

**U.S. Department of Energy
Savannah River Operations Office**



**Savannah River Site
Future Use Project Report
Stakeholder Recommendations for
SRS Land and Facilities
January 1996**


**SAVANNAH RIVER SITE
FUTURE USE PROJECT REPORT**

Stakeholder-Preferred Recommendations for SRS Land and Facilities

Final

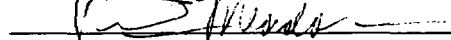
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Don Druelle, Future Use Project Leader

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ADC & Reviewing Official



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Table of Contents

Executive Summary	i
1.0 Overview of the Savannah River Site Future Use Project	1
1.1 Introduction and Objectives	1
1.2 Stakeholder Recommendations for Future Uses	1
1.3 Process To Identify Future Use Options	3
1.3.1 SRS Future Use Project Public Participation Plan	4
1.3.2 Public Meetings and Feedback	5
1.3.3 Other Stakeholder Groups	6
2.0 Stakeholder Preferences For Future Use	7
2.1 SRS Citizens Advisory Board Recommendation	7
2.2 Summary of Citizens for Environmental Justice Recommendation	10
2.3 SRS Land Use Technical Committee's Future Use Recommendations	10
2.4 Savannah River Operations Office Recommendations	13
2.5 Public Comments	17
3.0 References	18
Appendix A Summary of Stakeholder Comments for Potential Future Uses	
Appendix B Citizens Advisory Board Vision Document	
Appendix C Citizens for Environmental Justice Recommendations	
Appendix D SRS Land Use Technical Committee Recommendations	
Appendix E SRS Future Use Project Team	
Appendix F Organizations	
Appendix G Summary of Public Meetings	
Appendix H Relevant Maps From the SRS Land-Use Baseline Report	
Appendix I Responsiveness Summary	

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Executive Summary

For nearly 40 years, the Department of Energy and its predecessor agencies produced nuclear materials for the nation's defense programs at the Savannah River Site. Today, the focus of the Department has shifted to waste management and environmental remediation. Decisions and planning for managing these activities will depend on the future use of the land and facilities at SRS. This document summarizes the findings of the SRS Future Use Project and provides recommendations to the Department of Energy to aid in those future decisions.

In January 1994, DOE directed each site to develop stakeholder-preferred future use options by the end of 1995. The Savannah River Operations Office initiated the SRS Future Use Project in the spring of 1994. Because the future use of SRS will affect a wide diversity of stakeholders, a variety of public involvement approaches was used to reach them.

In the initial SRS Future Use Project public meetings, stakeholders expressed a preference that the report be a summary of the comments received as many individuals wanted the opportunity to provide input into the process independently. While there was no general consensus reached, several common themes emerged during the Future Use Project. These themes, recognized by the Savannah River Future Use Project Team as recommendations, are summarized in the following vision, and are listed as recommendations below.

Vision

The Savannah River Site should remain a national asset. It must be maintained and improved to meet governmental needs for both its historical defense capabilities and new nuclear and non-nuclear missions, and support commercial industrial initiatives that enhance the local and national economy. Of equal importance, as the first and most diverse National Environmental Research Park, the site must sustain and expand its internationally recognized ecological and environmental restoration research and maintain and improve its natural environment. These two interrelated concepts will ensure that new missions, industrial activities, remediation, research, educational programs and recreational opportunities are pursued in harmony.

Recommendations

- *SRS boundaries should remain unchanged, and the land should remain under the ownership of the federal government, consistent with the site's designation as the first National Environmental Research Park.*
- *Residential uses of SRS land should be prohibited.*
- *If DOE or the federal government should ever decide to sell any of the SRS land, then DOE shall seek legislation to permit former landowners (as of 1950-52) and/or their descendants to have the first option to buy back the land they once owned.*
- *All SRS land should be available for multiple use, except for residential use, (e.g., industry, ecological research, natural resource management, research and technology demonstration, recreation, and public education) wherever appropriate and non-conflicting.*

- *Some of the land should continue to be available for nuclear and non-nuclear industrial uses, and commercial industrialization should be pursued.*
- *Industrial and environmental research and technology development and transfer should be expanded.*
- *Natural resource management should be pursued wherever possible with biodiversity being the primary goal.*
- *Recreational opportunities should be increased as appropriate.*
- *Future use planning should consider the full range of worker, public, and environmental risks, benefits, and costs associated with remediation.*

These stakeholder-preferred recommendations and map will be considered by the Department throughout future planning and decision-making activities as it weighs mission needs, technical capabilities, legal requirements, and funding.

1.0 Overview of the Savannah River Site Future Use Project

1.1 Introduction and Objectives

In January 1994, the Department of Energy (DOE) initiated a complex-wide process to seek internal and external stakeholders' recommendations on the future uses of the land and facilities at each of the DOE sites. Each field office was to obtain its stakeholder-preferred future use recommendations independently using methodologies suited best to its stakeholders. *Forging the Missing Link: A Resource Document for Identifying Future Use Options* provided guidance for the process.

The purpose of this *SRS Future Use Project Report* is to summarize Savannah River Site (SRS) stakeholder-preferred future use recommendations, to explain the process used to obtain those recommendations, and to provide these recommendations for the Department to use in its decision-making activities. These stakeholder-preferred recommendations will be considered by the Department as it weighs ongoing and future mission needs, technical capabilities, legal requirements, and funding throughout future planning and decision-making activities. These activities include strategic planning, comprehensive planning, siting new facilities, decommissioning surplus facilities, environmental research, and remediation decision-making. All planning and future use decisions will require additional public input and these recommendations will change as missions and requirements evolve.

1.2 Stakeholder Recommendations for Future Uses

In the initial SRS Future Use Project public meetings, stakeholders expressed a preference that the report be a summary of the

comments received, as many individuals wanted the opportunity to provide input into the process independently. With few exceptions the comments fit several common themes. These themes, constituting the recommendations, and a brief summary of stakeholder comments are shown below.

- *SRS boundaries should remain unchanged, and the land should remain under the ownership of the federal government, consistent with the site's designation as the first National Environmental Research Park.*

Comments addressed concerns ranging from maintaining federal ownership within existing boundaries to returning land to counties or private individuals. Most participating stakeholders expressed a desire to keep the existing SRS boundaries intact for security and safety concerns. Many consider SRS to be a national asset and were concerned about future national needs for the land. Others expressed a concern that if this land were sold or given away, the government could never acquire this land again. In addition, many wanted SRS to continue its environmental research and recognized a need to isolate the site for this purpose, consistent with its current designation as a National Environmental Research Park (NERP). As a NERP, SRS is a field laboratory, dedicated to ecological research with studies of environmental impacts of site operations and public education. The Department is supporting Congressional legislation that would formalize the Atomic Energy Commission's designation of the site as the first NERP. The Department also has an ongoing effort to encourage private operation of many site facilities. These activities are currently performed through lease agreements. The SRS Citizens

Advisory Board (CAB) also commented that the fair market value of the land is less than estimated cost of remediation.

- *Residential uses of SRS land should be prohibited.*

Although suggestions were made to reserve land for prisons or shelters for homeless families and individuals, most did not advocate general residential use. Current and proposed future missions for the site preclude any residential use. Previous comments addressing keeping the site boundaries intact also apply to this section.

- *If DOE or the federal government should ever decide to sell any of the SRS land, then DOE shall seek legislation to permit former landowners (as of 1950-52) and/or their descendants to have the first option to buy back the land they once owned.*

Several former landowners expressed an interest in having their land returned to them. Many have strong ties to the land as some of the families had lived on this land for two or three centuries before 1951. They requested the return of the land they once owned either for personal use or to profit from any future economic development. These citizens believed they had done their patriotic duty in the 1950s but wanted the opportunity to buy their formerly owned land if the Department ever decided to sell this land. Most former landowners who participated suggested that they be given the right of first opportunity to buy this land if it is ever to be sold. However, under current regulations, the federal government cannot give or sell excess property preferentially. All surplus property, including land, must be excessed to the General Services Administration which

has specific requirements for disposition of this excessed property.

- *All SRS land should be available for multiple use, except for residential use, (e.g., industry, ecological research, natural resource management, research and technology demonstration, recreation, and public education) wherever appropriate and non-conflicting.*

Comments on multiple land uses ranged from industrial, recreational, ecological/natural resource management to no use. Since its inception, SRS has accommodated multiple uses on most of its land area. Many stakeholders are interested in continuing, if not expanding, this multiple use concept. Various members of the public mentioned the site's status as the first National Environmental Research Park and expressed a desire to continue or expand the opportunities that designation offers including co-locating industrial, ecological, resource management, and recreational activities within limitations of health, safety, and security.

Some of the land should continue to be available for nuclear and non-nuclear industrial uses, and commercial industrialization should be pursued.

Comments on industrial uses for the site ranged from seeking new nuclear and non-nuclear missions (private and government); continuing new missions; increasing industrial and environmental research, development, and technology transfer to completing current missions and closing the site. Some wanted current operations terminated and the site permanently closed, but DOE is required to continue ongoing defense and environmental management missions to

ensure national security and safe handling of the legacy of defense production. In an effort to offset the economic impact of declining defense activities, DOE and its contractor, with community involvement and support, is actively pursuing industrial diversification and privatization both on and off site.

- *Industrial and environmental research and technology development and transfer should be expanded.*

Comments included using the site for broad research and development applications such as nuclear, non-nuclear, light industrial, waste, storage and treatment, bioremediation, aquaculture, forest products, anti-matter energy sources, transportation, recycling, medical, and renewable energy. In addition, many comments addressed the site's status as a National Environmental Research Park where contaminated sites could be used in the development and demonstration of technology and where long-term environmental studies are secure from outside interference.

- *Natural resource management should be pursued wherever possible with biodiversity being the primary goal.*

Comments ranged from expanding current forest management activities to introducing indigenous species to allow natural restoration, to assuring no loss of wetlands.

- *Recreational opportunities should be increased as appropriate.*

Predominant preference of stakeholder participants was to expand current recreational uses (hunting and walking) and allow additional recreational activities as deemed appropriate. These include

fishing, biking, bird watching, bird hunting, boating, camping, canoeing, photography, off-the-road driving, etc.

- *Future use planning should consider the full range of worker, public, and environmental risks, benefits, and costs associated with remediation.*

Commenters expressed a broad range of concerns related to the level of risk, benefits, and costs which should be evaluated before decisions are made. Concerns addressed both onsite and offsite potential impacts. Most expressed the desire that the health and safety of workers, the public and the environment be the primary consideration in planning the future of SRS. However, they also advocated increased consideration of risks, benefits, and costs associated with future site activities. This was particularly true where future remediation activities were concerned. In addition, many endorsed continuing and expanding ongoing studies of ecological and human health.

1.3 Process To Identify Future Use Options

From the beginning, the SRS Future Use Project Team sought stakeholder input on the processes to be used in obtaining and reporting their input. (See Appendix E for a list of the team members.) Based on that input, SRS used a variety of public participation activities to share information and obtain stakeholder-preferred future use recommendations. These activities included public meetings, presentations to civic and community organizations, briefings for elected officials, and working with interested citizen groups as shown in Appendix F, *Organizations*. A prepared script was used to ensure consistency in presentation of information to all stakeholders.

Throughout the process, many forms of information were made available for interested stakeholders. Some information was mailed to all interested stakeholders; other information was available to those who requested it; and specific contacts were named to provide answers to any questions. A database of the names and addresses of interested stakeholders was created, eventually numbering more than 300. Types of information mailed to all interested stakeholders included meeting notes from all public meetings, meeting notices for upcoming meetings, and the *SRS Future Use Project Public Participation Plan*. In addition, other documents including the *Savannah River Operations Office Strategic Plan* and the *Land Use Baseline Report* were mailed to individuals upon request. A folder of information about the Future Use Project was also available at public meetings and was also mailed to anyone who had general questions about the Future Use Project. The folder included a list of related documents available; fact sheets about key SRS activities; and the names, addresses, and phone numbers of contacts for additional information. A toll-free telephone number was made available to facilitate the process with stakeholders.

1.3.1 SRS Future Use Project Public Participation Plan

As the initial step in developing this report, the Future Use Project's first public meeting focused on the development of a public participation plan. At that meeting, a workshop held in Aiken in September 1994, citizens discussed what process(es) should be used to identify stakeholder-preferred future use options and what type(s) of public participation approaches would best meet their needs. Also, stakeholders were provided a copy of the *Draft Land Use*

Baseline Report for review and comment and to provide education on current site uses.

Those who attended that meeting suggested that SRS staff provide a "strawman" of the public participation planning process, based on the input received from the workshop. Some believed that the SRS Citizens Advisory Board (CAB) should be the primary focus for stakeholder involvement so that a consensus of stakeholder-preferred future use recommendations could be developed. Others wanted an open forum in which they could provide their individual preferences directly to DOE. Many suggested that regulatory agencies' involvement, i.e., South Carolina Department of Health and Environmental Control (SCDHEC) and Environmental Protection Agency (EPA), was critical for the success of this project.

In January 1995, a draft public participation plan for the project was sent to interested individuals and groups for comment. The draft plan contained a strategy that included public meetings or workshops and a survey of community leaders. At the Augusta public meeting in February 1995, held to collect comments on the draft plan, questions were raised about the use of surveys as a technique. As a result of these comments, the survey was dropped from the process. The public participation plan for the Future Use Project was finalized and mailed to interested stakeholders.

Also at the February meeting, concerns were raised that DOE had not reached the economically disadvantaged communities and people of color in the past and needed to focus its efforts to involve these stakeholders. While the draft *SRS Future Use Public Participation Plan* reflected a commitment to reach those communities, additional efforts were made to include those

interested communities by identifying and contacting organizations which had not previously expressed interest or attended a Future Use Project meeting.

1.3.2 Public Meetings and Feedback

During the Future Use Project process, six public meetings, as shown in Figure 1, were held in South Carolina and Georgia. (See Appendix G for complete summaries for each public meeting.)

Numerous organizations were invited to co-host these public meetings. After the first meeting, all meetings were co-sponsored by the Department and the SRS CAB Subcommittee on Risk Management and Future Use. The second meeting, held in North Augusta, was also sponsored by the Savannah River Regional Diversification Initiative. Co-sponsorship streamlined the process; lowered costs; assured that all parties shared information; reduced the burden on stakeholders; and provided stakeholder groups the opportunity to take a more active, visible role.

At the November 1994 meeting, held in North Augusta, the *Draft Land Use Baseline Report* was presented to stakeholders for information, review, and comment. This report was developed to provide a simple and easy-to-read narrative and map display of information related to current SRS land uses. The *Savannah River Operations Office Strategic Plan* was also presented. The *Strategic Plan*, developed by the DOE employee stakeholders, describes DOE missions and outlines the employees' vision of future programs and activities, interactions with regional partners, and commitment to worker and public safety. Six business lines—Industrial Competitiveness, Energy Resources, Science and Technology, National Security, Environmental Quality, and Infrastructure—are integral to the plan

and were discussed in the context of future use.

Also at this November meeting, participants "brainstormed" ideas on possible future uses for the land and facilities at SRS. Various groups suggested many industrial and/or commercial uses and encouraged the Department to have an open process.

Additional public meetings were held in Barnwell, and Beaufort, South Carolina, and Augusta, and Savannah, Georgia, to accept comments on the public participation plan and solicit recommendations for stakeholder-preferred future uses.

During the spring and summer of 1995, several presentations about the Future Use Project were given to civic clubs and community organizations including the Savannah River Regional Diversification Initiative, Lions' Clubs, Ellenton Reunion, Augusta Sierra Club, Aiken Chapter of the NAACP, and African-American representatives and other citizen groups. (See Appendix F for complete list of organizations.) A prepared script was used at these meetings so that all participants in the Future Use Project process would receive the same information. These groups were interested in the Future Use Project, but other than the former landowners at the Ellenton Reunion and the Citizens for Environmental Justice, these civic clubs and groups did not formally express any additional recommendations for the Future Use Project. Many attendees of the Ellenton Reunion expressed the desire they should have first right of refusal to buy land formerly owned, if the land was proposed for sale. Offers were made to brief elected officials, and on request, a briefing was given to a staff member for U. S. Representative Charles Norwood (R-GA).

Date	Location	Purpose
September 19, 1994	Aiken, SC	Discuss the public participation process
November 1, 1994	North Augusta, SC	Review the <i>DOE-SR Strategic Plan</i> and <i>Land-Use Baseline Report</i>
February 2, 1995	Augusta, GA	Solicit comments on the draft Future Use Public Participation Plan
April 11, 1995	Barnwell, SC	Solicit recommendations for future uses
May 3, 1995	Beaufort, SC	Solicit recommendations for future uses
May 4, 1995	Savannah, GA	Solicit recommendations for future uses

Figure 1-Future Use Project Public Meetings

1.3.3 Other Stakeholder Groups

The SRS Citizens Advisory Board (CAB) formed the Subcommittee on Risk Management and Future Use in June 1994 in response to the Department's Future Use Project initiative. This subcommittee, composed of CAB members and other stakeholders, met on a regular basis to develop their recommendation for the full CAB. At its September 1995 meeting the full CAB unanimously approved a recommendation to DOE. (See Section 2.1.1, *SRS Citizens Advisory Board Recommendation* and Appendix B, *Citizens Advisory Board Recommendation*.)

In response to stakeholder comments and the Department's environmental justice policy, specific attention was given to the economically disadvantaged communities surrounding SRS. A briefing was given to the Aiken Chapter of the National Association for the Advancement of Colored People (NAACP) to determine their level of interest in the Future Use Project. In addition, a Future Use Project team member also met with representatives of several African-American communities to determine the level

of interest in this project from residents in the Augusta, Georgia, region.

The Department of Energy also held a public meeting in Savannah in May targeting minority groups. The meeting date, time, place, and advertising were coordinated with Citizens for Environmental Justice, a minority-focused community group in Savannah, Georgia. In addition, the Future Use Project was the topic for discussion at a workshop sponsored by Citizens for Environmental Justice held in September. The summary of recommendations from this group can be found in Section 2.1.2, *Summary of Citizens for Environmental Justice Recommendations* and the full list of recommendations can be found in Appendix C, *Citizens for Environmental Justice Recommendations*.

A group of site employees, the Land Use Technical Committee, also provided their input into the Future Use Project. These internal stakeholders are 23 senior technical experts from all the major site organizations (Savannah River Ecology Laboratory, Savannah River Forest Station, Westinghouse Savannah River Company, etc.) representing all major program areas. A summary of their recommendations is shown

in Section 2.1.3, *Summary of SRS Land Use Technical Committee Recommendations* and additional information is in Appendix D, *SRS Land Use Technical Committee Recommendations*.

2.0 Stakeholder Preferences For Future Use

This section provides a summary of recommendations from the SRS Citizens Advisory Board, Citizens for Environmental Justice, the SRS Land Use Technical Committee, and comments received at public meetings and by the mail by interested stakeholders. The additional information about these recommendations can be found in the appendices. These recommendations are shown here in no particular order of importance and all comments were considered equally.

2.1 SRS Citizens Advisory Board Recommendation

The recommendation and the Vision, a supplemental document, are shown in Appendix B, *Citizens Advisory Board Recommendation*. The map, shown on the following page is part of the recommendation passed by the Citizens Advisory Board in September 1995.

