't our way of doing business." If you've got somebody that wants to do it your way, you better go get them.

TG: Right.

WM: And that's they way we said goodbye. It was unfortunate.

TG: Right.

WM: And a lot of people, I don't know. Do you mind cats?

TG: No. I love cats.

WM: Yes.

TG: Any kind of cat, any animal, I'm good.

WM: I think he thinks this is a safe over here.

TG: Let's see.

WM: What are you going to do with some of that information that I've been giving you?

TG: Actually, it'll get transcribed and it really just gets used as an appendix in the study that I'm doing, and it'll be archived. It's not really going to be formally published. It'll be archived at the Department of Archives and History of the Savannah River Plant. Actually, I've got a couple more questions and then we'll be done.

WM: Okay.

TG: What stands out in your mind, as the greatest accomplishment of the Plant during its history and then during your tenure as a manager? Two-part question.

WM: Well, to do what we did was just unbelievable; we were very, very proud. It was a lot of employees who were aboard. It was, and you say how in the world did you keep it that way. It was because we had priorities. People were held responsible for what they were doing and we never, six unions came in and really battered us up and down about it and the people said "no."

TG: Right.

WM: Keep going.

TG: What was the greatest accomplishment of the Plant during your tenure as a manager?

WM: Safety performance.

TG: Safety performance? What about ....?

WM: There were a lot of people being hurt doing the kind of things we were doing and we weren't.

TG: Right. What about the greatest difficulty you've faced as a manager?

- WM: The Department of Energy. Just, dealing with them as I had explained to you. They had decided and they essentially forced us out, but they really didn't have any desire to follow up what the DuPont company was doing. The letters were written and said we're not going to extend the contract. In fact, we'll give you an extra year's notice or something like that, if that's what you need to have. But we're leaving. And it's because, it's not because of the problems we had, everybody knew it was, but it was, you don't need what DuPont was taken there for. You don't need this. You can go out and buy it.
- TG: Right.
- WM: And if that's what you want to do, and that's what they tried to do to us once, and said you've got to get done, and that's if you're going to get anyone. And we said, "That's it. That isn't why we're here. We came here to do this and now you've decided that you don't want to do it this way and that way, and so we'll take our people home and go back to commercial operations." And all those words were said maybe trying to say that, "We are no longer needed for the reason that you originally said, and we had a great relationship and you know, blah, blah blah."
- TG: Right.
- WM: Had to deal with the reason why we said goodbye. I got a phone call from Wilmington that said, "DuPont wouldn't really pull out of this thing, would they?" I said, "Try us. We're not going to take it."
- TG: Right.
- WM: But keeping the unity and the safety and morale of the people up for that period of time, it was really something to behold. Is that what you were looking for?
- TG: That is what I was looking for. I just have heard, this is just a little phrase that I heard, "called up on the carpet." I think that means going up in front of you guys. "He got called up on the carpet." Does that, do you know what that means?
- WM: Yeah. It something screwball took place out in the field and we had Safety Engineers around and everything else, you really should hear. You've got the Manager, the Assistant Manager and all these General Superintendents and they meet at least once a week and a Safety Engineer out in the field would say, "I'm going to bring somebody up here and he's going to describe to you what happened."
- TG: Okay.
- WM: And I think it's important that they do that. You say "On the carpet," the deal is let everybody else hear what dumb thing happened and let them share it and not punish the guy who was involved in it by saying, "We're going to put you on the carpet and make you sweat." It was done in a very positive manner. An interesting thing, all of a sudden, that hit me. Jay Monier was a real smoker of cigarettes. He'd sit there talking, he'd be grinding it up and he says, "I can't understand why people drive the way they do when they are in the car. We've got to do something about that." And here he is, chewing up his cigarettes all up. But that was a friendly deal and normally we would never look it at the top and says, "Get that rascal up here. We're gonna have to do something about that." When they came out of the field, the Safety Engineer said, "Hey, I had something happen I'd like to share this with you and we need to publicize it across the whole site, because we never should have gotten caught in that trap."
- TG: Right. Is there anything that you want to say. We're about at the end. Is there anything that we didn't cover?

- WM: No. I think you've done well. I was really just wondering how I could prepare myself for this. And they said, oh you can't prepare yourself for it. Just go ahead and talk. You know, in companies like DuPont, and DuPont's changed quite a bit but, safety they really mean it. It's the top of the list. And sometimes it takes people a little while to say, "I don't need this. How in the world can they afford it?"
- TG: Right.
- WM: It's, I did keep a lot of speeches outside the United States and in the United States talking about how DuPont operates and safety and all sorts of data. You shouldn't just say, I only killed 10 people, I only hurt 10 people... (tape ended)

**END OF INTERVIEW**

## Oral History Interview – Nathaniel Stetson

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Born on Nov. 19, 1916 in New Bedford, Massachusetts, Nathaniel Stetson attended New Bedford Textile Institute, majoring in chemistry. After that, he attended North Carolina State College (now North Carolina State University) and got a Bachelor's in Chemical Engineering. This was followed by a year of graduate study in chemical engineering at what is now the Illinois Institute of Technology. After some initial work with the Celanese Corporation and the U.S. Chemical Warfare Service, Stetson joined the Manhattan Project, where he was assigned to the Y-12 electromagnetic facility at Oak Ridge, Tennessee.

After the establishment of the Atomic Energy Commission (AEC), Stetson decided to join the fledgling organization. Stetson came to South Carolina and the Savannah River Plant in 1952, during the peak of construction, and began working at the AEC's Savannah River Operations Office (SROO). SROO was charged with the general oversight of the plant, then under construction by the main contractor, E. I. du Pont de Nemours and Company. Stetson rose rapidly in the organization, becoming Assistant Director for Operations in 1955, and later Deputy Director of the Technical and Production Division. In 1962, he was transferred to AEC headquarters in the Washington, D.C., area. There, between 1962 and 1966, Stetson served as Chief of the Reactor Branch in the Technical Production Division, and finally Deputy Director of the Division of Production. In 1966, he returned to South Carolina to serve as SROO manager, a post he held until 1980, when he retired.

**Interviewee:** Nathaniel Stetson

**Interviewer:** Steve Gaither, New South Associates

**Date of Interview:** October 15, 1999

Steve Gaither: I read an introduction at the beginning of these.

Nathaniel Stetson: Okay.

SG: This is an interview with Nathaniel Stetson. It's being conducted by Steve Gaither, his story with New South Associates. It takes place on the 15th of October, 1999 at Mr. Stetson's residence. This interview is being conducted as part of the Savannah River Site History Project which is documenting the fifty year history of the site and it's impact on the surrounding area. Mr. Stetson is being interviewed because of his long involvement with the government side management of the Savannah River Plant and because of his position as Savannah River Operations Office Manager between 1966 and 1980. I have some background information on you that I'd like to check and see if it's right.

NS: Alright.

SG: I have that you were born November 19, 1916.

NS: That's correct.

SG: Where were you born?

NS: In New Bedford Massachusetts.

SG: Okay, and you went to the New Bedford Textile Institute?

NS: Uh huh.

SG: Okay, as a Chemistry major.

NS: Uh huh.

SG: Okay. You received a Bachelor's of Chemical Engineering from North Carolina State College?

NS: Right.

SG: Okay. Oh, I should ask you, where is New Bedford? Is that North Carolina?

NS: No, it's in Massachusetts.

SG: Oh okay.

NS: New Bedford Massachusetts.

SG: Okay.

NS: I'm a damn yankee see.

SG: And you were in the chemical warfare service from 1941 through 1944? Or approximately?

NS: Yeah.

SG: Then you took a job after you got out of the chemical warfare service, I guess with Tennessee Eastman?

NS: Right. But I also had a year of graduate study at what is now Illinois Institute of Technology.

SG: Okay.

NS: But it was Armor Tech when I went there.

SG: Armor Tech?

NS: It's in Chicago. Uh, it's Illinois Institute of Technology because it combined with Lewis Institute in the loop. I left before I was given my master's degree, but I had a year of study in the chemical engineering there.

- SG: Okay. When you were in chemical warfare service, wasn't there a radiological warfare section in chemical warfare service? Maybe in the latter part?
- NS: If there was, I wasn't familiar with it.
- SG: Okay. I was curious if that was your...
- NS: My first assignment was Denver Colorado. And that was like construction of chlorine plants, all the chemical constituents of mustard gas and luicite, both blistering gases. It was strictly a chemical operation and I got there because my professor at North Carolina State was a major there. He comended me.
- SG: Oh okay.
- NS: That's why I left the work at Selanese Corporation, which was really my first job.
- SG: What is Selanese?
- NS: Selanese is a—it's a rayon, an artificial fiber and I was in the research laboratory there with Selanese Corporation at Cumberland Maryland. Work on pigmented yarn in terms of how the pigmented yarn affected the plant, the various pieces of the plant, particularly the guides and things like that because they used titanium dioxide for that pigmentation and it cuts, and it used to cut the guides and so I followed that through the plant and then I developed an olive drab pigment that was used for the interlining of the coats during the war, while I was there. But, Selanese is British concern and they confiscate all patents.
- SG: Oh yeah?
- NS: It was theirs. I spent I guess a year and a half there, then went to Denver in the chemical warfare service, and Dr. Lauer, I think he's still living in Boulder Colorado, asked me to come there and help him to get things started in that plant.
- SG: When you went to Oakridge, what part of Oakridge were you working? Was it K-25?
- NS: It was in Y-12.
- SG: In Y-12?
- NS: Uh huh. I was in the start up crew for all of the beta buildings, but one I think. So there's four beta buildings, I was there for three. Start up crew for three of them.
- SG: Can you describe what your job was, or your positions were while you were there?
- NS: Yeah, I think so. The start up crew, I did everything. Most everybody did everything, everything that was needed to be done. There's a lot of vacuum equipment in that particular operation and that meant straddling lines with a paint brush and soap and checking for leaks and that kind of thing for gross leaks and then later on you came around with a helium detector and checked for minute leaks, and generally just getting the plant ready to operate. Later on when the plant got started, I served on the, I guess it was Foreman of the mechanical crew. I was putting the units together that go in the vacuum tanks to provide the separations units. It was all three shifts operation, of course and I was on shifts and doing work, that kind of work putting units together. Receiving units and I think they were called amunits, which are source units for providing the gas material that goes out into the tank. And then later on I became, excuse me, later on I became a Shift Supervisor of Operations. When those plants closed down, what we were doing is we were in concert with K-25. They were a gaseous diffusion plant. To begin with, they were taking material to about twelve percent U-235 and we were finishing it to weapons grade material in the electromagnetic separation. That's what Y-12 was, electromagnetic. And then later on as they added more stages to the K-25, they ran a test to see if they could take it from natural occurring material to useful material for weapons.

SG: Just by using the gaseous diffusion?

NS: Yes. And they were successful in that operation. So then the Y-12 operation shut down. At that time, myself and Ray Murray, who was my boss in the operations, we started a physics research operation and I worked in physics research separating different kinds of materials and providing units to separate different kinds of materials for the last several years of my stay with Carbide because by that time Tennessee Eastman had left. When the war was over, Tennessee Eastman left and most of them went back to Kingsport, Tennessee. Some of them went back to the home office in New York. But anyway, Carbide took over then because they were running the K-25 plant and that's when I transferred to Carbide, they picked us up totally and then I was working physics research then with Raymond Murray, who is still alive in Raleigh North Carolina. I still converse with him, so. So that's about a pretty good summary, at least a highlight thing of time at Oakridge. They ere busy times, they were hard times in terms of working long hours to get the job done and we knew what the job was and it was extremely successful, considering that we were just dealing with U-235 in the molecule by molecule you might say.

SG: Sure.

NS: And to get enough material to have enough for a test weapon at Alamagardo and then a real SG: weapon that was used, it was kind of a big accomplishment and more I think, moreso than most people can imagine even, because it was collected an adamant of time, really.

SG: At that time, is that something that, I'm assuming you enjoyed your job or liked your job.

NS: Oh, I loved it.

SG: Was that the, is that what gave you the enjoyment, was that sense of accomplishment?

NS: Well I guess I like technical challenges and that was extremely important technical challenge and it was different than anything else around, it was quite different than working at a straight chemical plant or something like that. It had physics overtones, which I had some experience with in the physics research work, you know that I had done and that's how I got into that physics research piece I guess, because I did like physics as well as chemistry. As time went on I got more and more away from chemistry and more and more into physics, per force. Not any particular reason other than that's what you had to know and to do in order to be successful in the thing you were doing. Of course, having a knowledge in chemistry didn't hurt, because it was a chemical part of this operation as well because when the material was collected on carbon sheets, it still had to be processed chemically to recover the material. So there's a lot of chemistry going on to in these buildings. They were pretty fancy buildings. They had a chemistry unit and this unit, big operations unit that collected the material. So it was kind of an exciting job from a good many aspects and of course it was more related and made you feel like you were kind of doing your part from what you could do that was important. It was a challenge, a good scientific challenge. So, that's what kind of kept me there and being a good friend of Raymond Murray's and he and I being able to work together, that was pretty interesting too.

SG: Were you offered a job to go back to Kingsport or to the...

NS: I was offered a job to go back to Eastman Kodak, where in the world are they located, someplace in New York?

SG: Rochester?

NS: In Rochester, yeah. I was offered a job there.

- SG: But you chose to stay with Oakridge?
- NS: I chose to stay there, uh huh.
- SG: Because of the job?
- NS: Well I don't know, I can't remember. There may have been a myriad of reasons. I was still maybe interested in the work, I was married, I had two children born in Oakridge and probably looking at the ages of those children and looking at moving again into another job and all that kind of stuff, maybe at the time didn't seem, it didn't hit me. Although Eastman Kodak is a great company and they were very good to us, I thought they were anyway, because they shared profits, even with the workers that were at Oakridge. And I think they still have profit sharing. So it was very attractive, but I really can't say, I can't remember specifically what it was, but you know having young children and being happy with the job and children in school, and it just came probably at a wrong time in my career to be able to accept it. But, they were a good company. I had no qualms about going with them because they were good and I was also interested in photography because I was president of the camera club there and that was kind of an attraction too. But, so be it, you just go into whatever direction you're going because that's what seems important to you at the time.
- SG: You did decide to take another job when you came here though.
- NS: That's right.
- SG: What influenced that decision?
- NS: Well I had a neighbor who lived across the street from me that had made that jump a year earlier. He was a very close neighbor and he influenced me in a way, I think because he said it was interesting work and so forth. And then when I got looking into it, what they were doing, it was different from what I had and it looked like another scientific challenge and another opportunity to learn something different than what I had been doing previously. I think for all those reasons, I thought well, maybe it's a good time to shift gears and learn a new business that would be still helpful and contributory to the country. So, I decided I would try it. So I made an application and was accepted.
- SG: You applied to AEC, right?
- NS: Right.
- SG: Did your neighbor also go to AEC?
- NS: Yes, uh huh. He was a metallurgist. I think he came a year earlier than I did, or close to a year, maybe not quite a full year, but...
- SG: Was that a big—when I think of the AEC I think of more of an oversight, an administrative organization. Was that a big jump going from the electromagnetic research division to an administrative position?
- NS: Yes, it was a big jump because one, I was involved sort of intimately with the scientific research and scientific people and that kind of thing.
- SG: And hands on work.
- NS: And hands on work, that kind of thing. Of course, I met a lot of people doing that you know, a lot of famous people, like Glen Seaborg. He and I were, I wouldn't say we were close friends, but he came to visit me several times at Savannah River and we took walks together and that kind of thing. And a lot of other vigena and those kind of people I met in Oakridge and knew personally. That was kind of exciting, so yeah, coming to this thing, of course, that's another different thing. You know, life is full of differences.

- SG: Well it's another challenge for you.
- NS: It's kind of another challenge, but it had this in the background. Well, there's a lot of scientific stuff going on there and although I'll be more administrative, it doesn't say I can't learn that stuff or knowing it wouldn't help me in my administration, you know what I mean? So, it wasn't like I was jumping over the boat and have the water wash all that other stuff away from me. It was really an opportunity to get into a situation where I could do administrative work and learn a new technology. It was more that thrust I guess than anything else. Of course I came in here in the reactor's branch so I learned all about the reactors pretty quickly by looking at prints and teaching myself what this was all about. What the reactors looked like and then I followed construction pretty carefully too.
- SG: Would that be in the reactor's branch of the technical and production division?
- NS: Yes. I eventually became Chief of the Reactors Branch in the Technical Production Division.
- SG: And then later Deputy Director of Technical Production?
- NS: Right.
- SG: When you came to this area, did you consider it a permanent move or did you not think of it in those terms?
- NS: I didn't think of it at all necessarily, permanent. But here I am right. Who knows what evils work in the hearts of the men.
- SG: You came here with your wife and your kids.
- NS: I came here with my wife and three children, with no place to live. There was no place to live in Aiken when you came here in '52.
- SG: What month in '52, do you remember?
- NS: I was thinking, I was trying to think about that the other day. I imagine I moved in the summer time, after school was out. So, I guess it would be like in July or something. I'm not sure.
- SG: Okay.
- NS: I'm not positive about that, but, I'm sure it would be after school let out anyway. It might have been even in June. I know when we came down here it was very hot, because my wife wondered where I was taking her.
- SG: I think that's kind of the ubiquitous comment.
- NS: Where are you taking me?
- SG: That it was very hot during the first few years.
- NS: It was extremely hot, it really was. So, I do remember that it was in the summer time and that it was '52 and that's about as close as I can pin. It may have been June or may have been July, but I'm not sure. Date wise, I don't know.
- SG: So, 1952, that would have been pretty much the peak of construction so maybe a little bit before....
- NS: Well its, it wasn't quite the peak, it was a little early.
- SG: A little early.
- NS: What was going on then, I can tell you what was going on then. The big push was to get the heavy water plant constructed and several of the stages were already up at that time. And then the three hundred area, you know those names, don't you?
- SG: Right, yeah.

- NS: Fuel fab area was pretty well along. The reason for those two being up front is that you have to have fuel for the reactors to start them and you have to have heavy water or they don't start at all.
- SG: Right.
- NS: So, the big push was the heavy water production plant. And it was rather a major chemical operation. I wasn't directly involved in it, but it was an interesting chemical operation and it took a fair amount of time and a whale of a lot of work to do that. I was more in the reactor end. I kind of pushed myself in that direction so I could learn about the reactors. But that's all, not all, but that's what was going on primarily was the four hundred area, three hundred area work and preparation for reactor start up. I believe also that the foundation for the reactivis, and I'm almost positive was being dug then and we ran into a lot of problems in the R reactor with the buried water. We had a lot of trouble getting the foundation in. Spent a lot of concrete plugging up stuff.
- SG: I remember reading a little bit about that. The water table was fairly high.
- NS: The water table was very high and we hadn't anticipated that and we spent one hell of a lot of concrete getting the foundation. See those reactors go down to minus forty, forty feet underground for the lower levels and getting to that level and getting it dry at that level, getting the foundation for the building was a big problem in the reactor. I don't believe in any of the other reactors it was a problem, but for some reason or another, the water table at that point was serious and we spent a lot of, more than weeks trying to get that settled. So that was going on too and then of course, pieces of work, prints and things like that for the other reactors were coming along because they followed rather rapidly. But the R was the first reactor and it was the biggest because we didn't really know how much space we'd need here, there and everywhere so naturally, it tended to be oversized and I think it still is the largest reactor. R & P have bigger, as I remember it, have bigger assembly areas and disassembly areas than the other three reactors. I don't know whether you've run into that or not.
- SG: I haven't.
- NS: We didn't really know how much area we would need to hang fuel elements and preparation to going into the reactors and we didn't know how much space we'd need under water for the slug collection after they're discharged. So naturally, tended to be, well as it turned out, they look like they're oversized, but when you're building the first one, there's nothing to compare it to anyway, so you're doing the best you can. But I think R & P as I remember it, R & P are the largest assembly and disassembly areas on the plant and the others kind of, are somewhat smaller. Not substantially, you know I'm talking about two-thirds or something like that, or a little more than a half, or something like that of those two original areas. So that was what was going on at that time you know when I got here.
- SG: You said that you placed yourself in reactors or that you—it sounded like you implied that you had a choice of what area you wanted to go into when you came here.
- NS: I don't think it was quite that personal, or I didn't have that much power. I think they were looking for somebody and since I had some isotope and radioactive experience that's where they put me.
- SG: Okay.
- NS: And I didn't object to it because that's where I wanted to be. It's a fit, sometimes you get a fit and sometimes you don't. But that's, no, I didn't have total choice, not that time. I was just a new employee really.
- SG: Right. What was the AEC function at that time? What was say a new job, what was the AEC's rule?

- NS: Our job mostly was oversight and to make sure that we still had all the money. The person that has the money still has some power, a fair amount. And so we had the money and we were capable of, we had the, what would you say, not only the privilege, but the responsibility for handing that money out and to make sure that money that we had from Congress, I forget, I think it was a billion three or something like that, pretty close to that, was going to do the job. And so it was really financial control and control of operations to the point where we were then, since we were responsible to Washington to be able to tell them where we were in terms of meeting goals or having a plant come in on time and that kind of thing. So, it was that kind of oversight to begin with. Knowledge of construction and where we stood in construction so the construction division had a fair amount of responsibility in that time in the AEC. AEC construction because they were following pretty closely and we were following it only so that when we took over from construction we would know what we had, that kind of thing. So it was a learning period, but still a period of financial control and to make sure that the money that was given to us was going to do the job that they expected us to do and reporting on all of that to Washington was primarily the function at that time.
- SG: Before we started the interview, you brought up technical expertise. Did a lot of personnel in the AEC in the oversight and administrative section or AEC as the oversight, did they have the technical expertise to say, look at the design of the reactor and say the charge and discharge area is too large or too small, or the separations canyon should have more room in the modules than they do, or make that type of comment?
- NS: I really don't think so. That doesn't mean to say that we didn't have knowledgeable technical people in those areas, but we weren't at that time responsible for the design other than to follow the design and to make sure that it would do the job to the best of our ability that it was expected to do. But we didn't really, there was such a rush for one thing. You would have to be almost, you know, born on the design team to be able to make that kind of mechanation.
- SG: Especially in this new...
- NS: Well, it's all new. Noone has built this kind of reactor before. You were not on the preliminary design group and you're trying to catch up. So, it's pretty hard to make from your point of view, to make substantial changes to a design which is evolving, even for DuPont. You know, it's not fixed in concrete. It's kind of an evolutionary thing. But we had people in fire protection, we had a good safety crew that had good backgrounds and technical backgrounds in that area. We had a good metallurgical, several good metallurgical people. We had several chemical people, including myself that could make judgments, if called upon to do it and know what we were talking about. But not in design, because design was moving so fast and we, a country at least felt that this was a crash project and we were in competition with several countries for our butt. So, there wasn't much opportunity to make design changes.
- SG: I'd like to go back to something you mentioned a little while ago. Your wife said, mentioned where are you taking me? How did your family fare with the move?
- NS: Oh, we did fine. I can't remember where we stayed the first several nights, but we ended up at the time Croslin Park was being built. And you were kind of lucky if you got one of those units, you know? And we were lucky enough to have one completed at the time when we, very shortly after we got here. We may have lived with our friends that came here before me for a few days, but we finally got a unit and lived in it, and were really quite happy there. And it worked out pretty good. A small place, I think it's three bedrooms and we fit my wife and I and a boy and two girls in it and it worked out just fine. Because the boy had a

room by himself and the girls slept together and we had a room. It was a very small place, but when you came down here and saw that there was nothing available by the way.

SG: \_\_\_\_\_ was real short at that time?

NS: Zero. You were just happy to have a roof over your head, so it worked out fine.

SG: Were there any other kind of boom town type affects? The housing shortage, anything in food or were the schools crowded when your kids got in school? Do you remember anything like that?