- (1) SRS boundaries shall remain unchanged and the land shall remain under the ownership of the federal government; national security shall not be compromised. Private use of the land will be implemented by lease agreements.
 - Unforeseen national needs may occur
 - Fair market value of the land is less than estimated cost of remediation
- (2) Multiple uses (excluding residential) shall be considered for individual SRS zones. Land use planning shall be directed toward subdivision of the site into nuclear (defense and commercial), non-nuclear, and environmentally protected sectors. Industrial development may only be located in defined industrial zones.
 - Currently many land areas have several non-conflicting uses
 - Small areas can be dedicated to specific use
 - Examples of concurrent multiple uses include environmental remediation research, ecological research, recreational, ecological preserves, and education and research areas
- (3) Residential uses of SRS land are to be prohibited.
 - Liability concerns and public perceptions of risk would make it difficult to market SRS land
 - Residential development is not consistent with meeting goal of unforeseen national needs
- (4) Future use planning shall consider the full range of worker, public and environmental risks, benefits and costs.
 - Risks, costs, and resulting benefits must be studied before decisions are made
 - Risks inherent in remediation must be considered (Example: transportation)
 - Public wants to see appreciable benefits and risk reduction for costs of remediation
 - Studies of human and ecological health must continue
- (5) Commercial industrialization of industrial zones (about 1/3 of the land) shall be actively pursued. Within

- industrial zones the land is available for multiple use and non-conflicting multiple uses may continue after a site is industrialized.
- To ensure viability of local region, additional industrialization is needed
 - Opportunity to demonstrate how well industry can be integrated with environmental park
 - Future industrial siting should consider use of adjacent land and incorporate an appropriate buffer
 - Industrial development should be encouraged
 - Industrial sites include current industrial uses and groundwater plumes and 1000-foot buffer
 - Industrial cleanup standards should be applied to industrial areas
- (6) Research and technology demonstration activities shall be actively pursued.
- SRS was first NERP, as such it is a major center for ecological and radioecological research
 - Areas of contamination can provide opportunities for field testing of new cleanup technologies
 - Opportunities for public education on industrial/ecological interactions should be expanded
- Land use controls and security systems are important to researchers
 - SRS should continue a strong technology transfer program
- (7) Natural resource management activities in non-nuclear and non-industrial zones shall actively pursue biodiversity.
- Biological diversity shall be encouraged on SRS lands with special emphasis on non-industrial areas.
- (8) Increased recreational opportunities shall be actively promoted (with appropriate controls and/or restrictions).
- Current recreational activities can and should be expanded
 - Other recreational activities should be considered with appropriate restrictions
- (9) Should the federal government decide to sell any of the SRS land, then former landowners (as of 1950-52) and/or their descendants shall have first option to buy back their formerly owned land for uses consistent with land use zones and appropriate standards.

2.2 Summary of Citizens for Environmental Justice Recommendation

The complete recommendation can be found Appendix C, *Citizens for Environmental Justice Recommendation*.

Overall Summary

It was strongly urged and reiterated that the Savannah River Site's land be used for a cemetery only, because of the level of contamination it should and could not be used for any other reasons.

Overall Recommendations

- It was suggested that the land never be used for inhabitation by stakeholders.
- Only trained personnel should be allowed to work and inhabit the land.
- Continued research on the site was also recommended.

Community Perspective

Overall, the community exhibited distrust with the whole idea of any future use of land masses that are so thoroughly contaminated with all major categories of highly radioactive nuclear waste along with tons of contaminated equipment, supplies, and clothing. There was agreement that the site should be cleaned up to the highest possible standard that technology will accommodate. The development of newer, more efficient, and more scientifically sound technology was encouraged.

Scientific Recommendations

- Initiate biological research that use microorganisms to breakdown nuclear radioactive waste that in the process reduces the level of radioactivity.

- Incorporate pollution prevention into all clean-up activities to stop further nuclear contamination.

2.3 SRS Land Use Technical Committee's Future Use Recommendations

These recommendations provide the conceptual design of the future use of the Savannah River Site, as envisioned by the internal stakeholders represented by the site's Land Use Technical Committee (LUTC). These recommendations can serve as a guide for program planning, facility siting, and waste site remediation. Both the opportunities and the limitations of SRS land and existing facilities, as well as regional economic development goals, have been considered in arriving at recommended primary future use and ancillary activities. While many future "uses" are envisioned for the site, a "primary use" has been recommended to meet the requirements of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA). Compatible land-use activities also were listed to illustrate that the "multiple land use" concept should continue to be employed at SRS. The LUTC recommends that the primary future use be industrial and that primary supporting activities be consistent with the site's designation as a National Environmental Research Park (NERP).

These recommendations were compiled by the LUTC, which is comprised of 23 senior technical experts from all major site organizations who supply in-depth technical land-use technical analysis to site management regarding project siting, land-use conflict resolution and planning, and CERCLA and RCRA compliance.

Recommendation One - Continue federal ownership, with industrial uses as primary

The LUTC proposes that the site remain under federal control and that industrial uses continue as in the past, with emphasis on stabilization activities of surplus materials and facilities. However, the percentages of land used for particular activities may change (current percentages are 15 percent developed and 83 percent undeveloped). Except for inquiries from former site residents, there appears to be no public demand for SRS land. Although contaminated areas and waste sites do not present an immediate threat to public and environmental health, the contamination is dispersed across much of the site, thus rendering most areas of the site incompatible with public transference. Additionally, regulators have indicated they would oppose any move to release land that had not been cleaned up to residential standards. SRS has demonstrated that many diverse activities can coexist. Eliminating federal ownership would significantly affect these relationships and eliminate some of them altogether. Also, the number, time frame, complexity, and costs of required studies would be major impediments to an SRS real estate turnover.

Recommendation Two - Increase environmental/geological research

SRS leads the DOE complex in many areas: established as the first NERP in 1972; known as a leader in environmental remediation technologies; and seen as a treasure trove of cultural information. The unique research conducted by the Savannah River Forest Station (SRFS) and the reputations of the Savannah River Ecology Laboratory (SREL), and Savannah River Technology Center, and the Savannah River Archaeological Research Program (SRARP) contribute to the viability of potential future uses for SRS.

Researchers have indicated that foundation, university, and government funding support would be forthcoming with a more stabilized planning base. The research and technology application also could expand to unexploited areas of study, such as algaculture, aquaculture, and medicine—and could broaden current programs in

- bioremediation
- forest products
- the fate and effects of contaminants in the environment
- archaeology and cultural anthropology

Recommendation Three - Designate no area as residential

A number of reasons preclude "residential" designation for SRS. First is contamination. While the most dangerous contamination is contained and is not a health hazard, remediation cannot be accomplished in some site areas—mostly water bodies—with today's technology. While most site land is free of contamination, future residences could be located near water bodies, which may present a risk, albeit, remote, to full-time residents. For protection, each water body would have to be fenced and patrolled, and such restrictions would create an unacceptable, checkerboard pattern of land use. Also, many research projects, technology demonstrations, meteorological towers, and monitoring devices would have to be relocated or eliminated. Finally, federal liability has not been determined. With controlled access, the government can be reasonably assured that the public and site employees will not be exposed to undue risks. With unrestricted public access, however, government liability would need to be determined. Thus, the government should maintain ownership responsibility and ultimate oversight of SRS.

Recommendation Four - Consider remediation risks and costs

Because of SRS's mix of contamination and the constraints surrounding remediation program budgets, there are limits on how much of the site can reasonably be remediated to regulation-acceptable levels. Therefore, efforts should concentrate on containment and monitoring to protect public health and the environment and on the cleanup of areas that may limit future land-use activities.

Recommendation Five - Maintain/increase natural resource management

Natural resource management activities play a significant role at SRS. Increases in these activities could enhance other future uses. For example, using the present acreage of forested lands and the concept of multiple-use management, additional opportunities can be created for recreation, education, and research. According to the Water Branch of Georgia's Environmental Protection Division, very little assimilative capacity is left in the Savannah River because of waste dumping by industries and municipalities. Consequently, keeping large areas such as SRS along the river in a relatively natural state would preserve the site's environmental integrity and promote offsite river development.

Recommendation Six - Maintain cultural resource compliance

The Savannah River Archaeological Research Program's primary purpose is to provide DOE-SR with recommendations about cultural resource management to ensure that DOE remains in compliance with federal laws and regulations. Because proper management of these resources depends on assessment of archaeological site significance, SRARP began a phased

approach to compliance in 1973 with a program of reconnaissance, watershed, and project-specific surveys and of excavation. This program, conducted in conjunction with major land users, helps identify and preserve SRS cultural resources. Cultural research provides background data for former landowners and Native American constituencies and assists local planners. Resource management activities should continue to focus on 1) research-based compliance to ensure proactive management and 2) dissemination of new knowledge.

Recommendation Seven - Increase compatible recreation

Several large tracts at SRS may be suitable for low-impact, controlled, outdoor recreational activities—such as hunting, hiking, bird watching, camping, and bicycling—without impacting the site's industrial missions. Also, controlled access would enable other uses to continue unaffected by the increased recreational population.

Recommendation Eight - Increase public education

Public education activities could be greatly expanded without jeopardizing industrial missions. Such expansion, which would meld well with concurrent uses, has received considerable support, and various task groups have been exploring the feasibility of establishing a museum/education/interpretive center on the site. The LUTC endorses this concept.

Recommendation Nine - Establish a land-use decision process

DOE land- and future-use planning is changing. New directives call for an increase in planning, with greater input into the decision-making process. One approach

would be to expand the Land-Use Steering Committee—which consists of WSRC senior managers—into a sitewide land-use advisory committee of experts from each major land-use organization. This group would

- advise the DOE-SR site manager about current land uses
- assist in planning other land uses or expanding current uses
- provide expert judgment should land-use conflicts arise

While important for future-use planning, the establishment of use and activity zones was not considered in the LUTC report. Development of planning zones for compatible uses and activities requires a large, time-intensive, concerted effort. The LUTC has resources that can provide active support for development of such a concept. Establishment of a decision hierarchy based on use-compatibility criteria and adherence to the multiple-use concept would strengthen the land-use decision process. The LUTC also strongly endorses establishment of use-compatibility criteria and would provide a lead technical role in such an endeavor.

2.4 Savannah River Operations Office Recommendations

The Department of Energy employees at the Savannah River Site (collectively known as the Savannah River Operations Office, or DOE-SR) have the responsibility for directing and overseeing all Departmental activities at SRS. As part of their ongoing efforts to establish constantly improving, high-quality operations at the site and to support continued viability of surrounding communities in an era of reduced federal budgets and decreasing defense missions, the DOE-SR employees created a strategic plan that sets forth their vision and hopes for the future of the site. The *SR Strategic Plan*, published in September 1994, promotes a vision of the

Savannah River Site as the Department's site of choice for all ongoing and potential DOE missions. To make this vision a reality, the *Strategic Plan* sets several goals as shown below.

- Using the vast scientific and technological assets and expertise at SRS to increase the Nation's global competitiveness and through partnerships with industry, promote economic growth, technology transfer, and creation of high-wage jobs, particularly at the local and regional levels.
- Using the site's core competencies in nuclear energy, national security, and environmental programs to develop new, clean, renewable energy sources and pursue and acquire new missions such as the International Thermonuclear Experimental Reactor, becoming an internationally recognized research center for future energy technologies.
- Sharing assets and expertise through educational outreach programs to help establish the United States as the world leader in science, mathematics, and engineering.
- Playing a key role in meeting DOE's national security requirements and supporting DOE's transition from weapons production to other critical missions, such as stabilization and disposition of nuclear materials, nonproliferation and nontraditional missions.
- Becoming the top-performing DOE site in achieving environmental management excellence by expanding and improving ongoing programs and interactions with regulators and the public to identify, prioritize, and mitigate risks posed by SRS facilities and activities to human health and the environment.

- Maintaining an infrastructure of physical and intellectual assets that is capable of supporting existing and potential new missions in accordance with regulatory and industry standards; preserving, in pristine condition, certain environmental assets with unique ecological biodiversities; and pursuing research initiatives for all these assets on the local, national, and international level.

In addition to the future uses represented in these general goals, there is an overarching future use that both accommodates and supports all of these goals—the site's designation as the country's first National Environmental Research Park.

The Atomic Energy Commission, DOE's predecessor agency, established the NERP concept in 1972 to ensure that the impacts of industrial activities on the natural environment of the sites in the nuclear weapons complex are monitored, analyzed,

minimized to the extent practicable, and remediated when necessary. Indeed, research on the interrelationships between the environment and industry has been a hallmark of the site since it was established and constitutes one of the site's most significant legacies.

To preserve this national treasure and ensure the site's long-term commitment to continuing these studies, DOE-SR supports Congressional legislation to formalize the NERP designation in law. The legislative designation would permit a wide variety of activities including industrial research and development in specific areas and environmental research, natural resource management, public education and outreach, and technical training across the site. The Proposed National Environmental Research Park map shows the various areas and possible future uses under the proposed NERP legislation.

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2.5 Public Comments

Throughout the Future Use Project process, stakeholders provided comments to the Future Use Project Team by a variety of methods. Most of the comments came from the public meetings; other comments came from the mail or by telephone.

As discussed previously, six public meetings were held in various locations throughout the Future Use Project process. At the Aiken meeting, comments were solicited on the methodology which should be used to reach interested stakeholders. At the North Augusta public meeting, participants reviewed the *DOE-SR Strategic Plan* and the *Land Use Baseline Report*. Many stakeholders who attended this meeting also suggested various types of industrial uses for the land. Solicitations for specific future use recommendations were made at the Barnwell, Beaufort, and Savannah meetings. Since the majority of the participants at the Barnwell meeting were hunters, various types of hunting activities were suggested. At the Beaufort meeting, most stakeholders were former residents of the land and expressed an interest in the return of their property. At the

Savannah meeting, only one member of the public attended the meeting whose interest was the present state of the water quality for the Savannah River.

In the *Draft Public Participation Plan* a "strawman" survey was included to be used if the survey method was adopted. As stated earlier, the survey was dropped from the process. However, some people believed that the draft plan included an actual survey to be completed and mailed their comments to the Department by completing this "strawman" survey. Apparently a copy of this survey was sent to many hunting organizations because the vast majority of the surveys sent in were from hunters requesting additional land to be available for various types of hunting. Comments were also received on the two drafts of this report. These comments and responses can be found in Appendix H, *Comments on Draft Future Use Project Report with SRS Responses*.

A brief summary of comments is shown in Section 1.2, *Stakeholder Recommendations for Future Use*. A more comprehensive list of comments is shown in Appendix A, *Responsiveness Summary*.

3.0 References

- Vision* document, the Savannah River Site Citizens Advisory Board, January 1996
- Citizens For Environmental Justice Recommendations*, Citizens for Environmental Justice, September, 1995
- SRS' Land Use Technical Committee's Future Use Report*, Westinghouse Savannah River Company, WSRC-RP-95-886, November 1995
- Environmental Assessment for the Natural Resource Management Activities at the Savannah River Site*, U. S. Department of Energy, Savannah River Operations Office, DOE/EA-0826, July, 1993.
- Forging the Missing Link*, Final Draft, U.S. Department of Energy, September 2, 1994.
- Fueling a Competitive Economy*, Strategic Plan, U. S. Department of Energy , April, 1994.
- Letter, To Distribution, from Donald W. Pearman and Thomas P. Grumbly, Transmittal of Final Draft *Forging the Missing Link: A Resource for Identifying Future Use Options*, January 1994
- SRS FY 1995 Draft Site Development Plan*, Department of Energy, June 1995.
- Savannah River Site Future Use Project Public Participation Plan*, Savannah River Site, Revision 1, March 1995.
- SRS Land-Use Baseline Report*, Westinghouse Savannah River Company, September 1995.
- Savannah River Operations Office Strategic Plan*, U. S. Department of Energy, September 1994.
- WSRC Strategic Plan, Building a Secure Future*, Westinghouse Savannah River Company, 1994.

Appendix A Summary of Stakeholder Comments for Potential Future Uses

Below is a summary of public comments, from public meetings, written comments, and telephone calls. Many identical comments received have been consolidated. No attempt has been made to quantify the references to any one item. Also, this list is not prioritized in any way. These comments have been placed in land use categories to help the reader find specific comments. The "General Comments Section" was added for comments that did not fit a specific land use category.

Industrial/Commercial

- Commercial industrialization of industrial zones (about 1/3 of the land) shall be actively pursued. Within industrial zones the land is available for multiple use and non-conflicting multiple uses may continue after a site is industrialized.
 - To ensure viability of local region, additional industrialization is needed
 - Opportunity to demonstrate how well industry can be integrated with environmental park
 - Future industrial siting should consider use of adjacent land and incorporate an appropriate buffer
 - Industrial development should be encouraged
 - Industrial sites include current industrial uses and groundwater plumes and 1000-foot buffer
- Using the vast scientific and technological assets and expertise at SRS to increase the Nation's global competitiveness and through partnerships with industry, promote economic growth, technology transfer, and creation of high-wage jobs, particularly at the local and regional levels.
- Using the site's core competencies in nuclear energy, national security, and environmental programs to develop new, clean, renewable energy sources and pursue and acquire new missions such as the International Thermonuclear Experimental Reactor, becoming an internationally recognized research center for future energy technologies.
- Playing a key role in meeting DOE's national security requirements and supporting DOE's transition from weapons production to other critical missions, such as stabilization and disposition of nuclear materials, nonproliferation and nontraditional missions.
- Do not use as a tritium production facility!
- Build future business for the city. They need to clean up the waste before building the city.
- Keep the site as a industrial research park with a mix of nuclear and non-nuclear uses.
- Use the facilities to process fissile material from commercial fuels.
- Continue manufacturing with an environmental mix.
- Consider the medical use of isotopes, maybe from existing high-level waste.
- SRS could be used for energy production, possibly nuclear energy.
- SRS is an ideal area for developing nuclear industrial research.
- Warehousing
- High tech nuclear materials handling/disposal

Appendix A Summary of Stakeholders Comments for Potential Future Uses

- Continue industrial uses that support continuing DOE/DOD missions.
- Offices for support personnel
- Do not use it as a tritium production source.
- High tech, service industry
- Light manufacturing; emphasis on nuclear, forest products, and chemicals.
- Laundry, (service without need for much "walk by" traffic)
- "Anti-matter" research and development for an energy source for space exploration
- Low pollution, labor-intensive industry
- Waste management and environmental restoration research and development demonstration projects
- Consolidation of Defense Programs missions; test site for environmental restoration and waste management technologies
- Vehicle manufacture or assembly
- Waste incineration, vitrification
- Research to irrigate deserts, make gas and oil, distill water, treat garbage, recover metals
- Dismantling of weapons, plutonium storage, plutonium reactor
- Heavy/dirty/chemical & manufacturing industries
- Regional recycling center, for goods such as batteries, metal, paper, etc.
- Mixed waste storage, treatment, & advance waste minimization, technology development - also monitored retrievable storage center
- Heavy industry that takes advantage of existing infrastructure
- No industrial use
- Tritium is the best mission for SRS.
- SRS has a base economic development that should diversify with more plants like the John Deere plant in Grovetown.
- Keep the site operating as a regional research and storage facility.
- Keep the site open and active so that it will continue to be an asset, not a burden.
- Make the SRS the "hub" of U.S. nuclear industry.
- Need to improve facilities for water transport via the Savannah River and improve rail connections.
- Because of its isolation and dedicated workforce, we could bring industries to this area that other areas do not want; these industries could be managed effectively at SRS.
- We should commercialize storage and have entities pay the state and SRS for storage.
- There should not be industrial development on the site; research and development cleanup near site; related private development, e.g., plutonium-burning power reactor should be allowed.

Cultural and Archaeological

- Maintain cultural resource compliance
- Use the site for a cemetery.

Residential

- Residential uses of SRS land are to be prohibited.
- Designate no area as residential.
- The land should be developed as another homeless shelter site instead of always wanting to put shelters within the city limits and within residential districts. This area would serve as an opportune place for the shelter. Residential standards for clean-up.
- Clean back to residential standards. Research educational facility concentrating primarily on developing the technology for nuclear cleanup.
- Use for prisons for non-violent criminals.
- Vacation resort area
- The U. S. and Georgia-South Carolina have adequate residential lands - land has not become a premium for residential development.
- Residential development should be located a safe distance from industrial & commercial facilities.
- Residential area should only be on the periphery.
- There should be no residential use; leave off-site to the market.
- The land should be developed as another homeless shelter site.
- It should be a permanent position to prevent any type of life form on this land/site.

Agricultural

- Wood Farming
- Do not use the site for farming or cattle grazing

Recreational

- Increased recreational opportunities shall be actively promoted (with appropriate controls and/or restrictions).
 - Current recreational activities can and should be expanded
 - Other recreational activities should be considered with appropriate restrictions
- Use as a free recreational area for citizens of Savannah and South Carolina.
- Increase compatible recreation
- More diverse public hunting programs
- Walking trails
- Areas should be open for controlled public use.
- Fishing
- Boating
- Camping
- Hiking
- Bird watching
- Nature trails

- Horseback riding
- Savannah River waterfront recreation
- Canoeing
- Photography
- Motor Biking
- 4 wheeling
- Use of Par Pond and L Lake
- River accessed beaches
- Photography
- Do not use the site for social hunting.

Resource Management Areas

- Research and technology demonstration activities shall be actively pursued.
 - SRS was first NERP, as such it is a major center for ecological and radioecological research
 - Areas of contamination can provide opportunities for field testing of new cleanup technologies
 - Opportunities for public education on industrial/ecological interactions should be expanded
 - Land use controls and security systems are important to researchers
- SRS should continue a strong technology transfer program.
- Natural resource management activities in non-nuclear and non-industrial zones shall actively pursue biodiversity.
 - Biological diversity shall be encouraged on SRS lands with special emphasis on non-industrial areas.
- Since the land has a large percentile of forces and farm land, it should become a wildlife and environmental conservatory (Park).
- Use the site as a national environmental research park.
- Should be preserved as a safe site; environmental park.
- Maintain/increase natural resource management.
- Increase environmental/geological research.
- The site should continue to be one of the world's premier natural resource management areas co-located with integrated manufacturing to prove not only that these are not excludable functions, but also demonstrating that these two dissimilar activities can coexist with appropriate planning.
- Site should not hold environmental activities hostage to economic development hopes or plans.
- DOE should ensure that the conclusions of environmental research and findings from natural resource management are published in the casual press (newspapers, etc.) so the local general public can see what a jewel we have at SRS.
- No net wetland loss, continue habitat set-asides.
- Keep the site for ecological and environmental research and education.

- Retained open park land.
- National Wildlife Research Area
- Returned to long leaf pine ecosystem.
- Environmental conservation and research
- With the endangered species at SRS and set-asides for red-cockaded woodpeckers, we should develop a community education effort and re-introduce other endangered species back to SRS land.
- I see deer, turkeys, and other wildlife in my back yard; (her backyard faces SRS property), I would like to continue to see these wildlife and want my children and grandchildren to see them.
- More natural forest management; I am disappointed with the current forest management.
- The Ecology Lab does a tremendous amount of research and educational activities every year—continue that.

General

- SRS boundaries shall remain unchanged and the land shall remain under the ownership of the federal government; national security shall not be compromised.
 - Unforeseen national needs may occur
 - Fair market value of the land is less than estimated cost of remediation
- Multiple uses (excluding residential) shall be considered for individual SRS zones. Land use planning shall be directed toward subdivision of the site into nuclear (defense and commercial), non-nuclear, and environmentally protected sectors. Industrial development may only be located in defined industrial zones.
 - Currently many land areas have several non-conflicting uses
 - Small areas can be dedicated to specific use
 - Examples of concurrent multiple uses include environmental remediation research, ecological research, recreational, ecological preserves, and education and research areas
- Future use planning shall consider the full range of worker, public and environmental risks, benefits and costs.
 - Risks, costs, and resulting benefits must be studied before decisions are made
 - Risks inherent in remediation must be considered (Example: transportation)
 - Public wants to see appreciable benefits and risk reduction for costs of remediation
- Should the federal government decide to sell any of the SRS land, then former landowners (as of 1950-52) and/or their descendants shall have first option to buy back their formerly owned land for uses consistent with land use zones and appropriate standards.
- Sharing assets and expertise through educational outreach programs to help establish the United States as the world leader in science, mathematics, and engineering.
- Becoming the top-performing DOE site in achieving environmental management excellence by expanding and improving ongoing programs and interactions with regulators and the public to identify, prioritize, and mitigate risks posed by SRS facilities and activities to human health and the environment.

Appendix A Summary of Stakeholders Comments for Potential Future Uses

- Maintaining an infrastructure of physical and intellectual assets that is capable of supporting existing and potential new missions in accordance with regulatory and industry standards; preserving, in pristine condition, certain environmental assets with unique ecological biodiversities; and pursuing research initiatives for all these assets on the local, national, and international level.
- Make the Savannah River Site become as safe as humanly possible. If not, don't use this area for social hunting, etc. This area is not SAFE for human life as it is now.
- It should be cleaned up to the same standards to which government subjects businesses.
- The use of the land should hinge on the degree the responsible agencies can get it clean. A land "half-cleaned" so to say could leave the "watchdog agency" open to a law suit, the originators of the problem will find an escape route. First priority is cleaning -- the land.
- It should be left alone and preserved. Yes, they should cleanup to a safe standard.
- Remediation then turn to research reservation.
- There should be mixture of uses: 1) light industrial 2) reserved SRS/water contamination/remediation area 3) residential site cleaned to residential environmental standards 4) recreational sites cleaned up per applicable standards.
- DuPont and Westinghouse should clean up the Savannah River Site and should not be a cost left for taxpayers to absorb.
- For the next 20-30 years, the site should not be used for anything but cleanup. After cleanup, the property needs to be used for park, recreation purposes or non-polluting, non-radioactive business purposes.
- How do you clean the site to the levels at which they received it and what do you do with waste, where do you take it? Clean-up to residential standards.
- Environmentally controlled to safe guard for the future of our kids. Discontinue all dumping.
- It is rather difficult to determine this future usage of the land. However, it should be a permanent position to prevent any type of life form on the land/site.
- 1) Area for future testing of chemicals keep isolated. 2) grave site space is needed 3) clean up should be a cautions procedure in eradicating the area. Factors are of natural causes: weather, wind, rain, dry spells.
- Clean-up and leave it until a later date then decide to do whatever it is used as necessary.
- Continue federal ownership, with industrial uses as primary.
- Consider remediation risks and costs.
- Increase public education.
- Establish a land-use decision process.
- Industrial cleanup standards should be applied to industrial areas.
- Studies of human and ecological health must continue.
- Significant levels of contamination are located at specific area on this site; breaking apart the site, or opening it up to unrestricted use, could lead to the premature movement of radionuclides; the longer the site remains intact, possibly more than one century, the safer it will be for unrestricted use.

- SRS is a national asset ; unrestricted use should not be permitted until after its national security mission has been completed.
- Keep separate the issues of national security and environmental remediation; national security should not be a reason to permit environmental contamination, but neither should ER regulations be allowed to affect national security interests.
- Let's open our site for more observance and participation of the beauty of God's earth, but let's not let down our security; we must all take great efforts to safeguard and keep intact the environment and God's bountiful nature as it is.
- Shut SRS down and clean it up.
- Please return all wastes to where it was generated or where it came from.
- Do not use undeveloped land for new development -- use existing industrial sites and leave buffer zone as pristine.
- Offer the land back to the counties.
- Keep future land uses flexible.
- Maintain the site as a unit for potential future federal government purposes.
- Maintain a buffer zone.
- Keep the land for multiple uses.
- Maintain nuclear weapons expertise and safe handling of nuclear materials plus selected commercialization.
- Maintain 300 square miles, nuclear waste handling (saltstone, DWPF), multi-purpose reactor, tritium process, some industry in leased lands - show that industry & environment can live together.
- Isolate permanently high risk areas.
- Cleanup of site and turn over as much as possible to private owners and make use of remainder for public use.
- The level of remediation should be proportional to the use that the given part of the site will play; cost, of course, makes a significant difference; I do disagree with current remediation plans; that is, remediation to an unrestricted use basis (e.g., residential use); site remediation should use the following prioritization scheme; this scheme assumes that the government will maintain the site for the next 25 years and for the 21st century:
 - locations presenting imminent risk to the workers and public should be remediated to a level sufficient for safe controlled use as is proposed
 - locations presenting significant long term risk to the public, under from the controlled use, should be remediated as a second priority
 - third priority should be given to locations that provide risk to the site workers or others using the site; this risk should be evaluated and mitigated, where possible, by specific controls, to levels of remediation to minimize land use concerns
 - fourth priority should be given to remediating the outer zone of the site if required to minimal controls
 - lastly, if money is plentiful, remediate the outer zone of the site to an unrestricted level
- Improve facilities for water transport via Savannah River, improve rail connections.
- Return the land for former residents.

Appendix A Summary of Stakeholders Comments for Potential Future Uses

- As a former resident of Ellenton with roots in Dunbarton, I do not wish to take the land back; I would like to visit the areas where my family lived for many generations; I do not feel SRS is a place where I would want to go back to retake the land.
- I am against giving the land to counties; the cities and counties depend on DOE's money in lieu of taxes; this loss of revenue for our local governments would be devastating; privatization would help these local governments.
- No one should get hurt from the contamination at SRS.
- One criteria for decision makers should be risk; to avoid risk exposure, the site should be kept intact until all cleanup is completed; there should be a priority system developed where there would be priorities for the next 5-10 years, 10-25 years, and 25-100 years.
- Recognize that most hazardous areas are a small percentage of the entire site; there is a tremendous amount of land that is uncontaminated.
- We want to see recommendations, not just a report.
- We should look at future use in the long term, not just the present administration; it is clear that this administration wants to dispose of plutonium; this may not be true in future administrations.
- There are but two ways to get public involvement: the ballot box or elected officials; don't call these public meetings "public" input; they are only for special interest groups, as is the CAB.
- Cost is a factor in remediation decisions.
- Cost of remediation does (and should) make a difference; unrestricted access to the entire site would be a ridiculous goal, and "complete" decontamination should not be a requirement for access to any particular area; suggested guidelines include: for controlled areas, ALARA with emphasis on "reasonably"; for uncontrolled areas, 50% above background; for water table, etc., normal unrestricted assumption giving dosages equivalent to 10% of background.
- SRS is (a) an important part of our nation's defense establishment, (b) a major contributor to scientific and technical progress, and (c) a good neighbor in the area.
- There should be a fusion reactor on the central east side of the site for power production and nuclear waste production; there should be heavy industry on the lower east side, a large technology park near New Ellenton, light industry and residential area from Augusta to Aiken on highway, and improved residential area from Williston to Barnwell with a major technology center associated with the University of South Carolina or Clemson; Charleston and Savannah should grow toward the site in support of industry and education complex; this vision needs an area planning or zoning committee or combined chamber of commerce for effective implementation.
- Maintain federal government ownership with management of SRS forests.
- Cleanup the site to the degree necessary to preclude groundwater contamination problems offsite; cost must be a factor.
- Site should be cleaned up to the highest possible standard that technology will accommodate; the development of newer, more efficient, and more scientifically sound technology is encouraged.
- Initiate biological research that use microorganisms to breakdown nuclear radioactive waste that in the process reduces the level of radioactivity.
- Incorporate pollution prevention into all cleanup activities to stop further nuclear contamination.

Appendix B Citizens Advisory Board Vision Document

Appendix B is the Vision document which supports the Savannah River Site Citizens Advisory Board recommendation on future use for the site. The recommendation was passed unanimously at the September 1995 Board meeting and this Vision document, also passed unanimously, was approved at the January 1996 Board meeting.

January 23, 1996

VISION

FUTURE LAND USE - SAVANNAH RIVER SITE

This Vision document has been a working paper of the Risk Management and Future Use Subcommittee of the Savannah River Site Citizens Advisory Board throughout the discussions on future use in 1995. It formed the basis for the Citizens Advisory Board Recommendation Number 8 which was approved by the Citizens Advisory Board on September 26, 1995. Minor changes have been made in this document to make it consistent with modifications made during Citizens Advisory Board discussion on this recommendation prior to its approval. This version of the Vision document (dated January 23, 1996) is the final version and supersedes all previous drafts. This version of the Vision was approved by the Citizens Advisory Board on January 23, 1996.

VISION

The Savannah River Site Citizens Advisory Board Risk Management and Future Use Subcommittee have the following vision for the site:

The Savannah River Site will remain intact, under federal ownership and will become a 21st century role model of the mutually supportive coexistence of advanced industrial and commercial developments, futuristic nuclear enterprises, and an environmental research park. The public will become more knowledgeable on nuclear, industrial, and environmental issues as a result of educational and recreational opportunities at the Savannah River Site which are integrated with the continuing wildlife and natural resources management programs. Privatization of some of the Savannah River Site government-owned facilities will be successfully accomplished through leasing facilities. All stakeholders will work cooperatively to further improve the site. The Savannah River Site will become a vibrant part of the economic health of the Central Savannah River Area.

TRANSFORMATION FROM 1995 TO 2025

The transformation will take place by identification and active pursuit of new governmental missions and private industrial and commercial ventures for the Savannah River Site. Below are two lists of suggestions of possible industrial uses of the site to be considered in future plans for the site, one for possible nuclear uses and one for non-nuclear uses. These are merely lists of possible missions gathered from several sources; the Citizens Advisory Board may not have endorsed any particular mission.

Possible Nuclear Missions (Defense And Commercial)

- Construction and operation of a tritium production and/or processing facility (or facilities) (for example, multi-purpose reactor or accelerator)
- Construction and operation of a prototype fusion power reactor (International Thermonuclear Experimental Reactor)
- Development and operation of a medical radioisotope production facility
- Purification and/or fabrication of plutonium-238 for thermo-electric generators
- Development of a nuclear power park (for example, multiple reactors producing power for commercial purposes)
- Stabilization, dilution, temporary storage, and preparation for disposal of fissile materials
- Demonstration of advanced nuclear power systems
- Demonstration of mixed waste destruction, stabilization, and disposal
- Development of a contaminated metal cleaning and recycle facility
- Development and demonstration of commercial uses for depleted uranium
- Others as identified

Possible Non-Nuclear Missions

- Construction of electro-mechanical facilities (robots, electric cars, decontamination equipment, et cetera)
- Development of hydrogen economy facilities (generation, pumping, separation, storage, hydrogen fueled vehicles, et cetera)
- Development of aluminum and aluminum-alloy parts manufacturing
- Development of additional methods for destruction, stabilization, and disposal of hazardous and sanitary wastes
- Development of fiber manufacture for textiles
- Performance of chemical analyses of environmental samples
- Development and field demonstration of alternative energy production methods (other than coal, oil, gas, hydroelectric or reactor-nuclear) to gain more independence from foreign oil
- Others as identified

In addition to the possible future industrial missions listed above, there are a variety of other missions that can build upon current activities. These possibilities include:

- Development of recreation facilities (hiking, biking, and horseback riding trails; picnic shelters; sanitary and drinking water facilities; boating facilities at Par Pond, et cetera)
- Construction and operation of a visitor and education center, possibly making use of a decommissioned nuclear production reactor
- Enhanced biodiversity and ecological research
- Enhanced controlled hunting (turkey, dove, quail, et cetera); sports fishing opportunities might be developed subject to appropriate restrictions to protect the public

BACKGROUND

This *Vision* reflects the goals for Savannah River Site land uses to satisfy the needs of the nation and the surrounding communities as established by the Citizens Advisory Board. Key participants in development and support of the future of Savannah River Site lands and facilities are the local communities, concerned state agencies, the Savannah River Operations Office of the Department of Energy, the Savannah River Site Management and Operating Contractor, the Savannah River Ecology Laboratory, the U. S. Forest Service, and other internal stakeholders. The Savannah River Site internal stakeholders have prepared a draft report which is consistent with the direction of this *Vision* document. In addition, much input was received from various external stakeholders. The majority of external stakeholder input from the Savannah River Site future use meetings conducted by Savannah River Operations Office of the Department of Energy in late 1994 and 1995 have been included in this document. (See the *Draft Savannah River Site Future Use Project Report*, a Department of Energy report issued in October.) Essential to the implementation of this *Vision* is effective land use planning for the location, integration, and utilization of new facilities with the infrastructure, existing facilities, environmental attributes, and cleanup goals in a cost-effective manner.

Savannah River Site is the United States leader in tritium technology, handling, processing, storing, and recycling and the national leader in high-level waste processing and encapsulation in glass. The site maintains a skilled and highly trained staff with expertise to handle major new missions for the nation. The site has many existing facilities (for example, metal fabrication, radionuclide and hazardous chemical analysis laboratories, heat transfer laboratories, metallurgical facilities, et cetera) that could be reconfigured for commercial enterprises. With its large infrastructure of roads, railroads, steam, sewer, cooling water, drinking water, phone system, et cetera, the site could support a new expanded industrial base.

The current waste management, tritium recycling, decommissioning, decontamination, and environmental remediation missions shall continue as well as the wildlife and natural resources management and environmental research programs. With diverse activities and fewer classified activities at Savannah River Site in the future, security arrangements may need to be reconfigured.

The 310-square miles of Savannah River Site should be zoned for land use planning and control, and such zoning should provide the basis for environmental remediation goals associated with the Federal Facility Agreement. Land use categories are defined by the Comprehensive Environmental Restoration, Compensation and Liability Act or Superfund. (See Appendix 1.) For the Savannah River Site land use planning, the following categories are appropriate:

Appendix B Citizens Advisory Board Recommendation

Citizens Advisory Board Land Uses	Citizens Advisory Board Definition	Comprehensive Environmental Restoration, Compensation and Liability Act Cleanup Standards
Industrial - Nuclear Industrial - Non-Nuclear	Areas of current and possible industrial development	Industrial
Forest and Wildlife Management Recreational Ecological Preserves Education and research	Environmental Protection: Areas to be left in natural state (with no industrial development), but can be used for multiple, concurrent uses.	Recreational with restrictions as described in sub-part 8 of Citizens Advisory Board Recommendation 8.

It is recognized that the industrial area, as shown on the map as part of the Citizens Advisory Board Recommendation Number 8, includes Carolina bays, threatened/endangered species, plant habitats, archaeological sites, et cetera. As part of siting a new activity within the industrial zone, the required environmental reviews should consider and protect these areas. [Environmental reviews include National Environmental Policy Act, Clean Water Act, Clean Air Act, Endangered Species Act, wetlands protection, Resource Conservation and Recovery Act, et cetera.]

RECOMMENDATION

To achieve the vision by 2025, the Savannah River Site Citizens Advisory Board makes the following nine-part recommendation for land use and cleanup goals. This recommendation was unanimously approved as Citizens Advisory Board Recommendation Number 8 on September 26, 1995.

- (1) *Savannah River Site boundaries shall remain unchanged and the land shall remain under the ownership of the federal government; national security shall not be compromised. Private use of the land will be implemented by lease agreement.*
 - Unforeseen national needs may occur
 - Fair market value of the land is less than estimated cost of remediation
- (2) *Multiple uses (excluding residential) shall be considered for individual Savannah River Site zones. Land use planning shall be directed toward subdivision of the site into nuclear (defense and commercial), non nuclear, and environmentally protected sectors. Industrial development may only be located in industrial zones.*
 - Currently many land areas have several non-conflicting uses
 - Small areas can be dedicated to specific use
 - Examples of concurrent multiple uses include remediation research, ecological research, recreational, ecological preserves, and education and research areas

- (3) *Residential uses of Savannah River Site are to be prohibited.*
- Liability concerns and public perceptions of risk would make it difficult to market Savannah River Site land
 - Residential development is not consistent with meeting the goals of unforeseen national needs
- (4) *Future use planning shall consider the full range of worker, public, and environmental risks, benefits, and costs.*
- Risks, costs, and resulting benefits must be studied before decisions are made
 - Risks inherent in remediation must be considered (Example: transportation)
 - Public wants to see appreciable benefits and risk reduction for costs of remediation
 - Studies of human and ecological health must continue
- (5) *Commercial industrialization of industrial areas (about 1/3 of the land) shall be actively pursued. Within industrial zones the land is available for multiple use and non-conflicting multiple uses may continue after a site is industrialized.*
- To ensure viability of local region, additional industrialization is needed
 - Opportunity to demonstrate how well industry can be integrated with environmental park
 - Future industrial siting should consider use of adjacent land and incorporate appropriate buffer
 - Industrial development should be encouraged
 - Industrial sites include industrial uses and groundwater plumes and 1000-foot buffer
 - Industrial cleanup standards should be applied to industrial areas
 - Areas of contamination can provide opportunities for field testing of new cleanup technologies
 - Opportunities for public education on industrial/ecological interactions should be expanded
 - Land use controls and security systems are important to researchers
 - Savannah River Site should continue a strong technology transfer program
- (6) *Research and technology demonstration activities shall be actively pursued.*
- Savannah River Site was first National Environmental Research Park, as such it is a major center for ecological and radioecological research
 - Areas of contamination can provide opportunities for field testing of new cleanup technologies
 - Opportunities for public education on industrial/ecological interactions should be expanded
 - Land use controls and security systems are important to researchers
 - Savannah River Site should continue a strong technology transfer program

Appendix B Citizens Advisory Board Recommendation

- (7) *Natural resource management activities in non-nuclear and non-industrial zones shall actively pursue biodiversity*
 - Biological diversity shall be encouraged on Savannah River Site lands with special emphasis on non-industrial areas.
- (8) *Increased recreational opportunities shall be actively promoted (with appropriate controls and/or restrictions).*
 - Current recreational activities can and should be expanded
 - Other recreational activities should be considered with appropriate restrictions
- (9) *Should the federal government decide to sell any of the Savannah River Site land, then former landowners (as of 1950-52) and/or their descendants shall have first option to buy back their formerly owned land for uses consistent with land use zones and appropriate standards.*

BACKUP INFORMATION

The following information is provided to explain each part of the recommendation in more detail. Each subpart of the recommendation is in the boxed areas shown below with an explanation following the box.