NS: I don't remember any food problems here. The numbers of grocery stores is down from where it is now here, of course because there wasn't that many people here, but we had a colonial store and a couple of A&P's and we were able to get everything we wanted. There was a colonial store and an A&P up here at Mitchell Shopping Center and there was an A&P downtown where that skin doctor has his office now. There used to be an A&P somewhere in there. And there were a few specialty stores since this was an area for horsey people. There are a few specialty stores like grocery stores downtown and a place where you had a sure enough butcher. Not just a guy just packaging food, but a guy would pull half a beef down and cut you off what you wanted. It was called the Palace Market and there were a few places like that, so we didn't want for food as well as I can remember it.

There was some traffic problems because Whiskey Road was not like it is now. It was, it was paved in '52, two lanes all the way out. So, there was a lot of traffic problems. A lot of people coming and going and that of course gave you a sense of boom and then you had other developments coming up. Where the park is now, that was all duplex housing, primarily duplex housing. Those must have been torn down. There's two or three still standing on the front row that they use for storage or for.

SG: That's over there at the track.

NS: Yeah.

SG: Some of those buildings.

NS: Those three houses there were part of the housing units for that—I think it was called Virginia Acres.

SG: Virginia Acres, okay, I hadn't heard that before. We're curious about what's still left of those places.

NS: I'm telling you something new here. Those three houses, I think there's two or three there, I'm not sure. Right at the walking track, that's what filled that whole area at one time and it was called Virginia Acre Park. Then there was a, as you go out Pine Log Road on the right, you see a water tank there, I think it's still standing. It may have been taken down now that they're putting a four-lane road in there, but that was a trailer park and that was full of trailers.

SG: Out Pine Log, huh?

NS: Pine Log Road. Hundred of trailers were in there and mostly for construction workers. Then there were other trailer parks around, but that was right here in Aiken and then Virginia Acre Park and Croslin Park and of course the Croslin Park houses are still there in total. But the ones at Virginia Acres, I think it's just those three there.

SG: How were people responding to you when you got here? The people who were already here, the local Aikenites and also the folks living in Augusta since you were living in Aiken?

NS: Oh, I never experienced any unpleasanties from local people. Goodness knows, if you look carefully at it, they had certainly a lot of reasons to be upset because they were moved, a good many of them that were here in Aiken were moved from Old Ellington. Lock, stock and barrel, lost their house and moved. Most of

that was done, I think very well considering the difficulty of anything like that. But, it was accomplished very well. A lot of grave yards, graves were moved and all of those things are upsetting to people and so they certainly had every reason to be, to feel like the outsiders have come and they have done us in. But, I never experienced any of that. Most of the people that I did business with or locally were happy to have us for the most part. Now that doesn't mean to say there weren't some rankor from time to time, but I personally never experienced any that I can remember. So, it must not have been too bad. I have to assume that it wasn't too bad.

SG: Do you remember, this may be just a speculative question, but do you remember the first time you drove out to the siting and how it impressed you or what you thought the first time you saw it?

NS: That's rather difficult to answer. Everybody in those days were in a carpool. So we had a carpool, I can't even remember who was in it, that far back, because that's a long time ago, almost fifty years ago. We rode to the, I don't know whether that area is still there or not, it's not the administrative area that's there now, it's the area where they have, I think a helicopter landing place. It's kind of at the junction of all the roads.

SG: It's the TC area?

NS: Yeah.

SG: The TC buildings are gone.

NS: Are they gone?

SG: Yeah.

NS: They were a central core with arms off, I was in there. It seems like at the beginning of Oakridge, you know, startup stuff again, you know. Since I had been through that before, it didn't startle me at all. Just finding out where things were and how you got things done and who you had to contact to do this, was so consuming that I worried about it. It's something you have to get done. So I don't remember any feelings or that kind of thing about going out there. It was just a startup of construction type thing that happens and you're right, it was the TC area. They're all gone now, huh? All the buildings?

SG: The TC-1 and TC-2, they tore TC-1, I think it was down quite awhile ago, in the '80's maybe.

NS: Right.

SG: And TC-2, yeah I may have these backwards, TC-2 was torn down in '95 or '96.

NS: Oh, is that right?

SG: Only a few years ago.

NS: Well there should be an HWCTR reactor there.

SG: The encasing.

NS: The dome.

SG: The dome is still out there. They've apparently taken most everything out of it and the dome is sealed now.

NS: Right, okay.

SG: But the dome is still there.

NS: Of course the dome is much later, substantially later. There was just those two buildings out there and I was in one of them. I think the AEC had one, one or two wings in one of those buildings and it was just a normal start up kind of operation.

- SG: Somebody who once mentioned to me that, I believe in the beginning you could show pictures of the TC buildings, but that was about all the buildings out there that could be publicly released.
- NS: Oh yeah. Security was quite substantially more than it got to be as years went on, particularly as we got into the '70's. No, all we did was show an aerial view of the TC area and I think that's all you could say about the Savannah River Plant.
- SG: I've heard that plant offsite used to think of the two TC buildings as the Savannah River Site and they would wonder which wing the reactors were in. Did you ever hear any of that stuff?
- NS: I didn't ever hear anything like that, but I can see, I can appreciate the fact that they thought that was the Savannah River Plant, because that's all they ever saw. If you didn't see anything else, then you were pretty—for a long time nothing else was shown, a long time. I would be high pressed to tell you when we showed a picture of a reactor. I think it's quite late.
- SG: Probably the '70's.
- NS: Yeah, quite late.
- SG: You know that brings up a question, what was the AEC's perspective on, of course you've got your criteria for national security that you cannot say certain things, you cannot tell certain things or show pictures as we were just talking about. What was the AEC perspective on what local folks ought to be told? Was it they should be told as much as was possible to tell them or should they be told only as little as you could get by with? How did the AEC approach that?
- NS: Well that was strictly a security question, it wasn't an area of my—I wasn't involved in that. We did have a security division. At that time I was in Technical Production and they were very careful. We had a Public Information Officer and I think his tendency early on was to tell them small amounts of information that wouldn't reveal, be revealing as to what was going on. I think that—I'm positive that changed as time went on because I gave a lot of speeches about what we were doing. I think earlier on it was kept pretty secret and tried to be. Oh, I don't think we were devious. I wouldn't want to suggest that.
- SG: Sure.
- NS: But I don't think we were also extremely overt, it was something in between as to what you could tell people was going on that wouldn't compromise security, but would give them some information that would be helpful to them. I think it was more along that line.
- SG: Do you remember hearing much talk from people offsite about expectations of what the site would do for the area or to the area, either negative or positive?
- NS: Oh I think most of the people were very positive about the site in terms of its positive impact. In terms of business, in terms of the kind of people that were brought in to run the plant, in terms of the mix that it made into this town, I think it was generally positive, is the feeling I have and I think that was a good saving grace because we were accepted on that basis. That made it a lot easier to get things done and to have peace in the valley. Generally, I think people were very happy to have the opportunity to have this many well trained people here in their town, with money that could stimulate business and provide an impedous to the home building industry and all the things that it takes to build a city. So, it was a big impact for Aiken. A substantial impact because you're talking about thousands of people.
- SG: Was there a difference between here and Oakridge, what you saw at Oakridge?
- NS: In terms of what?

- SG: Well in terms of the....
- NS: Let me see if I can answer your question by just talking about it. Oakridge is totally a different situation. No town in Oakridge.
- SG: A company town.
- NS: We built the town in Oakridge. Oakridge was a company town, built with government money. Houses were government houses. You didn't own your house. You were given your house based on how big a family you had. If you had a big family you had an "E" house. If you had not so big a family you a "D" house, and you had a "C" house and a "B" house, and a little "A" house. And then depending on how many children you had. It depended on anything, hardly. I'm sure there was some stuff going on with the housing people that if you had a big job you might get a big house, but I didn't hear much of that, it was mostly the size of the family. So it wasn't, I mean we were Oakridge. We didn't help Oakridge to develop in a sense, where as here, the town was here and we were an add-on to the town, whereas Oakridge, we built the town.
- SG: So I guess in Oakridge there weren't local communities in the area?
- NS: There were local communities outside of the gates. There was nothing inside of the gates.
- SG: So the impact to the local community in Oakridge was far different from...
- NS: Substantially. I mean you can't even compare the two because we didn't effect anybody. We were. Here we came and added, there we were. Now of course there was Oliver Springs, there was a few little towns outside, Harrimon, all these little towns. Now they of course, there were places you could ride in your car and go get booze, because you couldn't get booze in Oakridge. And you would have to smuggle it back in to the site. So it was a totally different \_\_\_\_\_. Everybody was in the same boat in Oakridge. They came from someplace, in a town which they built, whereas here we had a mix of local folks, a \_\_\_\_\_. Does that help you at all?
- SG: Yeah, I think so.
- NS: It's different, I can't really compare it.
- SG: Yeah. I was wondering if reactions from the local community, because a lot of times I hear that people were real welcoming here and since you were at Oakridge I thought I'd just ask if the local communities...
- NS: You see everybody at Oakridge was in the same boat. They came from someplace and they were all in this melting pot together and everybody was happy as clam in saltwater because everybody's in the same boat.
- SG: Okay.
- NS: No problem, no problemo. But here of course, this is a different situation.
- SG: Sure.
- NS: And I think, I think I already mentioned, on the whole we were accepted very graciously considering what they went through to accept us. What they went through because of our presence.
- SG: When you first came here was the operations section fairly large?
- NS: The operations office was quite small. It's not as big as it is now. We had something in the order of a hundred and eighty to two hundred and some odd people total for all activity. It's something in that area and I would say operations then itself was in the area of no more than twenty some people, twenty five, thirty people, something like that.

- SG: Okay.
- NS: In that ball park. It had a reactors branch, a chemical separations branch, a fuel materials branch, a development type of branch that took care of the laboratory and that kind of thing and each of those groups would have eight to ten people. Five to eight people, somewhere in there so, you're looking at no more than thirty, forty, fifty people.
- SG: When you first got there you said that you were following construction of the reactors. How did your job change when the plant moved into production?
- NS: Well then it became a matter of whether you're the overseer of activities, you worry more about money and how money is being spent and if it's being spent effectively in the right direction. You worry more about safety, the operation being managed, run in a manner that meets all the safety codes, not only for the site, but for the surrounding population. So you get into more managerial and more administrative kind of things for which you have guidelines that have been developed for you to follow. So it's more administrative in that direction. Me personally now, I always went out to the site, still after we got in operation because I thought it was just my own quirk. I thought it was important for the people to know who I was and that I was on their side and I wasn't a negative sort of person that would be, that they had to deal with. That I was—I had two legs and two arms and a head and I wasn't a monster. I personally think personal relations are good no matter what the situation is. I just happen to feel that people—as people that run things, not books or booklets or instructions or manuals, there's people that run things. I think if people understand each other it's a lot easier to get things done. For you and for them. If they run into trouble, I always thought it was important, they need to report to their own management first of all, because that's their line of authority and responsibility, but it's also nice to know that occasionally they would let you know too, because you're not the monster that's going to descend upon them and cause great problems. So, it's a way of keeping up with things that you normally wouldn't have an opportunity to keep up with because you've got people that understand that you know what's going on, you're interested in what's going on and you're interested in their job. So, I always tried to get out into the operating facilities that I was responsible for to let people know who I was and what I did and that I was interested. If you stayed back in the office, first of all, you don't learn as much, second of all, you do become visionally, a monster.
- SG: Did other folks in AEC in comparable positions to yours in say separations and fuel materials, did they go out into the areas?
- NS: Many did, and some didn't. When I became manager, I insisted that everybody go, because then I could tell them what to do. For a good part, most of them did and most of them got the same salutary affects from doing it. It's never bad to have people that are doing the work understand you.
- SG: How did contractor personnel respond to you when you went out? Were they glad you went out?
- NS: Well I would always call and tell them I was going to come, what time I was coming, so I wasn't really trying to be a surprise to anybody and normally they were ready for me and they had guides and people that would take me around to see. They'd ask me what I wanted to see and what I was interested in and they'd make sure I saw that, so I would say the response was good.
- SG: Okay.
- NS: I think if you announce yourself first and don't come down on somebody by surprise that helps too.

- SG: Sure. How did you feel relations with the contractor, between the contractor and AEC during the first ten years you were out there?
- NS: I think I mentioned yesterday, the day before yesterday, that early on they were, there was a lot of tension and probably for good reason. We were the neophytes and they were the knowledgeable people. They had a job to do on a time schedule which we set for them and we could be looked upon in a sense to be in the way. But I think as time went on now, at least in my experience, I had very good relations with DuPont. Now we didn't always get along together. We always had differences, we had many differences of opinion, but we were able to resolve those differences at some level because of the relationships that I had developed with DuPont. So I think it was maybe bad at first, and maybe for good and sufficient reasons and I would say almost excellent as time—when I came here as manager I was accepted real well because I had been here before. They kind of knew me and I had very good relations with Wilmington. I had people in Wilmington that I used to meet with directly and they would call me directly, so I had good relations at the top and that's a good thing to do too. That works pretty well too.
- SG: It seems like your relationship with Savannah River has three periods. Your initial job out there and then you transferred to Washington and you came back as manager. Before we leave your initial period of employment, is there anything you would like to add concerning that period? Oh, I should ask you about Civilian Reactor Program. At the end of that, you were head of the Civilian Reactor Program.
- NS: Before I went to Washington, I was head of the Civilian Reactor Division.
- SG: Division, yeah.
- NS: In Washington as well as I can remember, in those days they had a Reactor Development Division and Production Division, which I was in. They had a reactor development division and I had pretty good relations with that man that was the head of that. I can't remember his name at the time and he wanted to promote and to look at seriously heavy water reactors as a power unit for this country.
- SG: For commercial?
- NS: For commercial purposes. And since I was here and had reactor background and that kind of thing from early on, he asked for me and the then manager which was Robert C. Blair had me set up another division, which I was director of. And that was kind of an interesting period because it was a way of getting away from the site and looking at other things from a different point of view. And it gave me the opportunity to go to France and look at their program.
- SG: Were they looking at heavy water reactors?
- NS: They had some look at it. It wasn't as heavy as the Scandinavians and the British. I went to Britain and Spain and Norway and Sweden. The Swedes were looking at it. They had some operating reactors with heavy water, because that's where the heavy water came from to begin with.
- SG: That was the 1930's?
- NS: That's the genesis. So, yeah, it gave me those opportunities to look at and to develop programs with them and also to Canada. I went to Canada maybe, I wouldn't say weekly, but I'd say two or three times a month to Chalk River, Ontario and they had NRX and NRU reactors, both heavy water, and they were doing experimental for us during the war, they were radiating things for us during the war and those reactors were still running when I was director of that Civilian Reactor branch. As I remember, we developed a program in the United States that got money from Congress and could be used for the Canadian development as long

as we felt that it would help our program should we get into that work. Well they already were interested in heavy water, even moreso than we were, other than the fact that we had five running reactors at the time, and so we did a lot of work on their behalf, which was with our money, but we had the data as well as they did and we shared the data with them. We had joint meetings with them. It was called a Canadian Cooperative Program and that was kind of a fun thing to set up and to look at.

SG: Was this the only field office or operations office with a commercial reactor or power reactor division?

NS: In terms of—it may have been. I'm not a hundred percent sure of that though. But in terms of an operating office, there weren't too many of those anyway. Well, Oakridge probably, yeah Oakridge had some power reactor work. I can't remember which direction they were going in. They may have been looking at breeders or something like that.

SG: Okay.

NS: But I don't know whether they had a full division looking at it. Albuquerque wouldn't. I think there's a possibility that Oakridge may have, the rest would be at Chicago operations where they had national lab up there, Argon National Lab. Of course they were doing all kinds of work for different reactors. Same way with all the other national labs. Primarily we had that responsibility in terms of an operations office.

SG: Did the AEC feel like heavy water reactors were the way to go for commercial production or was it just a line of investigation?

NS: I think it was just a line of investigation. Just like when we got started in Oakridge with you have three or four processes you look at and you run all of them and may the best man win. In that case, gaseous diffusion won. In this case it was cheaper and easier and better to go with pressurized water reactors than it was light water pressurized reactor than it was to go with heavy water. So, you know, you win a few, lose a few, but you at least give it a look so you know what the hell you're getting into and getting out of.

SG: Okay with this, I can go back to my original question. Is there anything else you would like to add about that first period of employment here?

NS: No, I think that covers it, I think pretty well. I think we've hit the high points of it anyway.

SG: Then you transferred to Washington in 1962?

NS: That's right.

SG: What was your first position up there?

NS: It's the only position I ever had.

SG: Oh okay.

NS: I was Deputy Director of the Production Director.

SG: Okay. Did you seek out that position or was it offered to you?

NS: It was offered to me and it was more money so I had a lot of little kids at that time, it seemed like the right thing to do. So, I went there and I knew Baron Askey pretty well. He was the Director.

SG: At that time?

NS: Uh huh. And he was more of a separations kind of guy, U-235 gaseous diffusion, that kind of person. He was very good at the cascade operations and that kind of thing. Then he needed someone to help him with the reactor business, because Hanford and Savannah River were running at that time. So I took, my hunk, well I kept up with everything as well as a Deputy can, but my hunk was Hanford and Savannah River.

My piece of the pie was that generally. He would look to me for questions. If there was a problem out at Hanford, I was the one that went out there, usually not him.

SG: More in dealing with reactor operation than separations?

NS: Right. My primary function I would say was reactor operations, although I was knowledgeable with what was going on in the other facilities as well, because they were all running at that time. I think Oakridge, Paduka and Portsmouth, all three were running in terms of gaseous diffusion. So that was a big operation in itself, those three big plants.

SG: Was there any element of—you mentioned that you came here originally partly because it was a challenge, new opportunities. Was there any element of that to the Washington position, or was it—did you feel like you wanted to move to Washington to stay there?

NS: At that time Steve, most people didn't get to the top without having worked in Washington. At least that was the stuff under the rug, you know what I mean?

SG: Okay.

NS: That happens in every company. You've got to do something—you've got to go to Siberia before you can get the top job.

SG: Was this a step to hopefully becoming a manager at Savannah River?

NS: Well it ended up being that, but that wasn't the intent.

SG: Okay.

NS: I was pretty much topped out at Savannah River and this was an opportunity to go up a grade.

SG: And then see where that leads?

NS: Well then, you don't know where you're going, you just know you're going up. You're making more money, let's put it that way.

SG: Did you like being in Washington? Did you want to stay there or make another move?

NS: Well there was some other influences, okay?

SG: Uh huh.

NS: There always is. Nothing's very simple. My wife, I met her when I was working with Selanese in Cumberland, Maryland and being in Washington put her close to her aunt and uncle, who raised her.

SG: Oh okay.

NS: And that was kind of a plus I would say. I think that was the only exterior influence other than job and opportunity and more money and that kind of thing, which everybody likes to do.

SG: When you said that your responsibilities up in Washington were dealing with reactors at Hanford and at Savannah River, what did your call for? What, can you be more detailed about that?

NS: Well, I'll try, but anything to do with those sites in terms of program, projects, problems, were mine. I would come down for reviews of those. They would review for me where this project stood, why isn't it on schedule, why is it on schedule, is it meeting the budget requirements, is it over budget, under budget, that kind of thing. Project review, any special problems, production, new programs, people problems, public problems, anything to do with the site, I had to deal with. So, I got into the bowels of everything that was running in each site and there were a lot of problems at Hanford because they had a little different situation there, because they were a reactor site in a government time, like Oakridge was a U-235 site in the government time. There was a—as I remember there was a tri-cities development company or something

like that, that was very specific about what they wanted to have going on at the plant and you use to have to keep a lot of peace with that group. I would meet with them and we would talk and try to develop things that would keep things going properly. There was quite a bit of public problems at Hanford and also they have, they had a lot of reactors which were not as sophisticated as the ones at Savannah River, but they were next to a very sophisticated river, the Columbia River, which is a salmon river, which when you got radioactivity into it all hell broke loose. So, they had a special situation there because of their proximity to the Columbia River and there were always Columbia River problems in terms of the radioactivity, the intensity of the radioactivity, what kind of radioactivity, is there any activity in the Columbia River. Those kind of problems, I had to deal with. It's the whole milieu of how the site is doing, what are the key projects, how the projects are doing, how is the program doing, how are the people doing, and that kind of thing. It's an extremely well rounded package of stuff and you take care of that by reviews by having to keep people—bring you up to date on things, tell you where things really stand and then you can hold them to that of course. It was a good job, interesting job and I think I did that for four years and then the job came available for the sites. But, it was an interesting job because I learned—in each job you know, you learn something new and that job, working with the public more openly and more directly than I had before because most of my other things were, I wouldn't say cloistered, but they're in-house kind of things.

SG: You were more visible in Washington?

NS: Yeah, I was quite a bit more visible and learned a lot about handling public things. There's a different touch that kind of—I don't mean that negatively, I just mean you need to know where you're going and feel your way and learn how to do it so you can keep peace in the valley. Generally, we did pretty well in that area, I think. But it was that kind of a job, it involved reports to the commission as well and staff papers to the commission in terms of where things stood if they were key enough to bring—if they were important enough, then they would have to be brought before the commission and that was done with a staff paper. I had to write staff papers and I learned about that kind of thing which is kind of another interesting way to operate.

SG: By commission you mean the five members....

NS: The five member commission. They would get a staff paper and read it and they might be satisfied with it, they might not be satisfied with it. If they weren't satisfied with it they had the option of calling you and then you would help them do the best you could to understand what you were trying to do. Or they might just have questions about that you didn't quite well enough to satisfy them in the staff paper. But that was involved too, so I worked not only on the outside, but on the inside with the commission if it was a reactor problem. Does that help you at all?

SG: Certainly. So why did you return to the Savannah River? Was that job again offered to you or did you seek it out?

NS: It was offered to me and it was another great increase and I was coming back home and I knew Aiken.

SG: So by then, this was home? You felt like this was home.

NS: Right, and I knew Aiken and I knew the people and they felt like it was the second coming. I don't mean that too fesciously. That was in the paper that way.

SG: So you were welcome back here?

NS: So I was extremely welcomed back.

- SG: By the contractor?
- NS: By the contractor, by the public and by the operations office. So, why the hell would you turn that down?
- SG: I wouldn't.
- NS: It looks like happiness supreme, right?
- SG: Sure. Did Parr Plant begin while you were in Washington? Was it under construction at that time?
- NS: Well Parr became while I was still with the Civilian Reactor Division.
- SG: So it was before you left here the first time?
- NS: Yeah.
- SG: Oh, okay, okay.
- NS: I had a contract with CVNPA. Did you ever run into that sort of acronyms.
- SG: Yeah, somebody has mentioned that to me.
- NS: CVNPA.
- SG: Carolina Virginia...
- NS: Carolina Virginia Power Associates, or something like that. I had a contract with them under the Civilian Reactor branch to do research and development in their behalf just like I have with the Canadians and we had—we would work together and then decide where the best place to spend the money to do what they wanted to do with this resource of money that I had to further the heavy water program and so they built Parr Shoals at that time. That goes back to the—I don't know when. It would go back to the very early '60's I guess.
- SG: Okay. I have some dates that I had was 1964 through 1967, which would have put it at the beginning of while you were in Washington, but I wasn't sure about that.
- NS: Well maybe the construction began then, but the research and development began as part of the Civilian Reactor Division.
- SG: Did you initiate that or you started—executed the contract?
- NS: I executed the contract. I can't remember—I do remember some of the things we did for the Canadians, but I can't remember the specific details that we did for Parr. I really can't. I've probably got it in my "stuff" here someplace, but I can't remember what it is we did.
- SG: I've seen it described as a prototype facility for research of heavy water cooled and moderated reactors.
- NS: Yeah, that's exactly what it was.
- SG: Was it meant to be a —well I guess all research in some ways is meant to be this, but a prototype for hopefully commercial development?
- NS: Oh yes. They were that interested, at least that group of companies were interested in looking at what was then the most, foremost kind of reactor and of course heavy water had a pretty good place at that time because we had five running. Of course they weren't power producing, they were low energy jobs, so I don't know. They felt that it was worth a go at it anyway, and to spend their research and development money and some of mine to see where they would go. So, but yeah, it's that kind of thing.
- SG: Okay. When you took the position as—well, first I'd like to ask you, is it operations office or field office? Which should I call it? The official title Savannah River Operations Office, but I've seen it in I guess some organization charts as also listed under Field of Offices.