(1) *Savannah River Site boundaries shall remain unchanged and the land shall remain under the ownership of the federal government; national security shall not be compromised. Private use of the land will be implemented by lease agreement.*

- Unforeseen national needs may occur
- Fair market value of the land is less than estimated cost of remediation

The federal government must remain the owner of the current Savannah River Site land area for future, unforeseen national needs that might require such a land area; it would be difficult to obtain such a large land area today. The federal government also is liable for the cleanup required by environmental laws consistent with land use described in this document and the Citizens Advisory Board Recommendation Number 8.

(2) *Multiple uses (excluding residential) shall be considered for individual Savannah River Site zones. Land use planning shall be directed toward subdivision of the site into nuclear (defense and commercial), non nuclear, and environmentally protected sectors. Industrial development may only be located in industrial zones.*

- Currently many land areas have several non-conflicting uses
- Small areas can be dedicated to specific use
- Examples of concurrent multiple uses include remediation research, ecological research, recreational, ecological preserves, and education and research areas

Savannah River Site must be managed in such a way that the majority of the site land is available for an urgent national need if required in the future. The 310-square mile Savannah River Site is a multiple-use site now (1995) with many land areas having several different, non-conflicting uses with small areas dedicated to a specific use. This multiple use should continue. In the Recommendation Number 8 map, the primary use is shown for industrial areas, but other non-conflicting uses can be made in these industrial areas. For non-industrial areas, it is not always possible to distinguish between forest and wildlife management, recreational, ecological preserves, education, and research areas, as many of these uses occur simultaneously on the same area of land. Examples of concurrent, multiple uses include environmental remediation research, ecological research, and habitats for endangered species. Additional data exists in the *Savannah River Site Land Use Baseline Report*, June 1995. The Recommendation Number 8 map and this document should be used as a basis for site planning.

(3) *Residential uses of Savannah River Site are to be prohibited.*

- Liability concerns and public perceptions of risk would make it difficult to market Savannah River Site land
- Residential development is not consistent with meeting the goals of unforeseen national needs

(4) *Future use planning shall consider the full range of worker, public, and environmental risks, benefits, and costs.*

- Risks, costs, and resulting benefits must be studied before decisions are made
- Risks inherent in remediation must be considered (Example: transportation)
- Public wants to see appreciable benefits and risk reduction for costs of remediation
- Studies of human and ecological health must continue

(5) *Commercial industrialization of industrial areas (about 1/3 of the land) shall be actively pursued. Within industrial zones the land is available for multiple use and non-conflicting multiple uses may continue after a site is industrialized.*

- To ensure viability of local region, additional industrialization is needed
- Opportunity to demonstrate how well industry can be integrated with environmental park
- Future industrial siting should consider use of adjacent land and incorporate appropriate buffer
- Industrial development should be encouraged
- Industrial sites include industrial uses and groundwater plumes and 1000-foot buffer
- Industrial cleanup standards should be applied to industrial areas
- Areas of contamination can provide opportunities for field testing of new cleanup technologies
- Opportunities for public education on industrial/ecological interactions should be expanded
- Land use controls and security systems are important to researchers
- Savannah River Site should continue a strong technology transfer program

Industrial uses are further subdivided into current (1995) and possible industrial zones on the Recommendation Number 8 map. The site should continue to develop a strong technology transfer program that is the basis for new private industrial development. These industrial areas also include groundwater contamination plumes with a 1000-foot buffer that are an integral part of the Citizens Advisory Board Recommendation 2 of January 24, 1995. Monitoring the groundwater plume should continue and control activities should protect the public health. In industrial areas,

protection can be obtained by providing alternative sources of drinking water. Industrial cleanup standards should generally be applied to industrial areas.

The industrial zones are divided into nuclear and non-nuclear zones. Either government or private enterprise (under long-term leases) could establish new missions in these zones but each specific proposed site would undergo the specific site-use approval process and appropriate environmental reviews (National Environmental Policy Act, Clean Water Act, Clean Air Act, Endangered Species Act, wetlands protection, Resource Conservation and Recovery Act, et cetera) before final approval.

In general, the nuclear zone is near the center of the site and includes the existing nuclear facilities. The non-nuclear industrial zone is near A, M, B, D and TNX areas and along Highway 125 between Savannah River Site Roads 1 and 6. Within these zones, other activities could take place such as timber operations, wildlife management, environmental research, and field-related educational activities until a specific area is needed for industrial development. If any land is removed from an industrial zone through rezoning, then cleanup levels for contaminated areas must be re-evaluated.

The remaining portions of the land are designated for multiple use (that is, forest and wildlife management, recreational, ecological preserves, and education and research). These areas should be cleaned up to recreational standards with appropriate controls established on the use of the land.

As an example of an area that needs appropriate controls, some Savannah River Site lands have residual contamination from past releases from Savannah River Site facilities. In particular, there is cesium-137 contamination in many of the Savannah River Site waterways from releases in the 1960s. These are detectable, are above global background levels, are well mapped, and are being allowed to radioactively decay in place. (Cesium-137 has a 30-year half life.)

Besides cesium-137 there are other radionuclides detectable above global background levels in the Savannah River Site (that is, tritium, uranium, iodine-129, plutonium-238, plutonium-239, carbon-14, et cetera); but the same commitments on appropriate controls should apply.

Existing areas of contamination at Savannah River Site provide an opportunity for field testing of new cleanup technologies. This type of activity should be increased to develop more cost-effective technologies for cleanup throughout the United States. Savannah River Site, with its land area and technical staff, is an ideal location to perform these field tests.

There is currently a system in place to approve and coordinate specified land uses at Savannah River Site; this should continue as a method of appropriate controls of land use.

- (6) *Research and technology demonstration activities shall be actively pursued.*
- Savannah River Site was first National Environmental Research Park, as such it is a major center for ecological and radioecological research
 - Areas of contamination can provide opportunities for field testing of new cleanup technologies
 - Opportunities for public education on industrial/ecological interactions should be expanded
 - Land use controls and security systems are important to researchers
 - Savannah River Site should continue a strong technology transfer program

The primary land use in the Education and Research category is for student and public education, research on the structure and function of ecosystems, and the interaction of industrial facilities with the environment. Basically this can be done on any of the 310-square miles of the Savannah River Site on a non-interfering basis through specific site-use requests approved by Department of Energy. The ability to have a protected environmental research field site, because of land use control and security systems at Savannah River Site, is a very valuable attribute for researchers. Education and research facilities should be maintained and operated throughout the site by a variety of contractors.

Savannah River Site was the first National Environmental Research Park designated by the Department; is a major center of ecological research; and is the major field site for radioecological research in the United States. It is considered a national asset because it is uniquely suited for the demonstration of new environmental restoration technologies. These research and technology demonstrations should be actively pursued.

- (7) *Natural resource management activities in non-nuclear and non-industrial zones shall actively pursue biodiversity*
- Biological diversity shall be encouraged on Savannah River Site lands with special emphasis on non-industrial areas.

Presently Savannah River Site has about 90% of its land used for timber production, natural resource and wildlife management, and environmental research. This research includes studying thermal effects on aquatic organisms, studying the effects of coal power plants on the environment, studying the transfer of radionuclides through various environmental pathways, et cetera; these activities should continue and be increased. Opportunities for public education on these industrial/environmental interactions should be expanded.

Ecological preserves have been established and should continue to be protected to follow the evolution of natural ecosystems over time. Biodiversity should be encouraged with special emphasis on non-industrial areas. Limited use should be made of this area for education and research, as long as any man-made disturbance to the area is at an absolute minimum. If any waste sites exist in these areas and if any cleanup is required, it should be done with an absolute minimum impact on the environment. Department of Energy, with stakeholder input, shall identify the areas of major set-asides as ecological preserves.

(8) *Increased recreational opportunities shall be actively promoted (with appropriate controls and/or restrictions).*

- Current recreational activities can and should be expanded
- Other recreational activities should be considered with appropriate restrictions

The Savannah River Site lands can and should provide major opportunities for public recreation. Some recreational activities occur now (that is, deer and hog hunting), but this can and should be actively promoted so that local residents can benefit from such opportunities. Examples include turkey hunting; hiking, biking and horseback riding trails; fishing; boating, et cetera.

There should be appropriate restrictions on some recreational activities such as water skiing, swimming, et cetera.

(9) *Should the federal government decide to sell any of the Savannah River Site land, then former landowners (as of 1950-52) and/or their descendants shall have first option to buy back their formerly owned land for uses consistent with land use zones and appropriate standards.*

Due to the concern of former residents of the land where Savannah River Site is now located, the Citizens Advisory Board believes that this group of people should have the right of first refusal to buy their formerly owned land, if it should ever become available. Evaluation of the particular parcels of land and cleanup to Comprehensive Environmental Restoration, Compensation and Liability Act residential standards must be done by the federal government prior to the release of that land. However, the Citizens Advisory Board does not believe this land should be available for sale.

CONCLUSION

Thus, in the 21st century, the Savannah River Site will continue and strengthen its role as the premier national environmental research park with the addition of new major missions: meeting the government needs, developing industrial uses with private industry, stabilizing closed nuclear facilities, cleanup of environmental contamination, enhanced educational opportunities and ecological research and developing recreational opportunities. Careful planning, adequate resources, and determined execution will result in harmonization of these missions.

APPENDIX 1 TO THE VISION DOCUMENT

Land Use Categories, As Defined Under Comprehensive Environmental Restoration, Compensation and Liability Act Guidance Documents

Under current environmental guidance document, when deciding the appropriate technology for cleanup and the resulting costs, a risk assessment is done to determine the risks once a future land use is determined. The guidance includes the following definitions and guidance for various risks:

Residential — Residential exposure scenarios and assumptions should be used whenever there are or may be occupied residences on or adjacent to the site. Under this land use, residents are expected to be in frequent, repeated contact with contaminated media. The contamination may be on the site itself or may have migrated from it. The assumptions in this case account for daily exposure over the long term and generally result in the highest potential exposures and risk.

Commercial/Industrial — Under this type of land use, workers are exposed to contaminants within a commercial or industrial site. These scenarios apply to those individuals who work on or near the site. Under this land use, workers are expected to be routinely exposed to contaminated media. Exposure may be lower than that under the residential scenarios, because it is generally assumed that exposure is limited to 8 hours a day for 250 days per year.

Agricultural — These scenarios address exposures to people who live on the property (that is, farm family) and agricultural workers. Assumptions made for worker exposures under the industrial/commercial land use may not be applicable to agricultural workers due to differences in workday length, seasonal changes in work habits, and whether migrant workers are employed on the affected area. Finally, the farm families live in the area.

Recreational — This land use addressed exposures to people who spend a limited amount of time at or near the site while playing, fishing, hunting, hiking, or engaging in other outdoor activities. This includes what is often described as the "trespasser" or "site visitor" scenario. Because not all sites provide the same opportunities, recreational scenarios must be developed on a site-specific basis. Frequently, the community surrounding the site can be an excellent source of information regarding the current and potential recreational use of the site. The RPM/risk assessor is encouraged to consult with local groups to collect this type of information.

In the case of trespassers, current exposures are likely to be higher at inactive sites than at active sites because there is generally little supervision at abandoned facilities. At most active sites, security patrols and normal maintenance of barriers such as fences tend to limit (if not entirely prevent) trespassing. When modeling potential future exposures in the baseline risk assessment, however, fences should not be considered a deterrent to future site access.

Recreational exposure should account for hunting and fishing seasons where appropriate, but should not disregard local reports of species taken illegally. Other activities should also be scaled according to the amount of time they actually occur, for children and teenagers, the length of the school year can provide a helpful limit when evaluating the frequency and duration of certain outdoor exposures.



Department of Energy
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DEC 20 1995

Dr. Mildred McClain, Co-Chair
Savannah River Citizens Advisory Board
720 Maupas Avenue
Savannah, GA 31401

Mr. Bob Slay, Co-Chair
Savannah River Citizens Advisory Board
P.O. Box 192
Beech Island, SC 29842

Dear Dr. McClain and Mr. Slay:

SUBJECT: Citizens Advisory Board's (CAB's) Eighth Recommendation - Future Uses of Savannah River Site (SRS) (Your letter, 10-03-95)

Thank you for submitting your eighth recommendation to the Department of Energy (DOE) regarding the future uses of SRS. We agree with the substance of your recommendation. It is very similar to our own internal ideas of designating the SRS as a National Environmental Research Park (NERP) and to the many comments received during the SRS Future Use Project.

Your recommendation has been incorporated into the draft SRS Future Use Project Report, which is currently being revised to reflect your comments provided at the November 28, 1995, Board meeting. While we are in substantial agreement with the CAB's proposal, we take the following minor exceptions:

- Under the NERP proposal, Savannah River Operation Office's (SR's) intent is to limit industrial development to those areas currently being used for industrial purposes. This will not necessarily limit any future development of those areas, but will provide maximum flexibility for use of the land.
- As far as recreational opportunities are concerned, we have recently expanded the hunting opportunities in the Crackerneck portion of the site. While we will continue to review recreational proposals on a case-by-case basis, we believe it is prudent to take a conservative approach for the foreseeable future, rather than "actively promote" increased recreational activities at the site.
- SR also agrees with the intent of the ninth part of your recommendation, but in accordance with current laws and regulations, we have no mechanism to give first refusal to former property owners. In fact, those regulations specify a procedure for disposing of excess property.

These differences will be discussed in more detail in the report. It is our intent to discuss these with you prior to distributing another version of the report. This report, along with your recommendation, will be used for future planning and decision-making activities for this site.

Again, thank you for your timely and important recommendation.

Sincerely,

A handwritten signature in black ink, which appears to read "Mario P. Fiori", is written over a horizontal line.

Mario P. Fiori
Manager

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Appendix C Citizens for Environmental Justice Recommendations

The information provided in Appendix A is shown as it was given to DOE by the group, Citizens for Environmental Justice, as their recommendation for future land use. The Citizens for Environmental Justice came into being to help increase the level of participation of people of color in the work for a safe and clean environment. This group's main focus is in the African-American community, but works with all people who are struggling for environmental justice. This organization educates, organizes, and mobilizes the Black community to actively work in protecting human resources as well as water, air, and land resources.

These responses represent a synthesis of all the comments received. They do not reflect any order of priority.

How should the land be used at the Savannah River Site in the Future?

The overriding theme was that cleanup to industrial standards was the minimum standard to be applied as decisions are made.

- Do not use it for farming or cattle raising. It is unsafe even to wildlife. Use for a cemetery only.
- It should not be used for residential property.
- Store other waste material. Use it as a grave yard for the community after cleanup.
- Make the Savannah River Site become as safe as humanly possible. If not, don't use this area for social hunting, etc. This area is not SAFE for human life as it is now.
- It should be cleaned up to the same standards to which government subjects businesses.
- The use of the land should hinge on the degree the responsible agencies can get it clean. A land "half-cleaned" so to say could leave the "watchdog agency" open to a law suit, the originators of the problem will find an escape route. First priority is cleaning -- the land.
- Do not use as a tritium production facility!
- Clean back to residential standards. Research educational facility concentrating primarily on developing the technology for nuclear cleanup.
- It should be left alone and preserved. Yes, they should cleanup to a safe standard.
- Remediation then turn to research reservation.
- There should be mixture of uses: 1) light industrial 2) reserved SRS/water contamination/remediation area 3) residential site cleaned to residential environmental standards 4) recreational sites cleaned up per applicable standards.
- Use as a free recreational area for citizens of Savannah and South Carolina.

Appendix C Citizens for Environmental Justice Recommendations

- The land should be developed as another homeless shelter site instead of always wanting to put shelters within the city limits and within residential districts. This area would serve as an opportune place for the shelter. Residential standards for clean-up.
- Build future business for the city. They need to clean up the waste for the up build of the city.
- DuPont and Westinghouse should clean up the Savannah River Site and should not be a cost left for taxpayers to absorb.
- For the next 20-30 years, the site should not be used for anything but cleanup. After cleanup, the property needs to be used for park, recreation purposes or non-polluting, non-radioactive business purposes.
- How do you clean the site to the levels at which they received it and what do you do with waste, where do you take it? Clean-up to residential standards.
- Environmentally controlled to safe guard for the future of our kids. Discontinue all dumping.
- It is rather difficult to determine this future usage of the land. However, it should be a permanent position to prevent any type of life form on the land/site.
- Since the land has a large percentile of forces and farm land, it should become a wildlife and environmental conservatory (Park).
- Use the site as a national environmental research park.
- Clean-up and leave it until a later date then decide to do whatever it is used as necessary.
- Should be preserved as a safe site; environmental park.
- 1) Area for future testing of chemicals keep isolated. 2) grave site space is needed 3) clean up should be a cautions procedure in eradicating the area. Factors are of natural causes: weather, wind, rain, dry spells.

95% of the respondents stated there should be no cuts in the "clean-up" budget by Congress.

Addendum

"Charting a New Course" Community Conference, September 23, 1995

Overall Summary

It was strongly urged and reiterated that the Savannah River Site's land be used for a cemetery only, because of the level of contamination it should and could not be used for any other reasons.

Overall Recommendations

- It was suggested that the land never be used for inhabitation by stakeholders.
- Only trained personnel should be allowed to work and inhabit the land.
- Continued research on the site was also recommended.

Community Perspective

Overall, the community exhibited distrust with the whole idea of any future use of land masses that are so thoroughly contaminated with all major categories of highly radioactive nuclear waste along with tons of contaminated equipment, supplies, and clothing. There was agreement that the site should be cleaned up to the highest possible standard that technology will accommodate. The development of newer, more efficient, and more scientifically sound technology was encourage.

Scientific Recommendations

- Initiate biological research that use microorganisms to breakdown nuclear radioactive waste that in the process reduces the level of radioactivity.
- Incorporate pollution prevention into all clean-up activities to stop further nuclear contamination.

Citizens for Environmental Justice Stakeholder Survey

1. Do you think current zoning laws should be changed to prevent residential areas from being located near industries that pose a potential threat to health?
☐yes ☐no
2. Should industry be responsible for compensating residents?
☐yes ☐no
3. Should there be a citizens oversight board?
☐yes ☐no
4. Should Congress cut the budget for clean-up at the Savannah River Site?
☐yes ☐no
5. How should the land be used at Savannah River Site in the future?
☐yes ☐no

Appendix D SRS Land Use Technical Committee Recommendations

The Land Use Technical Committee is a group of 23 senior technical experts from all major site organizations. The recommendations shown below is quoted from their report of their recommendations verbatim. This group worked for over two years to develop these recommendations, using their site expertise.