- NS: Well I think you can use either one. It was normally known as SROO, Savannah River Operations Office. It was a field office, as well as all the other offices were.
- SG: Okay.
- NS: So, either title is fine, but specifically it was the Savannah River Operations Office.
- SG: When you took the job as manager of the operations office, did you have a direction that you wanted to go with the plant? Did you see it as a production plant, or did you want to go more in to...?
- NS: Well initially I saw it as production plant, but as time went on and you could see that we weren't going to be doing this forever, I felt that we ought to leave a legacy to this area and that's when I carved away a piece of the plant, in the Barnwell County and had an agreement with Agnes, Allied General Nuclear Services to put up a separations plant. I felt that if we ever shut down, then we'd have a legacy there that would say hey, the Savannah River was here and they left Barnwell County, which was normally less richly endowed than Aiken County, I thought that would be great and so I did it. It was mostly to make sure that the—all the work that we did here left something. Now it didn't work out, but...
- SG: Less something in terms of....
- NS: It was a good idea. I thought it would leave an ongoing nuclear facility that would not only help Barnwell County, that's why they were interested in it, because they were looking for industrial development and I gave away some government land to do that and I had to go to great means to be able to do that. I had to get commission approval. I had to appear before the commission. I had to write the paper. I had to do all that kind of stuff, but I thought that was important to leave a legacy of all this work when it shuts down and it's gone and it will be gone one of these days. It's gone on longer than I thought it would, but it's still there. I knew it was going to go on for a long time because of the waste problem, but leave something active that would be good. Yeah, I got into that as time went on, but mostly I was driven by—early on by production, later on by developments, like the California in '52 in the highflux reactor and those kind of things to see what we could do with this wonderful facility. The legacy problem of leaving something in separations that would be forever. It was those kind of motivations I think. That pretty well puts an arm around it, so I hope it does anyway for you.
- SG: I hadn't heard about that connection with Agnes before.
- NS: Oh, I did that.
- SG: Okay.
- NS: I did that. And I set up the environmental research park here too.
- SG: Did you?
- NS: Uh huh.
- SG: Okay.
- NS: That was done during the time I was manager and I think it's the first environmental research park in the United States as I remember. That was done while I was manager.
- SG: Did you have a similar motivation behind that, leaving a legacy as something ongoing? I guess it's not quite the same.
- NS: Well, it's not quite the same, but it's kind of bad to have this much land protected to not use it for something. And its turned out to be a biggy, you know.
- SG: Great.

- NS: Because this way you have a piece of land which nobody trespasses on or it's at least limited, extremely limited trespassing so you can set traps and you can set situations and have them be there when you come back to do the experiment, and to see the results of the experiment that you were trying to do. In most places, there are people that go around mess those kinds of things up, one way or another, either maliciously or non-maliciously and this way you can do studies on the environment in a controlled area, a very large controlled area, which is, I don't know if there's any other place in the United States you can do that other than a national park and of course that's not easily done either because you've got people, hundreds and thousands of people. So, yeah, the environmental park was I think a good plan. There wasn't any at the time and we had all the makings for it. I had a contract for a long time with the University of Georgia for ecological studies, so it was in place. I had a contract with the United States Forest Service, which was in place and they were planting trees and doing some experimental work on trees and the ecological laboratory was doing work on reptiles and snakes and alligators, crops and effective different kinds of things on the growth of things. It turned out to be a very nice thing, so yeah I, we did that. I think that was a very successful one and still successful. I think it's big. It's bigger now than it was when I was there.
- SG: On a kind of similar note to Agnes leading a legacy or something ongoing afterwards, wasn't there ever consideration of constructing power reactors out here?
- NS: Most of that occurred after I left.
- SG: Oh okay, so it was considered later, but not while you were there.
- NS: I don't believe it was considered while I was—I can't remember. I believe, my recollection is I believe most of that happened after I left. Then there was a lot of things. All kinds of different kinds of reactors, dual purpose reactors and those kind of things that were suggested. None of them—and I think for good and sufficient reasons came about.
- SG: We talked briefly the other day about the laboratory out there, establishing it as one of the national labs. You had said you had thought that would shift its focus away from dealing with production issues.
- NS: Well, of course it would. Some of that's good, it just depends how far it goes. You certainly couldn't say that ten percent of your people couldn't be working on something different. See, you've got two problems there Steve. How are you going to keep the good people when things are pretty well settled? Well, you should have challenging things for them to do right? That's the first thing you think of. Well, where are the challenging things to do? Well, they may be outside of the plant because they may be, maybe the biggies have all been solved at the plant, there's still some problems, but the biggies have been solved. Well, you're tendency is to want to let them do some outside work to keep them challenged and to keep the very good technical people that you have, so that's kind of one force in one direction. The other force says yeah, they're good people and I don't mind them sitting on their hands for a few hours a day if when I have a crisis, they solve the crisis and I don't have a big problem with the public and with releases and whatever. So, you're in between the devil and the deep blue sea. You've got to make a judgment. So, I don't think it would have been bad and we did have some outside work because we had special talents that other people needed. So we did do some outside work, but to turn the thing over to a national lab, where the force would be for the people and the director to go out and get work from here, there and everywhere in the government, that looked like it would dwindle down the availability of your key people

to solve your problems. So, it's a matter of having a balance I guess of how you can do some outside work that would keep your good people busy, but not everybody's so damn well occupied that they couldn't solve your problems when they came about. Or if a new request came up from the government that they wouldn't be there to make the material that you wanted to make. We made a lot of materials out there, other than plutonium, you know. We made lots of different materials and all of them contributed in some way. California 252 was used in research and Curium 244, Cobalt 60.

SG: T-238.

NS: T238 particularly in the space program. You have to have people to do this because you've not only got to radiate the right material in the right way to cause no problem with other production, but you've got to be able to separate it and recover it and give it to somebody and that requires a lot of talent, both physics talent and chemical talent. I think most of us thought along those lines that yeah, a little bit would be good, too much would not be too good. That kind of thing.

SG: Well it sounds like y'all had a lot of reasons, a lot of reasons for not making it a national lab, so this next question may be a simple answer, but I was wondering if there was any political opposition to making it a national lab in the sense of the other national labs not wanting another national lab added or anything like that?

NS: I don't recall any of that. There's a question of money there too you know. How's the best way to get your money for a technical operation like that when you've already got Oakridge National Laboratory, Argon National Laboratory, Livermore National Laboratory.

SG: Is there a need for another national lab?

NS: Do you want another? Does that just divide their pot? So maybe from a pot standpoint, a barrel of money standpoint, there was some negatives in there, but I don't recall this being outstanding. I think it came out alright in total. I think they were happy to continue the direction they were continuing. Each one of them has their specialty and we were happy to contribute where we could, here there and everywhere where we had special talents and they didn't. That gave us a reason to be, yet we had the capability to take care of ourselves and that's the most important thing.

SG: And as you brought up, there was a lot of research going on here in developing the new separations process.

NS: We had one heck of a lot of work going on. All the separations process for all the isotopes we just mentioned were developed in the lab. All the physics changes to the differences in the reactor loadings were developed in the lab. First of all in PDP, Process Development Pile and later on computers, when we got big enough computers that handled that kind of calculation. So, everybody was busy for the most part. There might be an area that be less busy than others, depending upon which direction the research took. If it was chemical, of course the chemistry people would be up to their neck. If it was metalurgical, the chemical people would be relaxed and so forth. But generally, we had enough going on in physics, metalurgy and chemistry to keep, pretty much keep the lab going in projects and new ideas and new loadings. Loadings in the 60's and 70's were big time. I mean when we got into mixed loadings and we could make a variety material in one reactor load, rather than just put \_\_\_\_\_ we were in business.

SG: Very complex calculations?

NS: Extremely complicated calculations. In back of all of this of course is safety.

- SG: Since you were working, or you had a relationship with both Savannah River and Hanford, how did the research efforts at the two facilities compare? Did Hanford do as much research as Savannah River did or have as big a research effort?
- NS: Yeah, they had a very good size lab. There lab is still going as a—I don't know what it's called, maybe Hanford Engineering. It's got a name and somebody runs it. I think I ought to know because I was on the team that picked the contractor. Originally it was Batelma Memorial Institute, because I was put on a team to get a contractor after G.E. left Hanford to keep the laboratory running as a research facility. They had a big, and doing roughly the same things for their units, for their particular situation. Of course they had more worry with environmental in terms of Columbia River and that kind of thing. So they did a lot of water stuff. And we did of course too, we had a contract here with, her name is Ruth Patrick, but she was with, she was eventually with DuPont.
- SG: Oh, I know. Pennsylvania was it?
- NS: Anyway, she was with one of the rather substantial organizations in the north, boy I wished I could remember it, but I can't. Anyway, she would come down here and check the Savannah River for us. She did ecological studies for us on the health of the Savannah River. She's a good lady. I know her well.
- SG: Somebody else you mentioned you knew well, that brings up my next question. When we were doing the videotaping you said to skip the question that I had brought up about Glen Seborg and his influence. Is it okay if I go ahead and ask that question or...?
- NS: I can talk about Glen in terms of what I was concerned with mostly is I'm really not knowledgeable about what his influence to the program. I know what his interests were, but I don't know how that was expressed in what he did.
- SG: Okay.
- NS: Glen was an extremely intelligent man. He of course has name on a few of the isotopes of the world here and I knew him very well. I think that he probably had some influence on our doing work on California 252 because he was chairman at that time and I can't say that he didn't. Or, I'm not even too sure he did, but you know what I mean. It fit in so well with the situation, but I can't remember saying, let's do it for Glen, anything like that, you know what I mean?
- SG: Sure.
- NS: So, he was a good person on the commission because he was knowledgeable. He wasn't just somebody from the outside there because he had administrative capability, he was extremely knowledgeable about the program. So I would say yeah, he did influence the program because when you brought something technical up to the commission, I mean you were talking to Glen Seborg mostly. If he liked it, you got it, if he didn't like it, you didn't get it. So, in a sense I guess he did have a pretty good influence on the program, but he was a very intelligent and very kind and gentle man. I had a lot of experiences with him. One of them, he went down to Florida with his family and he came back up through the Savannah River Plant and called me and said could he stop by? I said sure. And he had two burlap bags filled and he wanted them brought into a cool area. So, I sent the guards down to get them. The bags were full of snakes. The guards freaked out. But anyway, we got the damn bags in the air conditioned area. But that was Glen, you know. You could never tell what the hell he was going to come up with. He had two damn burlap bags

full of snakes that he collected in Florida. Okay, we take care of Glen's snakes, right? He's a good guy. We used to take walks. He'd come to the plant and then we'd just walk around and talk. We used to like to walk. He's a good guy.

NS: I'd heard that from...

SG: Times are getting to be.

**END OF INTERVIEW**

## Oral History Interview – Raine Weimortz

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Born in 1959 and raised in Williston, South Carolina, Raine Weimortz began working at Savannah River Plant in 1978, at 18 years of age. She was virtually raised to work at the plant, since her father had spent his own career in the health protection field at Savannah River Plant. She had always assumed that she would work there as well.

Weimortz began her career at Savannah River Plant as a clerk, delivering mail in P Area. Later, before the advent of computers, she picked up process data cards from the reactor areas and brought them back to A Area. In the late 1980s, she became a reactor operator, eventually rising to shift manager within the Reactor Department.

In 1992, Weimortz left the Reactor Department to work at the Emergency Operations Center (EOC). Located in the basement of Building 703-A, EOC was designed to handle a Department of Energy classified emergency. Weimortz was instrumental in working up the procedures for the EOC, not just at Savannah River, but also for DOE facilities across the country.

**Interviewee:** Raine Weimortz

**Interviewer:** Terri Gillett, New South Associates

**Date of Interview:** June 17, 2006

This interview, with Raine Weimortz is being conducted by Terri Gillett, Historian with New South Associates, and it takes place on Friday, June 17, 2006 in the bottom of 703A, in the basement of 703A. This interview is being conducted as part of the Savannah River Site Project, which is documenting the 50-year history of the site and its impact on the surrounding Area. Miss Weimortz is being interviewed as a representative of the Emergency Operations Center employees.

Terri Gillett: Where were you born? When were you born?

Raine Weimortz: I was born in Williston in 1959.

TG: Okay. So ....

RW: Well I was actually born in Orangeburg Hospital and been in Williston my whole life.

TG: Okay. Did you live, were ya'll in the Area, I know your dad worked out here.

RW: Yes. Yes. As a matter of fact, I had bought a house that had come from Dunbarton.

TG: Oh. Okay.

RW: Then it was moved to Elko.

TG: Okay.

RW: So I had a lot of my neighbors had history about even seeing the planes flying over and they would go to the little store and everybody was sitting down on the front porch of the store wondering why the planes were flying over. And they said the Government was doing it. And they said that's pretty neat. My neighbors, yeah.

TG: So, I'll ask you a little bit about your dad and then we'll get onto you.

RW: My dad was one of the first duty officers to come to the EOC. They had originally ....

TG: What was his name real quick?

RW: Herbert L. Horton. And I'm Raine Horton Weimortz.

TG: Okay.

RW: He was the Senior Shift Supervisor on shift in Health Protection. Health Protection up until '89, I believe it was '89, handled all emergencies for the site, protective action and the initial, the initial protection actions like we do now in the first hour. The Senior Health Protection person handled the events, any event that happened out here within the first hour.

TG: Okay.

RW: And that's what the Emergency Duty Officer does today. When my dad and the others came up here in '89 there were no procedures and I can remember, even at home, my dad was writing procedures. He would bring his work home with him, because they needed guidance on what actions would be taken. And then all those procedures then eventually started getting filtered to the States and to GEMA and to DEHEC for their approval. So he wrote a lot of the procedures that we are still using today. Now, of course, we've changed them with time just like anything else. But he basically set a standard back then in '89 for how we do out business today.

TG: Okay. Well, so the EOC has not been, is not original to the Site. That just ....

- RW: Yes. The EOC was here. You had the Operations Center and then that's the 24-hour Operations Center, and then you had the Emergency Operations Center that doesn't get staffed until there is actually a DOE classified emergency.
- TG: Okay.
- RW: So you can have regular routine emergencies every day. But it didn't get activated by Senior Staff and folks, like a mitigating event, that didn't happen until there was a DOE classified emergency.
- TG: Okay.
- RW: So with that said, there were some people up here who took calls and did some routine events, but until '89, and then when they came in '89 the EOC and Operations Center were inside, where you walked in the door a few minutes ago. That was the whole thing. This didn't even exist.
- TG: Oh. Okay.
- RW: So when we activated, that's where everybody came. Senior staff. The Senior Health Protection Person would come up here and help mitigate winds runs and things like that to whether it be a chemical or radiological release that would occur. They did that from here. But they didn't stay here all the time. They were actually on "F" Area in the Patrol Building because they would just go around the whole site.
- TG: Okay. Is there some kind, ya'll do a training session so everybody comes here. You know when people have to evacuate their buildings for an alarm, an evacuation test. Does this place get staffed as well? Is that part of the training procedure?
- RW: No. We do exercises.
- TG: Exercises. That's what I meant.
- RW: Pre-planned exercises. As a matter of fact the site has a group that does nothing but plan and do the production of an exercise for the Site.
- TG: Okay.
- RW: And we always participate in that in the Operations Center and in the EOC.
- TG: Okay.
- RW: And they have to do a yearly one anyway. We do trial ones where everybody has to go at least one time for a rotation and I think they're three deep. So for example, the person who would send in any one of those chairs out there, there's got to be two other people that could actually back then up if they're out somebody else is on call. Somebody is always on call.
- TG: Okay.
- RW: So it's not left to chance to make sure that everybody's here. But if there is an event, and I say an event on Site because we have fire alarms every day. We have ambulance runs every day. You know, fires, medical. We do have some spills, we have some Radiological events, but they're not classified emergencies to where we have to activate this room. It would have to be to a certain degree or to a certain extent of exceedence to make that happen here. And that's why I call them "DOE classified emergencies" to make that happen. It's got to be significant.
- TG: Okay. All right. Well, that's your background. Did you, when did you start working out here?
- RW: In 1978.
- TG: In 1978 at 18 years old? Did you just always assume that you would work out here?
- RW: Yes. I did.

TG: You did?

RW: Yes. I did. At 16, I said, "Well I can," and this is the honest truth. At 16 I said, "Well, I can either go to work at SRA, they pay really well, I could look at a degree. What I want to do, I can go to work and go get a degree if I want to. Okay, that's what I'll do." And I just made up my mind back in '76 you could, if you put in an application to come to work out here it took about a year for them to review your application. So I put my application, me and a girlfriend put our application in when I was 17. I said, "Okay, if I put my application in at 17, at 18 they'll hire me.

And they did. And I came in as a clerk, delivering the mail in "P" Area, in the reactors and then I picked up, because we didn't have computers, I would pick up the process data from all the running reactors and take it here to "A" Area where they would process and I had to handle secret material, you know, and sign for it and I just felt so responsible about that and always admired the folks who actually ran the processors and did the work, and there weren't any females doing it. I think there was like, two. And I can remember the first ones, because they called her Charley. Her name was Loretta. But you know, they didn't have any women doing that. I know I worked very hard doing the mail and then after that I became an Area clerk in "K" Area. And we worked really hard. Me and the girl in there, the typist, they had a clerk and a typist and that was it. We took care of all the paper work and all the procedures and all everything for the whole building. And I know that we worked harder than most of those reactor operators did and we made a whole lot less money.

TG: I'll bet.

RW: So one day, one of the Senior Supervisors walked into our office and he said, "Well, girls, there is no reason why you can't do it." And I said, "Well there you go." She said, "Well I want to be an E&I mechanic." And I said, "Well I want to be a Reactor Operator." So there you go. And when I left Reactors in ....

TG: So you did become an operator?

RW: I became a Reactor Operator and when I left the Reactor Department I was a shift manager.

TG: Okay.

RW: So, yeah. I was really happy about that. I had really worked my way up from the bottom to a shift manager. So, I feel like I really accomplished something then. And then I left there and I came here.

TG: So you had a taste of DuPont and then Westinghouse.

RW: Oh, yes. Oh, yes.

TG: So do you feel like DuPont really encouraged your career?

RW: DuPont absolutely encouraged my career. But I also credit that to the times. Everything has a time and a place. And you can take this same company, maybe I don't know, but you can put them in the same time, the same place, with the same amount of money flow and it could be maybe the same thing.

TG: Gotcha.

RW: But like everything, time changed, time changes, the Cold War, you know everything, so. But yes, Dupont absolutely 100% taught me how to be successful. They did. They taught me how to be successful. If I wanted something, then it was there for me to take and it to my choosing. If I wanted to do it, it was there for me and it was entirely up to me.

TG: That's great. So, I guess your Dad had good views about DuPont and working out here.

RW: Oh! Absolutely right. As a matter of fact, my dad worked here, my uncle worked here, two sisters, it's been

a family event. You know it supported my family as a child, my mother and father in our household as a child, and supported my household as an adult.

TG: Okay.

RW: And I came here, I left Reactors in '92. Okay. I've been here since '92.

TG: Does your husband work out here?

RW: No. My husband does not work out here.

TG: Okay. Did he ever?

RW: Nope. Never worked out here. Never did.

TG: They didn't even need him here?

RW: Nope.

TG: That's odd.

RW: Well, I really kept it separate a little bit. I really did because you know, when I'm here I give it 100%. But when I leave here, other than my safety values 'cause they have taught me a lot of good safety values, no my husband could never work here. He was in his independent business and you know, he just doesn't have the same philosophies.

TG: Right. Right.

RW: No.

TG: I understand. That's how my husband is.

RW: Yes. I mean, that's okay. And that's okay. That's just how it is. But I've worked in every reactor Area. I actually found; these are my most significant events. I was sitting on the console during the restart of "L" Area, when the reactor went critical, on the restart program. I was sitting there.

TG: Wow.

RW: That is just, that's very emotional. I mean that's just awesome, to have that power. I mean I guess you call it power; that stress. Yeah, 'cause that's stressful. But it was good; it was a good stress. It was just part of that; just to be part of that was a really big deal. 'Cause I could remember I drove this green station wagon when I was doing the mail. You know, I was the mail clerk, as lowest pay possible in the whole Site. I can remember driving by "L" Area and seeing all the trees growing up and who would have thought in '83 we'd be restarting it. You know, taking it critical again. So, yes, it's a big deal.

TG: Wow. Another question about your dad.

RW: Yeah. Let's talk about him. I know you want to talk here, but I just have so much history about ....

TG: I know. I want to hear about everything. I'm just trying to get the background and then move forward. I just wanted to ask, like, I know towards the end when he was moving here, we were out of the, when he came over here.

RW: Yes.

TG: In '89.

RW: Yes.

TG: We were done with the Cold War basically.

RW: Okay. I don't remember what year that was.

TG: But in the beginning when you were a child, was it just like, you know, your Dad works at SRS, that's it, that's all you need to know. Or ...

RW: I knew that he worked in the Health Protection Field and the reason I knew that is because we had instruments at my home.

TG: Okay.

RW: We had monitoring instruments that we were not allowed to touch because in a radiological event, there were certain people that were required to go out and take radiological readings and he was one of them. So, yeah, I absolutely knew what he did out here.

TG: Did he have, did he, was he trained for that out here or did he have some background in Chemical Engineering?

RW: Yeah. He was trained for that out here.

TG: Okay. Did he move here for that?

RW: No.

TG: He lived here.

RW: He was born in Allendale.

TG: Okay.

RW: Estill.

TG: Estill.

RW: So he was local.

TG: Okay.

RW: And was in the Air Force. So when he got out of the Air Force, he came back here. A lot of folks came from Alabama; we had a lot of people from Alabama out here. But I remember this, because most of these people are my friends who I've grown up with, that came from somewhere else. You know, their parents came here so their children grew up here. It's just amazing. Well look at our Under Secretary, Jesse Roberson. I've worked with her from the day one she came to work right out of college. That was so neat because I would tell her, and this is the honest truth I would say, they put her, this young, black female and it's not really like a black or white issue, but it does because of your cultures and where you're from. And it's a challenge and it was a challenge for her because they put her on "C" shift in "P" Area which was the worst shift they could have ever put her on and I loved every one of those men 'cause they're all older and most of them have died. But I knew them all. Most of them were from my hometown and I was raised with their children. Grumpy? Most of them were just grumpy, grumpy old men. And I was like, "Oh, they're putting her on that shift, how terrible for her." But it was not terrible for her. It was a wonderful challenge for her and she rose to the occasion and I can remember going down to the ladies' lounge, we called it back then, and some of the girls would go in there and I used to tell her. Because within just a few months time, they had so much respect for her, there is nothing they would not do if she asked them. Whatever she would have asked them to do, they would have done; respectfully. And I was like, "Wow you're the only person I've ever met that had that." I said, "You have an aura." So she used to say, "Oh, I have an aura, Raine says I have an aura." But you do. And she was from Mississippi, so I said, "Okay you and Oprah aren't related. I want to have what you are, because you have that same aura that Oprah does." I can remember sitting there and we'd just laugh and laugh about it. But it was absolutely true. And look where she went. So, you know, there's just so much history and I see her, you know, when she came in with

her entourage, you know, and I'm thinking, "I worked with her." You know, just, how about that I know an Under Secretary. Good for me. You know, I'm just privileged.