Introduction And Overview

The U. S. Department of Energy (DOE) has requested that each of its sites prepare a report depicting stakeholder preferences for future use, given each site's unique characteristics. The purpose of this document is to provide the conceptual design of the future use of the Savannah River Site, as envisioned by the internal stakeholders represented by the site's Land Use Technical Committee (LUTC). The document will serve as a guide for program planning, facility siting, and waste site remediation. Both the opportunities and the limitations of SRS land and existing facilities, as well as regional economic development goals, have been considered in arriving at recommended primary future use and ancillary activities. While many future "uses" are envisioned for the site, a "primary use" has been recommended to meet the requirements of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA). Compatible land-use activities also were listed to illustrate that the "multiple land use" concept should continue to be employed at SRS. The LUTC recommends that the primary future use be industrial and that primary supporting activities be consistent with the site's designation as a National Environmental Research Park (NERP).

This report was compiled by the LUTC, which is comprised of 23 senior technical experts from all major site organizations who supply in-depth technical land-use technical analysis to site management regarding project siting, land-use conflict resolution and planning, and CERCLA and RCRA compliance.

The report's future use recommendations are expected to help DOE determine suitable activities that are compatible with primary use. The LUTC recommends that all site land remain under federal ownership, but notes that some land and facilities could be used by public or private sectors in a lease agreement with the federal government. Because many areas are suitable for multiple uses, the LUTC did not propose specific uses for specific areas; these will be decided via established policy and internal regulations.

Policy Guidance, Plans And DOE Orders

Possible future-use options at SRS will be subject to administrative constraints stemming from federal, state, and local laws, regulations, permits, and agreements, as well as DOE orders, policy, guidelines, directives, and mission plans. Under the National Environmental Policy Act (NEPA), RCRA, CERCLA, and other statutes, DOE must consider the ecological health and ultimate fate of its natural resources in land-use planning—and is liable for damages resulting from CERCLA releases of contaminants.

CERCLA is the driving force for most SRS remediation activities. The U. S. Environmental Protection Agency (EPA) has assumed under CERCLA that land will be become residential unless it is in areas where residential use is unreasonable. Consequently, it is implied that the cleanup standard for contaminated waste sites is residential, which assumes that a family would live on the land and obtain their drinking water from a well at the site, and that their children would play in and eat the dirt. From a land-use planning perspective, this is unrealistic and unreasonable for site having a continuing DOE-managed mission with stringent safety/security measures. EPA recently issued new guidance on land use, stating that the CERCLA baseline risk assessment "generally needs only to consider the reasonably anticipated land use." This supports the LUTC recommendation that the site's primary future land use remain industrial.

Primary Future Land Use

Industrial

The primary industrial future use for SRS relates to continuing missions related to stabilization and preparation for disposal of high- and low-level wastes, management of surplus nuclear materials, and support of the nation's nuclear weapons stockpile. In addition, related nonnuclear industrial missions would be able to utilize the site's unique infrastructure. The site is one of the few areas in the nation that can support future missions with a combination of extensive industrial production areas, existing infrastructure, and a substantial buffer zone from the public. In addition to nuclear uses, future compatible industrial uses could include commercial industrial development and technology demonstration.

Land-Use Activities Compatible With Industrial Use

The LUTC has carefully considered the following complementary activities that would support the site's primary mission:

- environmental and geological research (including continuation and expansion of NERP program)
- natural resource management
- cultural resource management
- recreation
- public education

LUTC Concept of Future Use of SRS — Multiple and Compatible Uses

LUTC future-use recommendations are based on multiple use, in which many compatible uses and activities can "occupy" or use the same space simultaneously. Multiple-use management focuses on optimizing the functions of the entire ecosystem.

SRS has informally used a classic ring—or "target"—approach to land-use planning, with the center ring being an industrial area and surrounding areas being security and/or safety buffers. This concepts locates within the inner ring all facilities that handle or process radioactive materials. Nuclear materials outside the ring ultimately would be decommissioned or relocated.

LUTC Recommendations For Future Uses Of SRS

Recommendation One - Continue federal ownership, with industrial uses as primary

It is proposed that the site remain under federal control and that industrial uses continue as in the past, with emphasis on stabilization activities of surplus materials and facilities. However, the percentages of land used for particular activities may change (current percentages are 15 percent developed and 83 percent undeveloped). Except for inquiries from former site residents, there appears to be no public demand for SRS land. Although contaminated areas and waste sites do not present an immediate threat to public and environmental health, the contamination is dispersed across much of the site, thus rendering most areas of the site incompatible with public transference. Additionally, regulators have indicated they would oppose any move to release land that had not been cleaned up to residential standards. SRS has demonstrated that many diverse activities can coexist. Eliminating federal ownership would significantly affect these relationships and eliminate some of them altogether. Also, the number, time frame, complexity, and costs of required studies would be major impediments to an SRS real estate turnover.

Recommendation Two - Increase environmental/geological research

SRS leads the DOE complex in many areas: established as the first NERP in 1972; known as a leader in environmental remediation technologies; and seen as a treasure trove of cultural information. The unique research conducted by the Savannah River Forest Station (SRFS) and the reputations of the Savannah River Ecology Laboratory (SREL), and Savannah River Technology Center, and the Savannah River Archaeological Research Program (SRARP) contribute to the viability of potential future uses for SRS. Researchers have indicated that foundation, university, and government funding support would be forthcoming with a more stabilized planning base. The research and technology application also could expand to unexploited areas of study, such as algaculture, aquaculture, and medicine—and could broaden current programs in

- bioremediation
- forest products
- the fate and effects of contaminants in the environment
- archaeology and cultural anthropology

Recommendation Three - Designate no area as residential

A number of reasons preclude "residential" designation for SRS. First is contamination. While the most dangerous contamination is contained and is not a health hazard, remediation cannot be accomplished in some site areas—mostly water bodies—with today's technology. While most site land is free of contamination, future residences could be located near water bodies, which may present a risk, albeit, remote, to full-time residents. For protection, each water body would have to be fenced and patrolled, and such restrictions would create an unacceptable, checkerboard pattern of land use. Also, many research projects, technology demonstrations, meteorological towers, and monitoring devices would have to be relocated or eliminated. Finally, federal liability has not been determined. With controlled access, the government can be reasonably assured that the public and site employees will not be exposed to undue risks. With unrestricted public access,

however, government liability would need to be determined. Thus, the government should maintain ownership responsibility and ultimate oversight of SRS.

Recommendation Four - Consider remediation risks and costs

Because of SRS's mix of contamination and the constraints surrounding remediation program budgets, there are limits on how much of the site can reasonably be remediated to regulation-acceptable levels. Therefore, efforts should concentrate on containment and monitoring to protect public health and the environment and on the cleanup of areas that may limit future land-use activities.

Recommendation Five - Maintain/increase natural resource management

Natural resource management activities play a significant role at SRS. Increases in these activities could enhance other future uses. For example, using the present acreage of forested lands and the concept of multiple-use management, additional opportunities can be created for recreation, education, and research. According to the Water Branch of Georgia's Environmental Protection Division, very little assimilative capacity is left in the Savannah River because of waste dumping by industries and municipalities. Consequently, keeping large areas such as SRS along the river in a relatively natural state would preserve the site's environmental integrity and promote offsite river development.

Recommendation Six - Maintain cultural resource compliance

The SRARP's primary purpose is to provide DOE-SR with recommendations about cultural resource management to ensure that DOE remains in compliance with federal laws and regulations. Because proper management of these resources depends on assessment of archaeological site significance, SRARP began a phased approach to compliance in 1973 with a program of reconnaissance, watershed, and project-specific surveys and of excavation. This program, conducted in conjunction with major land users, helps identify and preserve SRS cultural resources. Cultural research provides background data for former landowners and Native American constituencies and assists local planners. Resource management activities should continue to focus on 1) research-based compliance to ensure proactive management and 2) dissemination of new knowledge.

Recommendation Seven - Increase compatible recreation

Several large tracts at SRS may be suitable for low-impact, controlled, outdoor recreational activities—such as hunting, hiking, bird watching, camping, and bicycling—without impacting the site's industrial missions. Also, controlled access would enable other uses to continue unaffected by the increased recreational population.

Recommendation Eight - Increase public education

Public education activities could be greatly expanded without jeopardizing industrial missions. Such expansion, which would meld well with concurrent uses, has received considerable support, and various task groups have been exploring the feasibility of establishing a museum/education/interpretive center on the site. The LUTC endorses this concept.

Recommendation Nine - Establish a land-use decision process

DOE land- and future-use planning is changing. New directives call for an increase in planning, with greater input into the decision-making process. One approach would be to expand the Land-Use Steering Committee—which consists of WSRC senior managers—into a sitewide land-use advisory committee of experts from each major land-use organization. This group would

- advise the DOE-SR site manager about current land uses
- assist in planning other land uses or expanding current uses
- provide expert judgment should land-use conflicts arise

While important for future-use planning, the establishment of use and activity zones was not considered in this report. Development of planning zones for compatible uses and activities requires a large, time-intensive, concerted effort. The LUTC has resources that can provide active support for development of such a concept. Establishment of a decision hierarchy based on use-compatibility criteria and adherence to the multiple-use concept would strengthen the land-use decision process. The LUTC also strongly endorses establishment of use-compatibility criteria and would provide a lead technical role in such an endeavor.

Conclusion

In this report, the LUTC has used its cumulative knowledge to present an appraisal of future land use. While no one can predict the future, the LUTC has provided its best judgment on the utilization of site attributes that will most wisely use the physical and natural resources of SRS. The committee envisions expanded, dynamic site functions that meet the needs of the country and respond to regional concerns. From a land-use perspective, there is considerable capacity for expanding both the primary industrial use and the compatible supporting facilities. The committee believes that a site as unique as SRS can meet the needs of diverse interest groups.

EXECUTIVE SUMMARY

The Department of Energy has charged each site to prepare a future use report that depicts stakeholder preferences for future use, given each site's unique characteristics. The purpose of this document is to provide the conceptual design of the future use of the Savannah River Site including its existing facilities as envisioned by internal stakeholders represented by the Land Use Technical Committee (LUTC). The document is to serve as a guide for program planning, facility siting and remediation of waste sites. Both the opportunities and limitations of the land and existing facilities at the SRS, as well as regional economic development goals, have been considered in arriving at the recommended primary future use and ancillary activities. While there are many future "uses" envisioned for the site, a "primary use" (industrial) has been recommended to meet the requirements of Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA). Compatible land use activities were also listed to illustrate that the "multiple land use" concept could be employed at SRS. The LUTC recommends that the primary future use of the site be industrial with primary supporting activities being consistent with the site's designation as a National Environmental Research Park. [DOE Headquarters defines a NERP as a field laboratory set aside for conducting ecological research, studying environmental impacts of energy development and informing the public of environmental and land use options.]

The SRS Land Use Technical Committee has completed an analysis of the issue of future SRS use and has developed recommendations listed below. The background and justification for each recommendation begin on page 8. While it is envisioned that all land on the site will remain under federal control in support of planned or unforeseen future DOE missions, some of the land could be used by the public or private sector via special arrangements with the government.

RECOMMENDATIONS FOR FUTURE USE

Industrial Use

SRS boundaries should not change and the primary future land use should continue to be industrial, with multiple, concurrent supporting land use activities.

Environmental and Geological Research

Consistent with designation of the site as a National Environmental Research Park, research and related technology demonstration activities should be increased.

Residential Use

No area of the site should be designated as potential "residential" areas.

Consideration of Risks and Costs

Future use planning should consider the full range of risks and costs associated with remediation.

Resource Management

Natural resource management activities should be maintained/increased.

Cultural Resources

Cultural resource compliance activities should be maintained at current levels to ensure pro-active management.

Recreation

Recreation activities compatible with other site uses and activities should be increased.

Education

Public education activities should be significantly increased.

Land Use Decision Process

Additional mechanisms should be established to assist the DOE-SR Site Manager in the land use decision process.

SRS' LAND USE TECHNICAL COMMITTEE'S FUTURE USE REPORT

INTRODUCTION AND OVERVIEW

The purpose of this report is to provide technical guidance to site decision makers from "internal stakeholders" regarding the selection of a primary future use of SRS land and facilities. When the primary future use is decided by the Department of Energy (DOE) with input from stakeholders, remediation decisions can be made based on realistic future uses; "Superfund" and RCRA goals can be addressed; and future project siting and economic development goals will be enhanced. This report was compiled by the SRS Land Use Technical Committee (LUTC), which is comprised of 23 senior technical experts from all the major site organizations representing all major program areas. The LUTC was chartered to supply in-depth land use technical analysis to site management with regard to project siting, resolution of land use conflicts and land use planning. - as well as with Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA) compliance. If, for example, a contaminated area will be used for homes in the future, its clean-up goals may be very different than if it were to be paved for an industrial park.

This report also provides guidance regarding economic development. Linking the report to economic development is important for two reasons. First, to facilitate major economic development, the site must decide on a primary future land use. Second, many of the supporting future land use activities are in the economic development realm and cannot be implemented until future use decisions are made.

The report should be read in the context of other future use efforts, most notably the site Future Use Project Report and the future use recommendations being prepared by the SRS Citizens Advisory Board (CAB). DOE Headquarters has charged each site to prepare a future use report that depicts stakeholder preferences for future use, given each site's unique characteristics.

While the major goal of this report is to provide recommendations for future SRS land use, land use recommendations will also help DOE decide suitable activities which are compatible with and support the primary use. Both the opportunities and limitations of the land and facilities at SRS have been considered in arriving at the recommended primary future use and ancillary activities (e.g., the National Environmental Research Park program, education, etc.). While the Land Use Technical Committee recommends that all land on the site remain under federal ownership, some of the land could be used by the public or private sector in a lease arrangement with the federal government. Because many site areas are suitable for multiple uses, the LUTC did not propose specific areas for specific uses. Specific uses and activities for site areas will be decided via established site policy and internal regulatory processes for site use.

The Savannah River Site

The 198,000-acre site contains four "shut-down" nuclear production reactors, one reactor in "cold-standby", two chemical separations areas, a fuel and target fabrication facility, a heavy water extraction plant, a defense waste processing facility, a saltstone waste facility, waste management areas, and various supporting facilities. These facilities extend over approximately 17,000 acres. The remaining 181,000 acres is largely forested and is used as a safety and security buffer zone for the production areas. This buffer zone provides valuable habitat for plant and animal species native to South Carolina, a protected area to conduct ecological research, and a large land expanse for timber production. SRS provides high quality wetland and wildlife habitat within a surrounding matrix of private agricultural and timber land. Wildlife is abundant and several endangered species populations are increasing as a result of the work funded by DOE and performed by the Savannah River Ecology Laboratory (SREL) of the University of Georgia, Westinghouse Savannah River Company (WSRC), and Savannah River Forest Station (SRFS) of the U.S. Forest Service (USFS) with support from state and federal wildlife agencies. Controlled public hunting is conducted on over 90 percent of SRS for both recreation and herd control. Additionally, SRS is an important National Environmental Research Park - a unique outdoor laboratory where research is carried out to achieve national environmental goals.

SRS was constructed from 1950-1955 to support the U. S. nuclear weapons program. Production of nuclear materials (tritium, uranium, plutonium, and various other elements) in a safe and secure manner in support of our nation's defense was the primary mission of SRS. In support of this mission, the site designed, constructed, and operated a wide variety of industrial facilities to manufacture nuclear materials. The industrial processes utilized include heavy water production, alloying, extrusion, and machining of metal alloy fuel and targets; irradiation of materials in nuclear reactors; chemical separation of desirable isotopes using remote operation technology; and other chemical and mechanical processes to form products and manage wastes. This wide range of industrial processes was augmented by support facilities for research, development, administration, and infrastructure, and includes laboratories, power plants, water treatment plants, fire stations and office buildings.

The tritium recycling mission, modified by anticipated program changes, will continue at SRS. Tritium activities include recycling of the active stockpile and extraction of tritium from remaining irradiated targets. Also continuing are the missions of environmental restoration and waste management.

The 40+ years of rapid-pace nuclear production has taken its environmental toll. The WSRC Environmental Restoration Division estimates SRS environmental clean up ranges from \$4.7 to \$10.2 billion (depending on the chosen land use scenario). This does not include the "D & D" (Decontamination & Decommissioning) costs associated with 212 contaminated facilities. As traditional DOE production missions are terminated with the end of the Cold War, the site workforce is being significantly reduced. This has affected land use in many ways, such as re-alignment of infrastructure support, "privatization" of facilities, increased public access and possible expansion of the site's ecological research.

SRS has been a leader in the application of technology. Much of SRS' success in technology demonstration and the field application of research has come in the environmental arena. SRS scientists and engineers have been studying the effects of contamination since before construction began in 1950; and new methods of environmental remediation have been successfully field-tested at actual sites at SRS.

In 1972, the National Environmental Research Park (NERP) system was established by the Atomic Energy Commission to make available large areas of ecological variety for the purpose of environmental research. SRS was named the first NERP in 1972. Under this program, scientific investigators from universities and other research organizations use SRS as an outdoor laboratory to study the impact of man's activities on the environment. Specific DOE Headquarters' guidance defines a NERP as "a field laboratory set aside for conducting ecological research, studying environmental impacts of energy development and informing the public of environmental and land use options."

For any future use plan, SRS should concentrate on its strengths, such as the size of the land area, its NERP designation, and its history of successes in the demonstration of technologies. In this time of transition, SRS is working with industry, academia, and government and has been striving to be a leader and partner in developing and exchanging applied science and technology to support SRS missions, enhance industrial competitiveness, and serve public needs.

Policy Guidance, Plans and DOE Orders

Possible future use options at SRS will be subject to administrative constraints stemming from federal, state and local laws, regulations, permits, and agreements. In addition, Department Orders, policy, guidelines, directives, and mission plans could also affect future uses. Under the National Environmental Policy Act (NEPA), RCRA, CERCLA and other statutes, DOE must consider the ecological health and ultimate fate of its natural resources in its future land use planning. Those resources will be affected by waste management, environmental remediation, future missions and D&D activities aimed at alternative land use activities. DOE is liable for damages resulting from CERCLA releases of contaminants at SRS.

CERCLA is a driving force for most SRS remediation activities. The Environmental Protection Agency (EPA) has, in the past, assumed under CERCLA that land will become residential in the future unless it is in areas where residential land use is unreasonable. Consequently, this requirement implies that the clean-up standard for contaminated waste sites is residential. Residential standards assume that a family would live on the land, obtain their drinking water from a well dug at the site, and children would play in the dirt and eat it. In a land use planning sense,

Appendix D Land Use Technical Committee Recommendations

this scenario is unrealistic and unreasonable for sites with a continuing federal mission managed by DOE with stringent safety and security measures. To support this view, EPA recently issued new guidance on land use in the CERCLA Remedy Selection Process (OSWER Directive No. 9355.7-04). In this directive, EPA stated that the CERCLA baseline risk assessment "generally needs only to consider the reasonably anticipated future land use." This new guidance supports the Land Use Technical Committee's recommendation that the site's primary future land use remain industrial and that no residential uses be considered.

The DOE's environmental management policy has been developed in response to mandates from the U.S. Congress under the National Environmental Policy Act of 1969 (NEPA), to protect the ecosystem processes and achieve environmental quality. NEPA subsection 101(a) states that the Federal government shall "use all practical means and measures...to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans."

Lesser known but equally important statutes govern SRS land use. Acts such as the American Indian Religious Freedom Act, National Historic Preservation Act, and Archaeological and Historic Preservation Act may constrain site uses. These acts direct federal departments and agencies to evaluate their policies and procedures in order to determine appropriate changes necessary to protect and preserve Native American religious cultural rights and practices.

"Ecosystem Management" is a federal program to which DOE-SR ascribes. Ecosystem management has been defined a variety of ways. Principles common to most definitions include: (1) integration of ecological, economic, and social factors, (2) maintenance and restoration of healthy ecosystems, (3) enhancement of biodiversity, (4) restoration of the original ecosystems, (5) long range planning, (6) landscape scale planning, and (7) incorporation of the human component. In short, ecosystem management means integration of ecological, economic, and social factors in order to maintain and enhance the quality of the environment to best meet current and future needs.

DISCUSSION OF PRIMARY FUTURE LAND USE CATEGORY

Below is a discussion of the primary future land use category proposed by the LUTC. Narrative is provided in lieu of maps because much of the site could be used concurrently by compatible activities, and hence, is not readily subject to mapping. While planning is useful in siting new facilities, the actual decision to site specific uses is a function of the established SRS site use process involving all SRS organizations.

Industrial

The primary industrial future use for SRS relates to stabilization and preparation for disposal of high and low-level wastes, managing surplus nuclear materials and support of the nation's nuclear weapons stockpile. In addition, related non-nuclear industrial missions would be able to utilize the unique infrastructure developed over the past forty-five years. Nuclear missions include tritium production facilities, tritium recycle facilities, and possibly weapons fabrication, storage, and maintenance. With its existing tritium capability, SRS is uniquely capable of supporting virtually all aspects of nuclear weapons stockpile maintenance. The site is one of the few areas in the nation

that can support future missions with a combination of extensive industrial production areas, existing infrastructure, and a substantial buffer zone from the public. Other future uses involve alternative uses for the facilities that remain, and include metal-forming operations, storage of materials requiring high security, interim waste storage and technology development. Alternative land uses may include both commercial and governmental industrial activities. Some of the existing and potential future government missions for the SRS nuclear industrial areas are included in the following:

- 1) the stabilization of site nuclear material inventories, including the processing of fuels and plutonium residues;
- 2) the treatment of DOE spent fuels (including foreign fuels) and residues;
- 3) the de-militarization and storage of surplus plutonium pits with international surveillance and with potential interim immobilization as a vitrified form;
- 4) plutonium disposition preparation of disposable form or MOX (mixed oxide) fuel;
- 5) support of fusion research, including International Thermonuclear Experimental Reactor (ITER) fusion energy demonstration;
- 6) "blend-down" of surplus highly enriched uranium for commercial use, either as uranium or mixed plutonium/uranium fuel;
- 7) tritium production (accelerator or reactor technology) and recycling;
- 8) defense production (new pits);
- 9) commercial spent fuel management, potentially to include reprocessing;
- 10) regional energy park with siting of multiple commercial units and closed loop fuel with MOX fuels; and
- 11) decontamination/decommissioning and environmental restoration programs.

Besides governmental nuclear uses, future industrial uses of the site could also include commercial industrial development. While specific industrial endeavors are still being examined, general areas could include the following:

- 1) robotics technology development;
- 2) power generation;
- 3) state-of-the-art groundwater technologies development;
- 4) forest products development and production ;
- 5) aquaculture;
- 6) improved concrete production technology;
- 7) "washing" of contaminated soils; and
- 8) industrial metal works.

Also, technology demonstration would be compatible with industrial areas. Most technology demonstration projects are associated with industrial areas, cleaning up contamination in soils and water (surface and groundwater). SRS technologists have a solid national record of technology development and demonstration.

DISCUSSION OF LAND USE ACTIVITIES COMPATIBLE WITH INDUSTRIAL USE

The following activities are considered to be compatible with an industrial land use at SRS.

Environmental and Geological Research

Environmental and geologic research has been performed principally by SREL, Westinghouse's Savannah River Technology Center (SRTC), the SRFS and University of South Carolina's Institute of Archaeology and Anthropology Research Program. Scientists from other organizations have conducted studies in cooperation with these groups and/or under the auspices of the SRS NERP.

SRS facilities and their operation afford opportunities for conducting ecological research on interactions between industrial activities and the natural environment. Large portions of SRS are not directly affected by DOE operations (e.g., buffer and security areas). These areas are managed by the SRFS and are used for research purposes by the Forest Service and its 13 co-operating universities, the SREL, and Westinghouse Savannah River Company (WSRC). The unique configuration of the SRS, with laboratories and controlled field environments, allows scientists and engineers to take laboratory scale technologies into the field for evaluation and testing. SREL generates about 150 technical publications per year associated with the effects of site operations on ecosystems. The SRTC is the site's applied research and development laboratory. Examples of SRS research include remote radiological and non-radiological sensor technologies, robotics, and development of improved technologies for remediation of environmental contaminants.

Natural Resource Management

SRS contains extensive, widely distributed wetlands, most of which are associated with floodplains, Carolina bays, creeks, and impoundments. The southwestern boundary of SRS adjoins 17 miles of the Savannah River, which has a floodplain supporting an extensive swamp forest. The base floodplain of 37,128 acres is associated primarily with the Savannah River and five principal streams that drain the SRS. Nearly half the base floodplain is adjacent to the Savannah River. Many wetland communities occur within the floodplains, but others, such as Carolina bays, are isolated from river and stream interactions.

A diversified and abundant wildlife population including insects, fish, amphibians, reptiles, birds and mammals inhabit SRS. The site also serves as a refuge for the federally endangered red-cockaded woodpecker, short nosed sturgeon, wood stork, and smooth purple coneflower and the threatened American Bald Eagle. Scientists at SREL and the SRFS conduct research on these species. In addition to administering the threatened and endangered species program, the SRFS oversees timber management through its natural resources management program.

Cultural Resource Management

The cultural materials of previous occupants of the SRS are abundantly scattered throughout the site and are important to the national heritage and culture. The Savannah River Archaeological Research Program (SRARP) of the South Carolina Institute of Archaeology and Anthropology, University of South Carolina, began in 1973 with a "phased approach" with reconnaissance

surveys, general intensive watershed surveys, and data recovery (excavation). The SRARP has recorded more than 1,000 archaeological sites - the largest archaeological investigation in the region.

Recreation

SRS' visitors program offers site tours and recreational sites for non-exclusive use by area organizations. Controlled hunting for large game animals (such as deer and feral hogs) is allowed on SRS. For most of the site's existence, recreation by the public was considered to be too much of a safety and security risk, and therefore was not advocated. With this policy in place, the deer population grew from a few dozen in 1951 to 5,000 in the 1970s. As a result of the increased deer population and an increase in site work force automobile/deer accidents grew at an alarming rate. To control the rising numbers of deer and subsequently to reduce the number of deer/automobile accidents, public hunting was introduced on the SRS. WSRC conducts 14 controlled deer hunts annually which cover the entire site. Another hunt conducted at SRS is administered by South Carolina Department of Natural Resources and involves approximately 10,000 acres designated as the Crackerneck Game Management Area. Except for Crackerneck Game Management Area, all large game taken from SRS are tested for possible radionuclide contamination.

As hunting has grown from herd control to recreation, site organizations have slowly increased recreational activities. Recent mission changes have allowed recreational additions to include improved "wellness facilities," such as running tracks and walking trails. The SRFS Forest Manager is charged with planning and directing a visual and wellness facilities management program that includes planning, development, and maintenance of on-site wellness facilities and improvement of the visual qualities of SRS forest lands. At present, these facilities are only for the use of SRS employees.

Public Education

In 1994, 4,500 people visited SRS through WSRC's outreach program which responds to requesters' needs for information, tours, data and seminars. One hundred and fifty tours of SRS in 1994 had participation from schools, senior citizens groups, civic organizations, environmental groups and others.

SRS also has an active technical educational outreach program. This program uses hundreds of scientists and engineers who volunteer their time and talents judging science fairs, speaking to area schools during Engineers' Week and representing their universities at yearly college fairs. There are also programs for college and high school interns and teachers to work with SRS scientists and engineers on environmental, natural resource and engineering issues. SRS has designated land that is used for a regional Boy Scout Camporee. Hundreds of Boy Scouts from the surrounding area meet at SRS every two years for their camporee. Site personnel provide classes on ecology, environment, forest management, wildlife management, water resources and archaeology. There is also a proposal underway to establish a similar program for the Girl Scouts. The youth education program provides a "classroom" at SRS to study engineering, science and natural resources. Any local class can attend a particular session at SRS provided by the SRFS. Teachers and lesson plans are also provided, with the average session taking requiring three visits to the site. In the first year of the program (1994) over 3,000 students participated.

Appendix D Land Use Technical Committee Recommendations

The SREL has recently built a conference facility which is on-site but outside the general site fence. This allows for greater access by "uncleared" visitors. The conference center is the focus of scientific meetings, site tours and environmental instruction. SREL also sponsors "Ecocamps" and a "Saturday Morning Seminar Series."

LAND USE TECHNICAL COMMITTEE'S CONCEPT OF FUTURE USE OF SRS

Multiple and Compatible Uses

SRS has informally used a classic ring or "target" approach to land use planning with the center ring being an industrial area, and other areas being security and/or safety buffers. The guiding principle of the "inner ring" concept is the desire to locate all facilities which handle or process radioactive materials within the inner ring. Facilities outside the inner ring would ultimately be decommissioned or relocated. The SRFS has used this planning concept in its program to establish red cockaded woodpecker (RCW) habitats onsite. Human-induced habitats are promoted in the periphery of the site. However, in the industrial core, establishment of man-made RCW habitats is discouraged.

To understand the LUTC's future use recommendations, one has to understand multiple use. In this land use planning concept, several (or many) compatible uses and activities can "occupy" or use the same space simultaneously. Multiple use management focuses on optimizing the functions of the entire ecosystem. Although SRS is not a "community" per se, it can still utilize the multiple use planning concept. Consequently, an analysis of use compatibility has been prepared for the site in the form of the matrix below.

<u>PRIMARY FUTURE USE</u>	<u>Current Acreage</u> (Approximate)	<u>Potential Acreage in 30 Years</u>
Industrial	17,000 (developed)	50,000 (developed)
<u>CONCURRENT SRS FUTURE ACTIVITIES</u>		
<u>Most Compatible Activities</u>	<u>Current Acreage</u> (Approximate)	<u>Potential Acreage in 30 Years</u>
Research & Technology Demonstration	50,000	180,000
Public Education	50,000	180,000
Recreation	4,800	130,000
Natural Resource Management	180,000	180,000
Cultural Resource Management	180,000	160,000 (reduction occurs as more sites are characterized)

The aggregate of the categories in the matrix equal more than the site's total acreage of 198,000 because of the Land Use Technical Committee's recommendation for multiple uses occupying the same area.

LAND USE TECHNICAL COMMITTEE RECOMMENDATIONS FOR FUTURE USE OF SRS

Based on the summary in the preceding pages, the following recommendations are presented with supporting information.

Recommendation One - *Industrial as the Primary Use*

SRS boundaries should not change and the primary future land use should continue to be industrial, with multiple, concurrent supporting land use activities.

It is proposed that industrial uses of the site continue as in the past, with emphasis on stabilization activities of surplus materials and facilities. However, the *percentages* of land used for particular activities may change (current percentages are 15% developed and 85% undeveloped land). There are many reasons for maintaining site boundaries. Except for inquiries from former site residents, there appears to be no public demand for SRS land. This has been substantiated in numerous public meetings, where site planners heard no outcry for the commercial or developmental use of the land or facilities at SRS. However, local chambers of commerce and civic organizations have stressed that the site remain open to undertake industrial activities.

Also, although contamination is not severe, (given the size of the site), it is dispersed, being spread throughout much of the site, thus rendering not only the contaminated areas, but also those in-between, incompatible with public transference. Additionally, regulators have indicated they would oppose any move to release land that had not been cleaned up to residential standards.

Finally, for forty-five years the site has demonstrated that many diverse activities can coexist with each activity performing to its full potential. Eliminating federal ownership would have a significant effect on these relationships and eliminate some of these uses altogether. There are other reasons for keeping the site intact. These reasons are identified below.

Possible future national need for federal activities

Uncertainties in the world situation indicate that there is a need for some type of large, secure, government facility which could respond to a currently unknown threat. Although the exact nature of the threat may not presently be known, history shows that such threats do occur and that the nation needs to be prepared. With the current "downsizing" program, many DOE and DOD sites have been eliminated, leaving planners fewer available large sites should the need arise.

SRS uniqueness

With SRS under federal control for almost fifty years, many unique features now exist that should be maintained. The USFS has created and enhanced habitat for threatened and endangered species. Beaver ponds and natural wetlands abound. Many of the site's 200+ unique Carolina bays have been allowed to regain their wetland value and function. The portion of Upper Three Runs Creek in the northern region of the site has been documented as having one of the highest levels of

aquatic insect biodiversity of any stream in the world. Site impoundments and the Savannah River Swamp serve as wintering refuges and migration rest stops for waterfowl and also serve as nesting and foraging areas for bald eagles; endangered wood storks forage in the swamps. The SRS has the highest biodiversity of amphibians and reptiles of any area in the Southeast. Game species, such as deer and turkeys, are in abundance on the site; and turkeys from the SRS are used to restock other suitable habitats in South Carolina. Also, during this period of government protection, archaeological sites have been protected and large-scale, long-term ecological research has been undertaken. SRS plays an important regional role in maintaining and enhancing biodiversity and in providing critical habitat for plants and animals of the southeastern United States. Finally, SRS is unique as a well-established NERP, contributing valuable scientific information to the region and country.

The number, time frame and cost of studies prior to turnover.

The number, time frame, complexity and cost of required studies are major impediments to an SRS real estate turnover process. Experts at SRS have compiled a partial list of studies that would need to be undertaken prior to transferring land to non-federal entities. Some examples of these studies are included in the appendix.

Recommendation Two - Environmental and Geological Research

Consistent with designation of the site as a National Environmental Research Park, research and related technology demonstration activities should be increased

Good planning dictates that decision makers responsible for the defense sites "do what they do best" when considering future uses. SRS leads the DOE Complex in many areas: established as the first "NERP" in 1972; known throughout the DOE Complex as a leader in environmental remediation technologies; seen as a treasure trove of cultural information; the unique research conducted by the USFS and the reputations of the Savannah River Ecology Laboratory, the Savannah River Technology Center and the Savannah River Archaeological Research Program all contribute to the viability of potential future uses for SRS. However, these programs have a tenuous status. The NERP program, while recognized to have many benefits in the scientific and land use communities, is not legitimized by statute and hence could be eliminated. While technology transfer efforts are slowly coming to fruition, they are not sufficient to provide a new site mission to maintain the economic viability of the SRS in the near future. Archaeological and anthropological research is often conducted in a reactive mode - responding to the need to survey sites to ascertain their cultural significance prior to initiation of construction. The SRFS research is based on a funds available basis, and SREL and SRTC conduct research primarily in support of the site's nuclear/industrial mission.

As future land use questions are settled, many of the programs above will be stabilized. Research has indicated that if a more stabilized planning base existed, foundation, university and government funding support would be forthcoming. In addition to being geared predominately to the site's previous defense mission, the research and technology applications could expand to be applied to unexploited areas of study. Studies have indicated that the site is well suited for research in

algaculture, aquaculture, medicine, (expanded) bioremediation, forest products, the fate and effects of contaminants in the environment and archaeology and cultural anthropology.

Recommendation Number Three - Residential Use

No area of the site should be designated as potential "residential" areas.

In addition to the explanations provided in Recommendation One, there are other reasons which preclude "residential" designation for SRS. First and foremost is the extent of contamination. While the most dangerous contamination is contained and is not a hazard to health, there are areas of the site where remediation cannot be accomplished with today's technology, would require unrealistic resources or would destroy valuable habitats. Most of these areas are water bodies. For example, much of the Savannah River Swamp is contaminated with low levels of cesium, many of the stream beds have unacceptable levels of heavy metals and radionuclides, groundwater under the industrial areas is contaminated, and the 2,640 acre PAR Pond benthos has unacceptable levels of cesium and mercury.

While the preponderance of the site land area is free of contamination, under a residential scenario many future residences potentially would be located near the many on-site water bodies. This could present a risk to full-time residents, no matter how slight and remote. To protect the public, each stream, lake and pond would have to be fenced and patrolled. Restricting access to these water bodies would create a checkerboard pattern of land use which would not be acceptable for residential, industrial or a NERP. Additionally, many research projects, technology demonstrations, meteorological towers and monitoring devices would need to be relocated or eliminated due to their proximity to residential areas and the potential vandalism that can occur in unsecured sites. Also, while there has been some interest in returning the SRS to its previous owners, there has been no appreciable demand for the land as has occurred at other federal facilities. Release of the land could have unexpected negative effects on CSRA land prices.

Finally, the institutional question of federal liability has not been determined. With the present situation of controlled access to and monitoring on the SRS, the government can be reasonably assured that the public and site workers will not be exposed to undue risks. However, if the site is opened to unrestricted public access, especially through the most open residential scenario, the question of the government's limit of liability will need to be determined. Because of this, any future, non-governmental uses should be implemented with requirements that the federal government maintain ownership responsibility and ultimate oversight of the SRS.

Recommendation Four - Consideration of Risks and Costs

Future use planning should consider the full range of risks and costs associated with remediation.

Because of the site's unique mix of contamination and the constraints surrounding remediation costs, there are limits on how much of the SRS can reasonably be remediated to regulatory-acceptable levels. Therefore, efforts should concentrate on containment and monitoring to protect public health and the environment and clean up of areas that may limit future land use activities. This is a strategy recommended in published reports by policy researchers at the University of

Appendix D Land Use Technical Committee Recommendations

Tennessee, the Congressional Office of Technology Assessment and the Congressional Budget Office. In conjunction with this strategy, future land use planning should prioritize environmental remediation based on one specific type of land use (e.g., industrial) and supporting activities.

Recommendation Five - Maintain Natural Resource Management

Natural resource management activities should be maintained/increased.

Natural resource management activities have played and continue to play a significant role at SRS. These activities could be increased and not inhibit other possible future uses. In some cases increasing natural resource management would provide more enhancement for other proposed future uses. For example, using the present acreage of forested lands and the concept of multiple use management, additional opportunities can be created for recreation, educational, and research activities. Also, an increase in the endangered species population could allow for export of these species "banks" to other areas.

According to Georgia's Water Branch of the state Environmental Protection Division, there may be resource-limiting factors that would curtail industrial growth and encourage expanded resource management at SRS. The chief of the branch told a public meeting in Augusta in 1992 that there is very little assimilative capacity left in the Savannah River due to the number of industries and municipalities dumping waste into the river body. Consequently, keeping large areas such as SRS along the river in a relatively natural state would be an excellent idea - not only to preserve SRS' environmental integrity, but to allow for planned off-site river development.

Recommendation Six - Cultural Resource Compliance Maintenance

Cultural resource compliance activities should be maintained at current levels to ensure pro-active management.

The primary purpose of the Savannah River Archaeological Research Program (SRARP) of the University of South Carolina, is to provide DOE-SR with recommendations concerning the management of cultural resources so that DOE will be in compliance with federal laws and regulations. Because the proper management of these resources is dependent upon on-going research to assess archaeological site significance, SRARP began a phased approach to compliance in 1973 with a research program involving reconnaissance surveys, watershed surveys, project-specific surveys and data recovery projects (excavation). These archaeological activities, operating in close coordination with major land users, facilitate the identification and preservation of cultural resources at SRS.

Through the integration of cultural resource management and research, SRARP acquires new knowledge about the past for dissemination to the local and national public and the professional archaeological community. In addition to their responsibility to DOE-SR, the missions of SRARP form the foundation for the decision process with many stakeholder groups. Cultural research provides background data for former land owners and Native American constituencies and assists local planners in their comprehensive planning. Cultural resource management activities should continue to focus on: 1) research-based compliance to ensure pro-active management, and 2) the dissemination of new knowledge to the public.

Recommendation Seven - Increase Compatible Recreation

Specific recreation activities compatible with other site uses and activities should be increased.

Several large tracts of SRS may be suitable for low impact, controlled, outdoor public activities such as hunting, hiking, bird watching, camping, and bicycling without impacting the industrial missions of the site. Also, with controlled access, other uses could continue unaffected by the increased recreational population. Controlled access would continue to ensure the safety of the public and, in the case of hunting, assure monitoring of game.

Recommendation Eight - Increase Education

Public education activities should be significantly increased.

Public educational activities could be greatly expanded without jeopardizing current or future industrial missions. Expansion of public education activities, advocated by many groups, would meld well with other concurrent uses. Increasing these activities has received support from the South Carolina Department of Parks, Recreation and Tourism, the [old] Ellenton Reunion Committee, the U. S. Forest Service, planners preparing the South Carolina Heritage Corridor plan, and various local planning and economic development organizations. Recently, various task groups have been exploring the feasibility of establishing a museum/education/interpretive center on the site. The Land Use Technical Committee endorses this concept.