TG: Right. That's neat.

RW: Yeah, because maybe you helped influence them in some positive way, whereas they've helped influence you in some positive way.

TG: Right. So you started out in the mailroom. Were you in, would you be in the basement of 703A and then just back?

RW: No. No. I actually reported to "P" Area, to the little mailroom out there in the 704 building.

TG: Okay.

RW: And then I would deliver the mail there. Well I would actually do the morning reports first. I would go to all "P", "K", and "C" and like I said, I'd pick up all their work and deliver it and then bring back whatever each Area wanted me to bring back. And then I would deliver the mail in the afternoon. And I can remember thinking then, "Well, I think I can do pretty good out here." I mean, you know you just have a sense a bout it. If you're given an opportunity and there was nothing that kept us from doing that, then it's like, "Okay. I think I can do pretty good at this."

TG: Right.

RW: I've decided to pick what I wanted to do. Isn't that neat that you can just say, "I think I want to, let's see what I want to do." And then go do it.

TG: Right. And the training is sufficient to let you do that.

RW: If you're capable of learning that, you know. And there are some people can go on the safe just nicely. Everyone has a maximum capacity. Most people have a maximum capacity and some folks have a little bit bigger one than others. If your maximum capacity level allows you to do that, then absolutely, it's right there for you.

TG: Okay. And then you were in reactors and just we're gonna rehash ....

RW: Loved it.

TG: How long were you in reactors?

RW: From the time, after 18, let's see. '81 I think. '81.

TG: '81? Until?

RW: Until '92.

TG: And you moved here in '92?

RW: Yes. So I did pretty well in 11 years.

TG: Right. Tell me about like, how did you come into the business?

RW: Well, my Dad was going to retire. And the reactors were shutting down, or had shut down. We were actually doing a cold lay up for the buildings, you know. So, it's like, you've got to go somewhere. And that's how a lot of us felt at the time, "Where in the World are we gonna go?" And my Dad said, "Well, Raine, you know I'm getting ready to retire. I think you'll do a good job in the EOC there in the Operations Center and I'm going to put in a good word for you to Kurt McDonald", who was the Operations Center Manager at the time and Jim Fulton who was the manager, who are all multi-millionaires now p.s. by the way because they were the first ones to do the spin-off. But anyway, he said, "I'll put in a good word for you." And I said, "Well, Daddy, I'd appreciate that." So I went over for about six months and wrote some

procedures, 'cause I had done that in reactors. I had done a little bit of everything. I had written some electrical plans and you name it, I had done it at one time or another. So they needed some help in writing some procedures in the tank farm and I said, "Hey I'm game, whatever. Give me some books, I'll figure it out." So I did that for about six months and then I interviewed and got hired here.

TG: Was it like a, so it wasn't? Somebody, some people had told me that it depends on your seniority and then you can kind of pick where you want to go and is ....

RW: I was an exempt already so it's not like seniority had any play.

TG: What does that mean, exempt?

RW: Exempt means that I am a monthly paid employee and I had gotten promoted to a supervisor level in 1987.

TG: Okay.

RW: So once you do that, you really, seniority is gone. You were exempt from the seniority process.

TG: Okay. I didn't realize that.

RW: Yes. That's how that works. You're exempt from the seniority process.

TG: There's an awful lot to know out here and like, they're like, "Don't you know what that Area is." I was like no ....

RW: No. You don't have to know and I don't mind saying. I feel like, I honestly feel like I have a lot of knowledge about the Site, but I have hung out with some of the best of the best when it comes to knowledge. If I could just remember a tenth of what these people tried to teach me; and most of them are dead. I'll be honest with you. Most of them, I don't like to do it because I can actually sit here and picture myself back in 1978-79 sitting in the lunchroom and most of the people that I could see around that little lunchroom are gone.

TG: Right.

RW: They have gone on to a better place than where we are.

TG: That's true.

RW: Just about all of them.

TG: Yeah.

RW: 'Cause I was the youngest person. I was actually, like probably, the youngest person on Site, on the whole Site, for a while.

TG: Most of the people I interview are well in their 80's.

RW: Well, I probably know all of the reactor people that you probably interviewed. I probably know them.

TG: Okay.

RW: They might have shortly thereafter I came, but, and it used to be that some of them would come back out for a tour. Some of the very older ones, even 20 years ago were old, would come out for a tour and I'd take them over to "R" Area. I was "R" Area custodian for a long time after it closed up, we did all kind of stuff over there. And I would take them over there and they would just reminisce and I would listen and pay attention, because it is such a privilege to know them. It's a privilege to know those people and to know what they sacrificed for this Site. Really is.

TG: It's obvious from talking to you, but you feel like this is cash net and that this is important job.

RW: It was, it really was. And now it's just as important to the environment too. Oh, I was sad. I was so sad. Just like everybody else. Just like a loss. You know, but you've got to move on. It's just the times.

- TG: When were you sad? Like, what made you sad?
- RW: Well, when we shut down the reactors. It was sad. It was sad for, you know, because, not because you know, it's sad like, "Oh I want to make materials to go in."
- TG: Yeah.
- RW: It's just sad because ....
- TG: The mission.
- RW: The mission is done. It's just something you've worked so hard for and then, but that's just normal. That's just human.
- TG: Right. When you were trained, like on the Reactor, what did your training process encompass? Were you taken away somewhere or was it on-the-job training or were you like in training for two months and then on the job or how was that?
- RW: Excellent training. That was when training was really developed out here and it was excellent. Not to say, I'll be honest with you and talking to these 80 something old men now, all of them would be in their 80's now. They were not trained that way. They were trained, you get in there and you just do it, and you learn it. You either learn it or you don't. They were trained that way. I was not. It changed with the times. We were just so blessed that nothing significant happened. And I'm gonna tell you something. There have been documents that have been found that the Government, I believe, you know, why was this place chosen to begin with? Well because it was a rural farm Area and if something really bad happened, well, you know, hey, there you go. So, there was some reasoning behind everything that happened. But just by the Grace of God, and this is what I say because this is what I believe, we had good enough people here that had such good values and work ethics that had more passion that I will ever have about making sure that things were done right and done to detail. Even though we didn't have a formal training process, they were well trained. You just had to pay attention. You just had to pay attention. Most of theirs was on-the-job training. You had to pay attention. But then by the time I came along we went, we started cycle training during my tenure out there and we went to training every five weeks for 40 hours. As a matter of fact, a lot of the Department of Energy representatives that work out here today, as facility reps; there are several of them that had come out of the Nuclear Navy and had gotten their degrees from Thomas Edison State University in New Jersey because they accepted work history. So their work on a nuclear sub translated the school and I started to do that to get just a Nuclear Engineer and Technology degree and I stopped. I was like, well you know I make pretty good money now, and do I really want to do this? I should have and I even had a Lab, 'cause we did the Low Power Physics Testing and I was the test coordinator on that. So I'm like, man I even had my Lab. Can't do it.
- TG: So ya'll went, you had 40 hours in training every five weeks?
- RW: Every five weeks.
- TG: So what would it be? Four weeks on ....
- RW: In school, classroom.
- TG: In class.
- RW: That was 40 hour classroom training every five weeks. We had periodic evaluations, we had oral boards, we had on-the-job training, we had job performance measures. We had an excellent training program and as a matter of fact, the rest of the DOE complex really set their standards by our standards.

TG: Wow.

RW: And even here in the EOC, they set their standards by our standards; on a lot of the programs that we developed. For example, Albuquerque, was it Albuquerque that came out here last year? Yeah. And we had developed a training program and our Site had standards for this. This was a Site standard. So, when I took the training job, we'd want up to the Site standards on our training program for in here. So I went and developed one. Albuquerque comes in and looks at it and, "Wow! We like this. Can you come out and we really want to implement this program where we are." That makes you feel good. I'm like, "Well, yea, it's not like I was really doing anything really earth shattering." I'm pretty much following the Site standard and just put it into play for what we do.

TG: Did you get to travel?

RW: I didn't. I think we sent a lot of the stuff that they needed. But, no I didn't travel. Well, I have a little one by the way. I really didn't want to do a lot of traveling if I could avoid it.

TG: Right. Let's see,

RW: So training, you got pretty good training, excellent training program.

TG: I guess that all this stuff was before you were born; the construction era and stuff. What were the towns like, I mean what was.....?

RW: Oh, well let's talk about this. Some things ....

TG: Go ahead.

RW: Well those tests that they did, you're right. They were before I was born, but my Dad was a part of, you know, like, all this gets UNCI like even on this stuff right?

TG: Oh, yeah.

RW: 'Cause like in our Area they, you have to learn what happens to materials when they're put under certain circumstances and the only way to know that is to do it under a controlled setting.

TG: Right.

RW: So they did that with some of like a fuel set up. They like, let the temperature heat up on it. That's why "R" Area has so many basins over there now. All that was done there. My dad was a part of that. My dad was a part of in '53, now this was before I was born, but as a "R" Area custodian I was part of this later. They had a weld leak on one of the outlet nozzles to the reactor tank and they had to go in there and weld it. Each man could only go for so many seconds, I think, to do this weld behind this big shelf. That just amazed me. They all died, relatively, you know. 'Cause I asked that question, I said, well you know if there was such high, well I'm not saying that caused it. You know, it could have been anything, but you know. That's what I'm saying. These men did their job. They did what was expected of them and they did it to support our Country.

TG: Were you ever exposed? Did you ever have an exposure?

RW: No. Oh, absolutely not, because my dad had trained me and it was Site policy. If you, as an individual, followed the rules that were set for you, then you were your best protection.

TG: Right.

RW: And you just, I worked in the reactors, which we didn't have a lot. You know, Tritium was up, but you can just flush that out. But you had to just follow the rules and those rules were established for your protection. You can't fudge them; you can't say, "Okay, I'm just gonna run across this rope for 30 seconds and do this

one thing." No! Are you stupid? Who are you fooling, yourself? 'Cause the only person you're gonna hurt is you!

TG: Right.

RW: Don't do that. My dad, my daddy says I'm not gonna do that and I'm not gonna do it. And I didn't. So, no. I have very low exposure rates.

TG: Okay. A couple of people had talked to me about like, faulty equipment, like a tear in a glove or something like that.

RW: Well, I mean if that happens, especially in the Separations Areas, you know, that can be terrible and I just didn't want to be part of that.

TG: Right.

RW: I just didn't want to be any part of that. And you're right, 'cause you could be exposed to a marriot of things.

TG: So, you were in the control rooms.

RW: I worked in the building, I started out as a monitor operator, a building operator, a reactor operator, so I've worked every inch of that reactor building. Every inch. And then until I went into the control room and then some. Still worked in the trenches.

TG: Those control rooms look so, like space aged. You know what I'm saying? They kind of look, I saw the test reactor before they tool the test reactor apart. I saw the control room in there and it just looked so ....

RW: In "C" Area.

TG: In "M", in "M", the triple 7.

RW: Okay. That was in '89. Okay, I just called my mom, I said mom. That wasn't in '89, that was in '82. Let me tell you how that is. My dad gave a speech on that in Las Vegas in '82. I said, "When did you and daddy go to Vegas," he was taking his nap. I said, "When did you and daddy go to Vegas and daddy gave that," and my mom said just the perfect dates.

TG: Well that would be March 14....

RW: She visited her brother who lived there at the time and also worked out at Las Alamos. I didn't know that until just recently.

TG: Oh.

RW: I said, "I never knew I had an uncle that worked out there? Get out of town!" I didn't realize that. But anyway, '82 is when he gave the talk on how they dismantled this.

TG: Okay.

RW: So when did they dismantle it? It had to be '79, '80, '81.

TG: Well, I'm not really, they actually like, took it apart last year. Like actually removed it from the building.

RW: Oh yeah, in "M" Area. But they a lot of, the work they did to .....

TG: That was when I mean ....