Recommendation Nine - Establish a Land Use Decision Process

Additional mechanisms should be established to assist the DOE-SR Site Manager in the land use decision process.

DOE land and future use planning is undergoing change. New directives call for increased planning activities with expansion of input to assist the decision making process. One organizational approach for land use planning would be to expand the membership of the Land Use Steering Committee (presently consisting only of WSRC senior managers), creating a truly site-wide land use advisory committee consisting of experts from each major land use organization. This group would advise the DOE-SR Site Manager on the status of the current land uses, provide assistance in planning other land uses or expanding current uses, and provide expert judgment should land use conflicts arise. Concurrent with the establishment of this committee would be increased support, coordination and consolidation of site land use activities.

While important for future use planning, the establishment of use and activity zones were not considered in this report. Development of planning zones for compatible uses requires a large, concerted effort and is time-intensive. If SRS management wishes to pursue a zoning concept for future use planning, the LUTC would provide active support. Establishment of a decision hierarchy based on use-compatibility criteria and adherence to the multiple use concept would strengthen the land use decision process. The LUTC also strongly endorses establishment of use-compatibility criteria and would provide a lead technical role in such an endeavor.

CONCLUSION

In this report the SRS Land Use Technical Committee has used its cumulative knowledge to present a fair appraisal of future land use. While no one can predict the future, the LUTC has provided its best judgment on the utilization of site attributes which will most wisely use the physical and natural resources of SRS. What the committee envisions are expanded site functions that are dynamic and meet the needs of the country while still responding to concerns of the region. From a land use perspective, all site activities could be expanded. The committee believes that a site as unique and large as SRS can also meet the needs of diverse interest groups. SRS' natural, industrial, cultural and demographic resources are indeed a treasure that should be preserved.

EXAMPLES OF REQUIRED STUDIES PRIOR TO TURNOVER OF FEDERAL LANDS

National Environmental Research Park (NERP) Status - Although SRS was designated the first NERP in 1972, it has no legal status as such and could be "undesignated" quite easily. Consequently, elimination of the NERP program would not require studies. However, the 30 NERP "set-aside" areas may require study to determine their ecological value and, if necessary, what protective steps could be taken to ensure their continued existence in a protected status. An option which DOE-SR is currently pursuing is having the NERP designation institutionalized via federal legislation.

Transportation - A detailed study would need to be completed to fully determine the impacts that opening the site would have on U. S. Department of Transportation compliance. These studies include adequacy of bridge and road bed load capacity, hazardous waste transportation, traffic flow and intersection safety. Site transportation planners estimate that the increased transportation costs could amount to an additional \$3 million per year in operating costs and as much as \$38 million in one-time expenses. The time to implement these changes, from the initial study phase through implementation would be from 3 to 20 years.

Threatened and Endangered Species - Although much of the site has been surveyed for threatened and endangered (T&E) species, a complete site inventory of T&E species would need to be completed. Because the SRS T&E species are federally protected, consultation with the U. S. Fish & Wildlife Service would be required. In the past, these studies have cost \$70 per acre. However, because of the opportunity for economy of scale provided by SRS' 198,000 acres, SRS planners estimate the cost of the inventory process could be as low as \$3-10 per acre.

Cultural and Archaeological Heritage - Several federal statutes are quite explicit as to the responsibilities of federal agencies in this area. Studies are required prior to transfer of federal land (e.g., National Historic Preservation Act, Archaeological and Historic Preservation Act and the American Indian Religious Freedom Act). The time and money involved in the turnover process depends on a range of variables, including: size of survey area, archaeological sensitivity zones represented, intensity of survey and site testing, number and complexity of sites, and, if appropriate, the level of data recovery for the significant resources. Since no comparable government site this large has been intensively surveyed before, only extrapolation of cost and time factors can be used. If siting the New Production Reactor is used as a baseline, the cost would be \$90 million. Again, due to economies of scale, it could be assumed the cost and time factor would be lower.

Safety Analysis Reports (SARs) - The impact and risks from potential accidents at SRS nuclear facilities are analyzed in formal "Safety Analysis Reports" (SARs). Each of the twenty-four nuclear facilities has a SAR. These reports describe each facility and its operations with special emphasis on safety features. The reports also consider all possible accidents and analyze the risk to site workers and the general public in the site vicinity. Since SARs are based on the current site boundary they would need to be revised if the boundary is changed. Costs per SAR for an individual facility range from ten thousand dollars to hundreds of thousands of dollars. The higher costs would accrue if boundary changes are at locations of the highest consequences from potential accidents.

National Environmental Policy Act (NEPA) Review - If a land transfer were to occur, it would constitute "a major federal action," and the NEPA process would be in effect. However, there are many variables associated with this process; the most important variable being the future use of the land. If the future use is not significantly different than the historic DOE use, then a "Categorical Exclusion" (CX), the lowest NEPA requirement, would be required. However, if there was a significant change in future use or if the site boundaries changed as in the SAR example above, then an environmental impact statement (EIS) would be required. An EIS can cost \$2 million over 2 years.

Findings of Suitability for Transfer - The Community Environmental Response Facilitation Act (CERFA), National Defense Authorization Act (FY 94) and the "Hall Amendment" (Public Law 103-160) govern transfer of public land. The most important requirement of these statutes is that an "Environmental Baseline Survey" (EBS) must be completed prior to land or facility transfer. The survey identifies property on which hazardous substances, petroleum or their derivatives were stored, released or disposed. The results of these surveys must be approved by the EPA Administrator with concurrence by the State of South Carolina. Based on an EBS of D Area, it is estimated that two months or more study time would be required for each of the 15 major site areas.

Monitoring - Prior to transfer, various sampling regimens would need to be completed and an ongoing sampling program initiated. Monitoring of the air, surface water and groundwater, regardless of future use, would have to be continued, and in some cases, expanded. Costs cannot be determined at present due to the uncertainty of property location, size and possible contamination.

Mapping - Subdividing parcels of SRS real estate for transfer would require extensive surveys. Since the land has not been publicly occupied since the early 1950's, existing parcel boundaries and corresponding monuments do not exist. Site surveyors estimate mapping would cost \$500 per acre.

Security - Wackenhut Services, Inc. has indicated that if site boundaries change significantly and/or a large number of guard posts are eliminated or re-located, additional security studies would be required to ensure the security of the site's classified missions, employee/public safety, and protection of DOE's assets would remain at acceptable levels. To date, no cost or time estimate of this task has been made.

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Appendix E SRS Future Use Project Team

Don Druelle, DOE-SR Project Team Leader

Gerri Flemming, DOE-SR

Virginia Gardner, DOE-SR

Jerry Nelsen, DOE-SR

Rick Ford, DOE-SR

Gail Jernigan, WSRC

Robert Meadors, WSRC

Chris Noah, WSRC

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Appendix F Organizations

The following organizations expressed an interest in the SRS Future Use Project by having a Future Use Project Team member speak at a meeting, by attending a SRS public meeting on the Future Use Project, or by providing written or verbal comments on recommendations or the process for the Future Use Project. Summaries of the recommendations from the SRS Citizens Advisory Board, Citizens for Environmental Justice, and the SRS Land Use Technical Committee are in Section 2; the full text from these groups are in the appendices.

Aiken Lions Club, Aiken, SC
Aiken Midday Lions Club, Aiken, SC
Augusta Retail Credit Association, Augusta, GA
Barnwell Lions Club, Barnwell, SC
Citizens for Environmental Justice, Savannah, GA
Citizens for Nuclear Technology Awareness, Columbia, SC
Ellenton Reunion
Energy Research Foundation, Columbia, SC
Hyde Park community group, Augusta, GA
Lower Savannah Council of Governments, Aiken, SC
National Association for the Advancement of Colored People (NAACP), Aiken, SC
National Turkey Federation, Edgefield, SC
Savannah River Site Citizens Advisory Board (SRS CAB)
Savannah River Regional Diversification Initiative (SRRDI)
Savannah River Site Citizens Advisory Board
Savannah River Site Land Use Technical Committee (LUTC)
Sierra Club, Augusta, GA
South Carolina Department of Natural Resources, Columbia, SC
South Carolina Quail Unlimited, Columbia, SC
St. John's Methodist Church, Aiken, SC

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Appendix G Summary of Public Meetings

This appendix is a summary of the six public meetings held by the Department of Energy on the issue of future use. Except for the September 19, 1994, public meeting, these meetings were also co-sponsored by the Risk Management and Future Use Subcommittee of the SRS Citizens Advisory Board. The November 1, 1994, meeting was also co-sponsored by the Savannah River Site Diversification Initiative.

While not all comments have been listed in this appendix, the essence of the comments has been shown below.

September 19, 1994, Public Meeting in Aiken, South Carolina

The purposes of this meeting were to: (1) present the *Draft Current Land-Use Baseline Report* to stakeholders, (2) discuss the future use planning process and receive stakeholder input, and (3) obtain stakeholder input on the method and degree of public participation in the development of SRS future-use recommendations. The meeting was held from 6:00 p.m. to 9:00 at the Stevenson-McClelland Building in Aiken, South Carolina, and approximately 60 people attended.

Bill Noll, (the Deputy Assistant Manager for Engineering and Projects for Department of Energy Savannah River Operations Office [DOE-SR]) provided an overview of the Future Use Project. Ernie Chaput, Deputy Manager for DOE-SR, introduced the topic, specifically, "How do the various stakeholders, both groups and individuals, want to interact with the Department of Energy (DOE) on the future use of SRS as a resource of the U. S. Government?"

The purpose of the Future Use Project was defined as a process to produce stakeholder-preferred future use recommendations for SRS by September 1995, where these recommendations will be used to aid DOE's decision-making. This process was not to develop missions for DOE at SRS. The stakeholder-preferred recommendations may be used by:

- defining "how clean is clean" for site planning activities,
 - waste cleanup goals
 - decontamination and decommissioning goals
- developing economic opportunities by potential re-use of surplus land and facilities, and
- planning for site development and future land use and determining the level of infrastructure maintenance necessary to implement these plans.

Future use decisions will be based on stakeholder-preferred uses, technical considerations, legal constraints, and DOE mission requirements.

The participants were divided into four different groups and each group was given the same discussion topic: to discuss how the public should be involved in the process. Ideas from the breakout sessions included the following:

- DOE should provide a strawman and guidelines for the Future Use Project process and for the public participation plan. Stakeholders want to become involved, want to be heard, and want to be active in this process.

Appendix G Summary of Public Meetings

- The SRS Citizens Advisory Board (CAB) should be the primary focus for stakeholder involvement; others disagreed. Those who believed that the CAB should be the focus of the project thought that a consensus could be developed by using this method.
- Regulator involvement (South Carolina Department of Health and Environmental Control and the Environmental Protection Agency) is necessary for the success of this project.
- Organizational stakeholders could submit reports from their own subcommittees. (Organizational stakeholders suggested were schools, National Association for the Advancement of Colored People [NAACP], chambers of commerce, the University of South Carolina at Aiken, etc.) These organizational stakeholders could attend CAB meetings and members of the CAB could attend organizational stakeholders' meetings.
- Meetings should be focused and organized with defined deliverables and agendas. This information should be sent to participants prior to any public meeting so that participants can come prepared.
- Participants want a written summary of all meetings.
- Environmental Impact Statements could provide some guidelines for future missions and direction for the site.
- Open public meetings and working in subcommittees and with the SRS CAB were the best approaches for public involvement in the Future Use Project process.
- Participants should be "educated" about the Savannah River Site and the Future Use Project. Suggested sources included the *Savannah River Operations Strategic Plan*, the *Land-Use Baseline Report*, SRS fact sheets, other DOE field offices' experience in the Future Use Project process, and a designated point of contact.

Don Druelle was announced as the DOE point of contact.

November 1, 1994, Public Meeting in North Augusta, South Carolina

The objectives of this meeting were to provide information through presentations and discussions to interested citizens on the *Draft FY 1995 Current Land Use Baseline Report*, the *Savannah River Operations Office's Strategic Plan*, and proposed process for developing stakeholder-preferred future use recommendations. The meeting was held from 4:00 p.m. to 7:00 p.m. at the North Augusta Community Center with approximately 60 people attending.

Lee Watkins, the DOE-SR Assistant Manager for Engineering and Projects, opened the meeting with introductions and a review of the meeting agenda. Robert Meadors, Westinghouse Savannah River Company Strategic Programs and Planning Department, discussed the *Draft FY 1994 Current Land Use Baseline Report* including the purpose of the report, stakeholder participation, the goal and organization of the report, major mapping categories, and plans for the final report. He also announced that the final report would include health risk mapping and that comments on the *Current Land-Use Baseline Report* would be accepted through November.

Ernie Chaput discussed the *DOE Savannah River Operations Office Strategic Plan* regarding its implications on the Future Use Project. His presentation included the background of the *Strategic Plan*, its contents, impact, and the six business lines (Industrial Competitiveness, Energy Resources, Science and Technology, National Security, Environmental Quality, and

Infrastructure). This plan is a living document and will be updated periodically and comments would be accepted on this plan through January 1995.

Larry Synder presented information on the *Draft Public Participation Plan for the Future Use Project* including the proposed outline, process, and project steps. He also discussed the previous public meeting and how DOE had incorporated those comments in the proposed plan.

Comments from the public are shown below.

- The Metro-Augusta Chamber of Commerce advocated new missions for SRS and hoped that SRS is actively pursuing activities such as the ITER (International Thermonuclear Experimental Reactor), new tritium source for the nation, etc., and hoped that DOE would continue its technology transfer activities. SRS is the economic engine for the region.
- The Citizens for Nuclear Technology Awareness (CNTA) also supported new missions for SRS such as ITER, new tritium source, etc.
- The Savannah River Regional Diversification Initiative (SRRDI) believed that at least three areas should be given serious consideration in the development of future land use: environmental management, future defense missions, and industrial development. Consideration from economic and technology transfer perspective should be given to using the site's land and facilities as an asset for local development. SRRDI also would like to see the availability of the site's land and facilities on a lease basis for other industries.
- The Lower Savannah Council of Governments thought that this Future Use Project should continue to be an open process which would solicit comments from the various counties and municipalities in this region.
- The SRS Citizens Advisory Board strongly encouraged comments from the public since the CAB makes recommendations to DOE, the Environmental Protection Agency, and the South Carolina Department of Health and Environmental Control on the future use issue.
- The South Carolina Department of Commerce thought that there should be more technology transfer to private industry and stated that they planned to become more active in the future use planning process.

February 2, 1995, Public Meeting in Augusta, Georgia

The stated objectives of this public meeting were to: (1) provide an opportunity for public comment/discussion on the strawman *Draft Public Participation Plan for the Future Use Project*, (2) discuss the roles and responsibilities of the co-hosts for the meeting, (3) discuss the objectives of the Future Use Project, (4) present the Secretary's Land Use Initiative, and (5) by using a "brainstorming" technique, solicit potential future use options and begin to categorize according to industrial, recreational, resource management, etc. However, due to numerous comments from the audience, the brainstorming for potential future use options was done first, followed by comments on the *Draft Public Participation Plan for the Future Use Project*. The Secretary's Land Use Initiative was not discussed. The meeting was from 4:00 p.m. to 6:00 p.m. and approximately 75 people attended the meeting at the Augusta Richmond County Civic Center in Augusta, Georgia.

Appendix G Summary of Public Meetings

Brian Costner, chairman of the Risk Management and Future Use Subcommittee of the SRS CAB, provided a brief overview of the CAB and this subcommittee. Susan Payne provided a brief overview of SRRDI, a community reuse organization and its interest in the Future Use Project.

Below are some of the suggestions received during the brainstorming session of the meeting. This brainstorming session was to generate ideas for possible uses for the land and facilities at SRS. (See Appendix A for a summary of potential uses for land and facilities; this summary includes suggestions from public meetings, written comments, and other comments received by DOE.)

- The site is over 300 square miles; turn the uncontaminated land back to the counties from which it was taken and let them deal with it.
- Use only the industrial areas and leave the buffer zone as pristine sections. Do not use undeveloped land for new development.
- SRS is a unique place in that part of the land is contaminated and part of the land is pristine. This is not true of any other place or public land. Look at this unique combination and make this land a National Environmental Research Park. You can address many things by saving and using the contaminated areas as testing for future studies on the affect of radiation and future contamination research. This minimizes the costs and maximizes the information gained. Leave some contaminated land for future research.
- Maintain the site as a unit for potential future federal government purposes.
- Keep future land uses flexible.
- Keep the land for multiple uses, such as timber management, recreation, research, etc.
- Keep the site for ecological and environmental research.
- Keep the site as a research park with a mix of nuclear and non-nuclear uses.
- Use the facilities to process fissile material from commercial fuels.
- Maintain the site as an entity. Continue manufacturing with an environmental mix.
- The United States depends on foreign oil and energy. Presently 60% of our energy comes from foreign suppliers. SRS could be used for energy production, possibly nuclear energy.
- The site is a national asset and has interested parties across the United States, both economic and environmental.
- SRS is an ideal area for developing nuclear industrial research.

Below are some of the comments received on the *Draft Public Participation Plan for the Future Use Project*.

- How many more meetings with DOE hold without representation from the African-American community?
- DOE must consider environmental justice concerns.
- The documents that support this project are not written so that the average person can read and understand them. If you want real stakeholder involvement, you must give the public something they can use and understand.

- The survey in the *Draft Public Participation Plan* is poorly worded and does not ask good questions. There is value in a survey if it is done according to accepted practices. This survey does not meet objectivity. To get meaningful results, the survey must be credible.
- Need to keep a direct link between DOE and the public.
- Public comments should not be filtered through intermediaries such as SRRDI, CAB, etc.

[NOTE: Due to the numerous negative comments on the survey at the February 2 public meeting and other comments received by DOE, the survey was dropped from the public participation planning process.]

April 11, 1995, Public Meeting in Barnwell, South Carolina

The purpose of the meeting in Barnwell was to (1) provide background information on the Future Use Project including the status, purpose, and objectives of the project and (2) using a brainstorming technique, solicit potential future use options and begin to categorize them according to industrial, recreational, resource management, etc., land uses. The meeting was held at the Barnwell State Park from 6:00 p.m. to 9:00 p.m. and approximately 25 people attended.

Robert Meadors opened the meeting with a pre-meeting briefing. This presentation was prepared so that all participants attending these public meetings would receive the same information, regardless of the speaker. This presentation was also used at various civic clubs, churches, and other organizations who requested a speaker on this topic. The overview presentation briefly describes past and current land uses and missions at the Savannah River Site, discusses possible future land use categories such as industrial, agricultural, residential, environmental research, etc., and presents a Department of Energy perspective of the site's future.

Julie Arbogast, a representative of the SRS Citizens Advisory Board Subcommittee on Risk Management and Future Use, gave a brief background of the work this subcommittee is doing. The subcommittee plans to have a recommendation to the full Citizens Advisory Board in September for the members' consideration and a recommendation to the Department of Energy, the Environmental Protection Agency, and the South Carolina Department of Health and Environmental Control by December.

Below is a summary of comments received at the meeting.

- The land at SRS should be given back to the former residents of the area. My land was legally "stolen" from me in 1952 at \$42 per acre.
- Mike Caudell, a biologist with the South Carolina Department of Natural Resources (DNR), read from a prepared letter requesting that all future use plans contain additional outdoor recreational opportunities for the general public. Specifically, DNR suggested diverse public hunting programs.
- As a member of the Barnwell County Council and the Citizens Advisory Board and a former resident of Ellenton with roots in Dunbarton, I do not wish to take the land back. I would like to visit the areas where I grew up and my family lived for many generations. I believe that recreational use of the land is a good idea and I do want to see a safe environment for all local

Appendix G Summary of Public Meetings

citizens. I also want to see our citizens employed and the facilities should be kept in use. This is an important program.