RW: Yeah. That was in either, that had to have been '79, '80, '81, somewhere in that timeframe because in '82 he was giving a speech on it.

TG: Okay.

RW: So I know it had to be before '82 when he went and gave a talk on it.

TG: So as a kid growing up, what did you think they did out here? Did you hear it called, I mean it was a Bomb Plant?

RW: Oh, yeah. Absolutely, the Bomb Plant; oh yeah, everybody started calling it the Bomb Plant. Everybody did it. The Bomb Plant.

TG: What were the towns like? New Ellenton and you know where they, were you're living now?

RW: Well let me tell you about what my neighbor told me. I just loved her. She's passed away now. Miss Lake, Hazel Lake was working at the Lee Banana Crate Company. So she had such good detail of everything and the towns and the people and the moving of the houses. As a matter of fact, the house that I had bought in Elko got stuck in the field because it had rained and bogged out, mine is set back further than all the rest of them in the whole neighborhood. The reason why is it, 'cause it rained. Al Mooney who is another wonderful source of information, he just passed away, was a dear friend of mine, he just passed away this past year. He was another wealth of information because he lived here. So, I've been everywhere on this Site because he took me; 'cause I was his assistant. Everybody who was Al Mooney's assistant usually got promoted and he was just wonderful.

TG: What did he do?

RW: Al Mooney?

TG: Yes.

RW: He worked in reactors the whole time. But he knew everyone. He was, he just, had he been in business today for himself, he would have been a tycoon because he was that good. He taught me how to network and he taught me how to get things done without having to do them myself.

TG: Delegate.

RW: He was the best. He truly, actually, and I've been here 28 years, he's the best I've ever; now I can do my own schmoozing. I can do my own; I've learned but I've learned from the absolute best. And I guess, that why I got to where I am now, because I absolutely learned from the best. And I'm actually a very mild, meek person at home.

TG: Yeah?

RW: But here? No.

TG: Well, what kind of stuff did he show you on Site, like hog barns, stuff like that?

RW: Oh, like, oh, yes ma'am. On Monkey Island, you know, where the water; they had a road going across there, and then when they started, the water started rising, it just covered the whole road. So you can drive out the one end of the road and look across it and there's the other, where it came up the hill. You know, the cars, the sidewalks, the roads, we'd ride by and look and say, "Yeah, we used to come here when we came to town."

TG: Did he live in Ellenton?

RW: No, I think he lived in Dunbarton. Yeah, he lived in Dunbarton and along with my neighbors. So see I just had, they talked about it all the time. It was Dunbarton, it was their home. Just like where I live in Williston now. But the towns, now, getting to your question, the towns now have really got to be inventive and if you don't have some high energy people in your little local councils, you're gonna loose. Eventually they'll just loose if you don't get some industry in here because; now Aiken is just thriving. Aiken has really had some

high energy people and have done well. And these little town, if you don't have the energy there, you're just gonna loose.

TG: As a kid, do you remember going, when you went into town, where did you go from Williston right? You grew up in Williston?

RW: Yeah.

TG: So, you went into town, you went into Williston.

RW: I lived there, yeah.

TG: Okay. Was it a bit more booming than it is, I mean do you remember lots of people on the sidewalks?

RW: Oh. Yeah. Because we had, yeah it was and Barnwell was the same way, Barnwell and Williston was the same way. Yeah. Barnwell had a drive-in-movie. Well, there was a letter to the editor in last week's paper, I wish I could give you because somebody had written in and summed it up so well. Back in the day there was a movie theater, you had a bowling alley, you had a skating rink; and now we don't have any of that anymore. It's all gone.

TG: Right.

RW: So that summed it up really well. It was really short and sweet and it summed it up very well. That's gone. We had a public swimming pool. In Williston, I spent most of my childhood at swimming. They filled it in and that's gone,

TG: Right.

RW: But I wouldn't trade it for anything because, actually living in a small town gave me a much bigger advantage than most people would ever have coming out of a city and the same thing applied there that applied here. If you want to do something that's fine, but if you want to be in the band, if you want to play basketball, if you want to be a cheerleader, you can. There's really not a lot of competition. If you chose to do that, than you can.

TG: Right.

RW: Isn't that wonderful. See, in the cities, people get, I guess that's what makes them insecure when you're competing against 500 other people well you can just say, "Oh forget, I'm not gonna deal with that." But see, I didn't have any one in competition, so "Okay, I'll do that." It was like, "Well I didn't have anybody to say well you can't, so I just did it." It was great.

TG: Let's see. Well, why don't you, can you contrast DuPont management to Westinghouse?

RW: I can, but I won't.

TG: Okay. Okay.

RW: I can but I won't. I have absolutely worked for some wonderful people on both. I'll do that. I've worked, you've had Westinghouse, DuPont, it doesn't matter. There are good people in this world and there are bad people in this world. It's entirely up to our Senior Management to set the standards for how all others will act and react. And if it's not good at the very top or the message isn't clear that that this is how we are going to do our business in this positive way or this negative way; however the standard is set is how it's gonna be. I don't need to say anymore.

TG: All right. What about, was safety just instilled in you from being a kid 'cause you dad was safety conscious?

RW: Yep. Yep.

TG: So it wasn't a big shock to you to come out here and ....

RW: Nope. None.

TG: Don't run, don't do this, walk on the sidewalk, you know.

RW: Right.

TG: Okay.

RW: That's wonderful. Those were really wonderful, wonderful things that were instilled into us. Not just, "Oh, let's be safe because this piece of paper says we're gonna be safe today, so we got to do what this piece of paper says." No, that wasn't. It was a philosophy and a mind set. Not something written that I've just got to show you. So there's a difference.

TG: Gotchya. Security the same way?

RW: Oh my goodness, yes. You know I'm just rambling on. I apologize.

TG: No. No.

RW: You know I have a tendency to do that, you're just going to have to stop me.

TG: The tape's an hour and a half long. We're not even half way through it yet.

RW: Stop me. 'Cause I do have a tendency to ramble, but it's just been so, I've been so privileged to be a part of all that and to know those men; the 80 something year old men who most of them have died now. But it's really give me, I don't know, because I could either choose to use this positively because you're gonna die, everybody's going to die someday, and you know, if all I care about is where my next dollar is coming from, you just, then what have I done?

TG: Nothing. This is back when you were hired. Did you have your clearance, did you come out here and work?

RW: "Q" cleared.

TG: You were "Q" cleared immediately.

RW: Yep. I sure was.

TG: So you weren't even on Site until you had a "Q" clearance.

RW: I came on the Site with a "Q" clearance.

TG: You came on the Site with a "Q" clearance.

RW: Yep. Because they did all my background check before; see that's how you knew that you were getting ready to get hired. If they had been to your neighbor's house, that was a good sign.

TG: Okay. All right. That's a good quote. Let's see. I usually got to pull a little bit, because I'm writing a long report and I ....

RW: I'm sorry.

TG: No. No. That's perfect. Let's see. I'm just gonna kind of read some of these. These are canned questions you know. Did you ever feel the security procedures were an invasion of your privacy?

RW: No. Not at all.

TG: Okay. We went through that. How about, we kind of talked about, you know, you were talking about the skating rink and a swimming pool and all that. Did you ever participate in any of the ORA, the Operations Recreation Association stuff?

RW: Oh, yeah. Yeah. Yeah.

TG: Tell me about that.

- RW: Well, Bingo. Bingo was, oh a big deal. I got to go play Bingo. Yea, that was fun 'cause I won the very first time I went.
- TG: Bingo?
- RW: Yeah.
- TG: Where was that held?
- RW: Barnwell, out at that Elementary Auditorium. I'll never forget it. The first time I went I won.
- TG: How old were you then?
- RW: 18.
- TG: 18? What about, did you ever go to any of the, I know they had baseball leagues and ....
- RW: Yeah. We did one. My sister and I got one started in Williston one time and got talked into volunteering. Had to go to the Eye Doctors (inaudible) go by the book. Oh well, I'm not doing this anymore. I hit my own sister.
- TG: All done.
- RW: No, but they did. It was wonderful though. I've played in other ones too. In my 20's, yes honey, I participated in all that stuff.
- TG: I was reading that there was a big deal because they opened three parks; Pecan Grove, Oak Grove and something else.
- RW: Oh, I don't know. Well we played our games in Jackson. Some of them were in Jackson.
- TG: That might be it. That was one of them. Pecan Grove or something was what they called it.
- RW: Let's see, where else did we play? In Williston, we played where ever.
- TG: Here's a good one. Did your superior solicit contributions and suggestion, like for safety, you know safety suggestions that you ....
- RW: We were rewarded. I won a couple of safety slogans, monetarily, you know for like a safety slogan. We had a safety slogan contest, we had a security slogan contest. We got umbrellas, we got all kinds of safety awards. It doesn't have to be a significant amount of money to make somebody feel good about what they do. It made a difference.
- TG: You just answered my second question. Did you win any awards for safety?
- RW: I sure did.
- TG: When your dad was working out here, did he carpool?
- RW: Oh, that was an absolute must. I did too. I even went right regime because that was part of how I hired in into that regime of the carpool.
- TG: The carpool? And the reasoning behind that was because the parking was limited out here? Or just that ....
- RW: No. It was just a standard. It was just, well you know. I guess you just got to think about the day, the time period. People didn't waste gasoline and drive all the way out here when somebody else was gonna. That would just be unheard of. You just didn't do that. You were about to be a little abnormal if you just didn't ride with anybody. You were just ....
- TG: Gotcha.
- RW: Oh, I remember those days, so I rode in a carpool.
- TG: Rode in the carpool. Did you ride in your dad's carpool or did you find people that were in your Area?

RW: No. 'Cause I worked in reactors and he was, like I said, he was a shift worker for all of those years and I definitely didn't want shift work.

TG: Right.

RW: I always managed to be the Day Relief Operator, the Pool Operator. I always had a day job.

TG: you were talking about Jesse?

RW: Roberson.

TG: And what was "C" shift.

RW: "C" shift. We had a four shift rotation, A, B, C, D. 8-4, 4-12, and 12-8. And there were four shifts, A, B, C, D. And they assigned her to "C" shift. I'll never forget it.

TG: So they were overlapping, 12 to, what? Tell me again?

RW: 8-4, 4-12, and 12-8.

TG: Okay. Okay. Is there anything that stands out in your mind as the greatest accomplishment at the plant during its history?

RW: That the contributions that all the men and women did out here helped to end the Cold War. That's it. That's it in a nutshell.

TG: Right.

RW: Most people would probably agree with that.

TG: Yeah. They did, the people that I've interviewed. How do you feel about Nuclear Energy?

RW: Oh, it's fascinating and I think we've just, there's so much more to learn. I think just for the fusion and there's a lot of smart people out here still and a lot of them have passed on, but we still have a few, especially in our Laboratory that I worked with when they were in reactors. They are extremely smart. The people like that will help us for the future at will.

TG: So you see Nuclear Energy as gonna be in our future.

RW: It is in our future. I mean, whether you want it to be or not is kinda instilled; 'cause at this point it is.

TG: This is an odd question. Who do you most identify with? The Plant itself, the contractor, the Government, or the mission?

RW: Who do I most ....

TG: Do you feel like you're ....

RW: Who wrote that question?

TG: I know. Not me. I did not write that.

RW: Who wrote that; who do I ....? You know, think about that question. Let's just be realistic about that question. Who do I most identify with? I mean, hello?

TG: Right, as department, do you feel like you're working for the Government, or I don't know, that's a silly question. Skip it.

RW: Well, no, because it all has to do with the relative time. And it does. It's a time-relative question and that would be .....

## SIDE TWO

RW: Those men back in that day was they absolutely were serious and passionate about their work. They had great ethics, great ethics that we don't have today. That is definitely gone. Not for everybody; but as a standard, it is not the same. That's what I was saying. It's not the same today.

TG: Okay. Is that your closing remark? Or is there anything else you'd like to add? All right, then we'll officially conclude the interview.

RW: Okay.

**END OF INTERVIEW**