- John Edwards read a letter to Don Druelle, Project Team Leader, from James Earl Kennamer of the National Wild Turkey Federation. This letter encouraged hunting, fishing, and other outdoor activities at SRS where possible.
- Joe Hamilton from the South Carolina Department of Natural Resources spoke in favor of "quality deer management." Quality deer management strives to improve the quality of deer herds and deer hunting experiences through sound management of buck/doe ratio, buck age structure, and deer densities that are compatible with habitat conditions and land use objectives of landowners.
- A Ducks Unlimited representative spoke in favor of the Department of Natural Resources recommendations.
- The chairman of the Aiken Quail Hunters said that the cooperative agreement with the Forest Service and the Department of Natural Resources has been good for hunting and for our natural resources.

The participants in the meeting were also asked for criteria that decision makers should use in making decisions for the future use of land and facilities at SRS. Suggestions included:

- No one should get hurt from contamination at SRS.
- The land should stay set aside for national security.
- To avoid risk of exposure, the site should be kept intact until all cleanup work is complete.

May 3, 1995, Public Meeting in Beaufort, South Carolina

The objectives of the public meeting in Beaufort were (1) provide background information on the Future Use Project including the status, purpose, and objectives of the project, (2) using a brainstorming technique, solicit potential future use options and begin to categorize according to industrial, recreational, resource management, etc., and (3) solicit values from participants. The meeting was held at the Holiday Inn, Beaufort, South Carolina, from 4:00 p.m. to 7:00 p.m. with approximately 16 people in attendance.

Don Druelle opened the pre-meeting with the same overview that was used at the Barnwell, South Carolina, public meeting. After a brief break, the main portion of the meeting agenda was opened by Lee Watkins, the Assistant Manager for Engineering and Projects, who welcomed the participants to the meeting. Mr. Watkins explained that a strawman report will be prepared in June with additional public meetings on the strawman to be held in July.

Brian Costner discussed the work the CAB Subcommittee on Risk Management and Future Use is doing. This subcommittee plans to have a proposal for the full Citizens Advisory Board review in September as a recommendation to the Department of Energy, the Environmental Protection Agency, and the South Carolina Department of Health and Environmental Control. He explained, as an example, that it is estimated to cost \$2 billion to drain Par Pond and dig up the contaminated sediments or it will cost \$1 million per year to maintain the current water level at Par Pond. By maintaining the current water level, the water acts as a shield against radiation. However, if the \$1 million option is chosen, the subcommittee would like assurances that this \$1 million is available

Appendix G Summary of Public Meetings

each year—for the next 50, 100, or 500 years. Existing conditions at SRS like Par Pond will determine the future use of the land and facilities. A member of the audience also asked about the risk benefit. For example, if Par Pond was dug up, this type of construction would probably result in 10-20 deaths of construction workers, whereas if the pond is left alone, we could save these lives.

Several citizens read prepared letters. These citizens are former residents of the land and would like the opportunity for first refusal if there is a chance that land would be returned to private ownership. They would like the chance to benefit from the sale of any land for privatization. Many believe that their heritage was taken from them in the early 1950s, as many displaced families had lived on this land for generations, dating back to the eighteenth century. Some have lost family cemetery plots and do not know where family members are currently buried.

Brian Costner suggested that a map showing former land ownership should be shown in the *Land Use Baseline Report* which is currently being prepared. He also suggested that former residents should meet with the Citizens Advisory Board and the CAB Subcommittee on Risk Management and Future Use.

The participants were asked for criteria DOE should use when making decision. Their answers included:

- fairness
- put your heart into it, not just financial gain
- reality
- who's most justified to use the land?
- consider people before wildlife and waterfowl
- give us a choice

May 4, 1995, Public Meeting in Savannah, Georgia

The next public meeting was held in the public library in Savannah, Georgia from 6:00 p.m. to 9:00 p.m. Because only one citizen came to the meeting in Savannah, the formal agenda was not used. Instead, a roundtable discussion was used to answer questions and provide information to this citizen. Don Druelle reviewed the purpose and status of the Future Use Project and Brian Costner explained the purpose of the CAB Subcommittee on Risk Management and Future Use. The participant was asked what criteria DOE should use when making decision. Her answer was "the water quality. The Savannah River and the quality of the groundwater is important to me and others in this area."

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Appendix H Relevant Maps From the SRS Land-Use Baseline Report

One of the comments we received on previous drafts of this report was to include the *SRS Land-Use Baseline Report* as one of the appendices in this report. Due to cost considerations, we were unable to use the entire report as an appendix; however, we have include some of the relevant maps in this appendix. Copies of the *SRS Land-Use Baseline Report* can be found in the Department of Energy Reading Room as shown below.

U. S. Department of Energy Public Reading Room
Gregg-Graniteville Library
University of South Carolina at Aiken
171 University Parkway
Aiken, South Carolina

Hours: Monday-Thursday, 8 a.m. to 11 p.m.
 Friday, 8 a.m. to 5 p.m.
 Saturday, 12 noon to 5 p.m.
 Sunday, 2 p.m. to 11 p.m.

Administrative/Nonnuclear Facilities

Overview/Program Description

As of November 1995, SRS employees were housed in 96 administrative office facilities, 567 administrative trailers, and 9 off-site leased administrative facilities. The site's major contractor, WSRC, is responsible for the administration of office facilities and functions.

Office space consists of permanent buildings on site and permanent and temporary office trailers. The program for office space management also encompasses personnel relocation in facilities on and off site. Subcontracts provide janitorial, laundry, food services, pest control, termite treatment and general labor services sitewide to support administrative facilities.

The nonnuclear facilities include Central Shops (N Area), Heavy Water Area (D Area), and part of SRTC.

Purpose/Missions

Administrative Facilities

The administrative facilities provide office space, general training, and records storage for SRS personnel to conduct normal operations in support of the site's mission.

A Area and B Area are the primary administrative areas. A Area provides office space for 4,027 employees, and B Area provides office space for 885 employees. A Area houses DOE and WSRC senior management and other personnel and is the location of SREL and SRTC. B Area houses WSRC, DOE, and WSI personnel. Administrative facilities also are located in each process area to provide office space for personnel who support the areas' specific functions.

Forty-three percent of the site's office buildings are more than 30 years old, 15 percent are from 10 to 29 years old, and 42 percent are less than 10 years old. Several modular facilities will be proposed during the next five years to facilitate the removal of on-site office trailers. A Area and B Area will be primary administrative areas. A sitewide training facility is scheduled for completion in H Area by fiscal year 1996.

Existing administrative space in production areas that are not scheduled for decontamination and decommissioning (D&D) and that have adequate infrastructure will continue to be utilized to meet overall housing needs. The existing facilities are expected to be well-maintained to extend their useful lives.

DOE's most recent priorities for providing administrative facilities are to

- relieve facilities that have serious, irreparable health and safety concerns
- eliminate off-site leased space
- eliminate on-site leased trailers
- relieve compression

Nonnuclear Facilities

Central Shops (N Area)

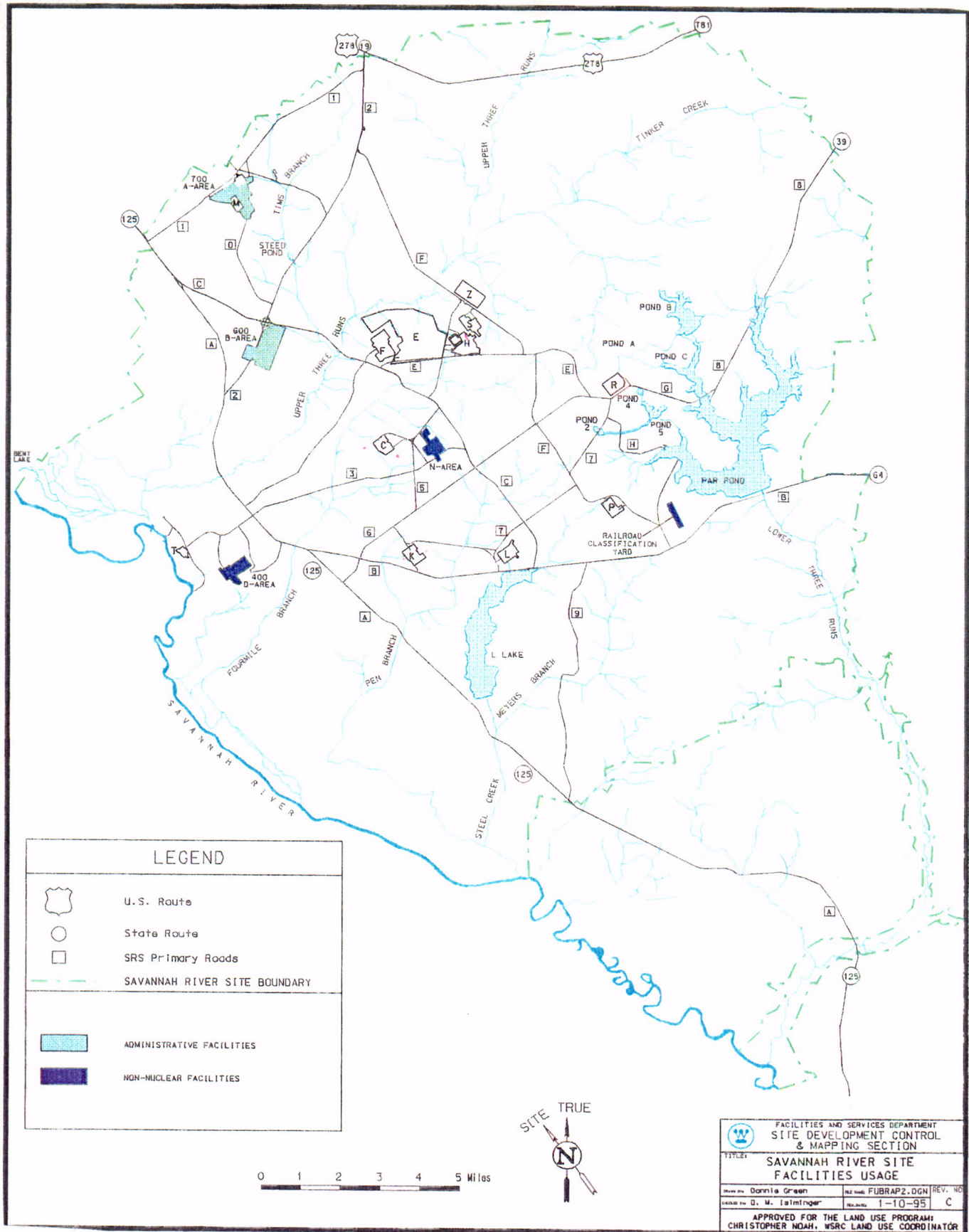
Central Shops (N Area) house construction and craft facilities, such as fabrication and welding shops, and associated materials in support of construction activities. This area also is the primary storage facility for operations and maintenance materials, including supplies and spare parts.

Heavy Water Area (D Area)

D Area actually is a "dual use" facility in that it has significant nuclear and nonnuclear operations. D Area contains facilities for supplying heavy water coolant/moderator to the reactors. Heavy water purification facilities, an analytical laboratory, and a powerhouse are operating in the area. D Area's mission will be the cleanup and concentration of the existing inventory of heavy water.

Savannah River Technology Center

SRTC conducts research, development, and technical support activities. Laboratory operations are conducted in the Technical Area (700) and the TNX Prototype Testing Area (600). SRTC also has nuclear facilities within the Technical Area. As an incentive to industry (1) to locate or expand operations within the local region and (2) to enhance technology transfer, a plan will be implemented to establish user facilities, thus serving a dual-use function that supports the SRS mission but is available to the private sector.



Nuclear Industrial Facilities

Overview/Program Description

The nuclear industrial facilities at SRS are owned by DOE and operated and maintained by WSRC. The purpose of these facilities is to provide stabilized, secure storage and disposition of nuclear materials. Because a number of these facilities are no longer in use, SRS is developing D&D plans for the facilities' final disposition. These plans will include the numbers and locations of buildings, cost estimates, and health and safety considerations.

Purpose/Missions

Fuel/Target Fabrication (300 Area)

Metallurgical/foundry facilities for fabricating reactor fuel and target elements for SRS reactors are located in the 300 Area. An orderly phaseout of all production activities for reactor fuel and target manufacturing is occurring. Materials in the area are being processed for shipment to permanent storage sites or declared excess and disposed. Subsequently, the retired facilities will be transferred to the Facilities Transition Program and placed in a surveillance and maintenance mode pending D&D or reuse by commercial firms.

Nuclear Production Reactors (100 Area)

Five reactors for nuclear material production originally were built at SRS. All five reactors—C, K, L, P, and R—are now classified as surplus facilities. Fuel storage basins in L Reactor and P Reactor contain irradiated fuel and targets awaiting a decision on future disposition. K Reactor is in "cold standby." Future production of new tritium by a new reactor or accelerator is the subject of ongoing DOE studies.

Nuclear Materials Processing Facilities (200 Area)

The processing, stabilization, separation, and recovery of nuclear materials are performed in two main operating areas, 200-F and 200-H. Each has (1) a large shielded "canyon" building for processing irradiated materials, (2) glove box facilities for product finishing and plutonium residue processing, and (3) associated support facilities. In addition, F-Area contains an analytical laboratory, the Plutonium Metallurgical Building, and the Naval Fuel Facility (currently in standby). H Area contains the Receiving Basin for Offsite Fuel, which

provides interim cooled storage for off-site spent fuels.

The nuclear materials management mission includes stabilization, secure storage, and disposition of the large quantities and various types of nuclear materials at SRS, as follows:

- Stabilize SRS nuclear materials for safe, secure storage and eventual disposition. Many activities are contingent upon the completion of pending National Environmental Policy Act (NEPA) actions.
- As required to implement preferred alternatives identified through an ongoing NEPA process, process or stabilize existing inventories of nuclear materials, including unstable spent fuels, to forms suitable for safe, secure storage for eventual disposition as waste or as usable materials (F Area/H Area).
- Receive and store off-site spent nuclear fuels contingent upon completion of appropriate NEPA requirements.

Tritium Facilities

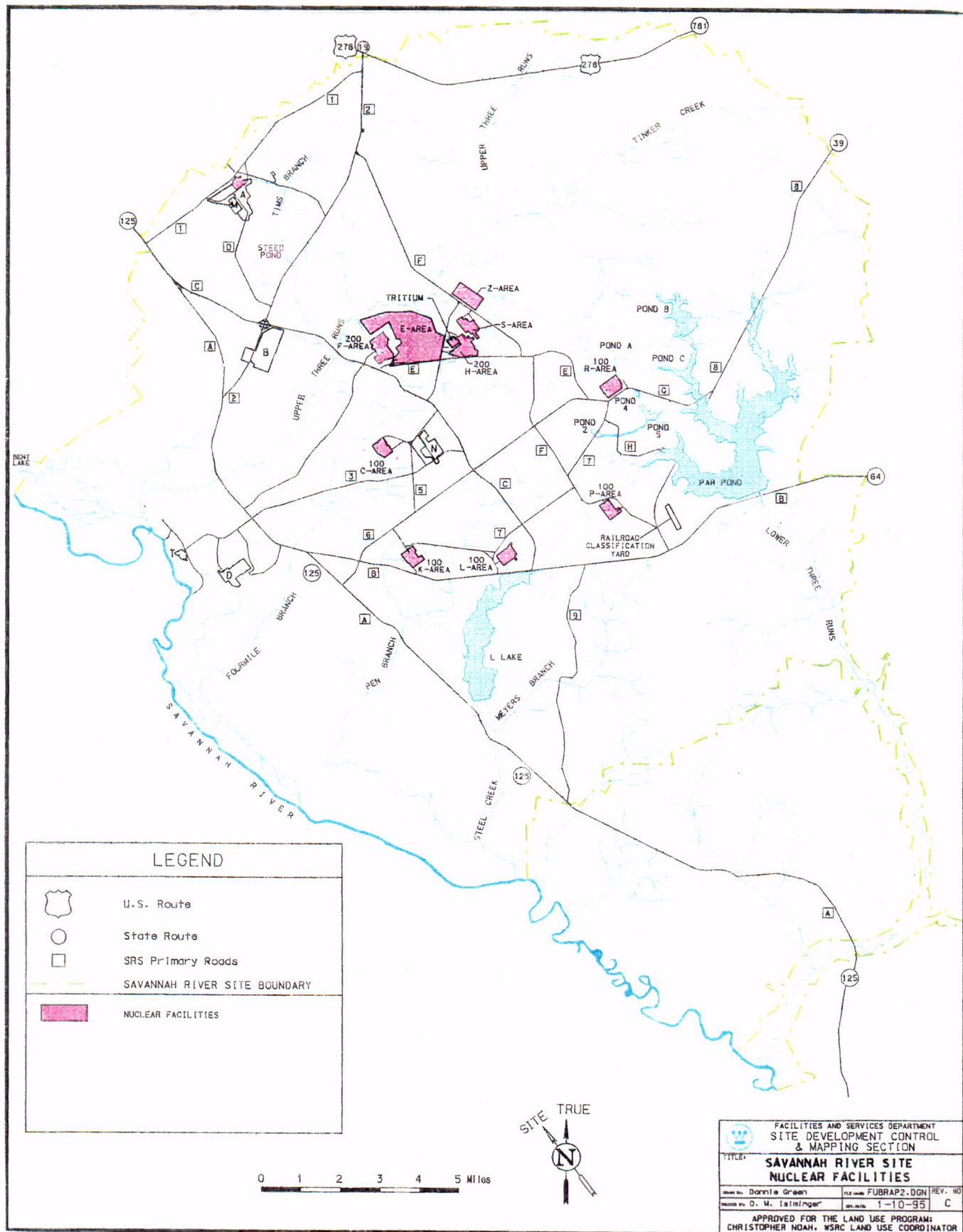
The tritium facilities, located in H Area, extracted tritium from irradiated targets and unloaded returned reservoirs, purified recycled tritium, and reloaded reservoirs. The tritium recycling mission, modified by anticipated program changes, will continue at SRS. Activities include recycling of weapon components for the active stockpile and extraction of tritium from remaining irradiated targets. In the long term, SRS will continue to recycle tritium and to add new nonnuclear missions.

Waste Management Facilities

High-level waste storage tanks are located in F Area and H Area. In S Area, the Defense Waste Processing Facility, which is undergoing startup testing, will immobilize the high-activity portion of this waste in glass. The Saltstone Facility, already in operation, solidifies the low-level fraction in grout (saltcrete) in Z Area. The Effluent Treatment Facility (ETF) for low-activity liquid wastes also is located in H Area.

Solid Waste Disposal Facility (SWDF)

The SWDF is a centrally located, 195-acre complex in G Area and E Area that stores and disposes of radioactive solid wastes. Facilities include the Low Level Radioactive Waste Disposal Facility, Transuranic Waste Storage Pads, and the Mixed Waste Storage Buildings.



Utilities

Overview/Program Description

The Power Operations Department oversees facilities that provide electricity, steam, river cooling water, domestic water, service water, and sanitary waste treatment. Steam and electricity are produced in the coal-fired cogeneration plant, while steam only (for K Area) is supplied by the operation of three diesel fuel-fired boilers within the area. Reactor cooling water is pumped from the Savannah River through a system of underground pipes into the 186 basins located throughout the reactor areas. Power Operations controls the pumping rate and the basin level. Domestic and service water are supplied through a deep-well pump system within the site's areas, and sanitary waste is treated in 20 plans located throughout the site. Power Operations personnel monitor and sample all sanitary outfalls for National Pollutant Discharge Elimination System (NPDES) permit compliance. They also operate

- chilled water systems for air conditioning and process ventilation
- process cooling water systems and air compressors for instrument air service
- process air service
- plant air service
- the large exhaust fan facilities in the canyon areas

Purpose/Missions

Domestic Water

SRS has 28 domestic water systems that provide water for drinking, washing, showering, and lavatories. Twenty-seven water systems are supplied with treated groundwater from site production wells.

Earthen Dams

SRS has 13 structures that are considered dams by definition. Built of earthen materials, they were constructed to create cooling reservoirs and ash containment basins, or were original (pre-SRS) farm ponds. All the dams are located in D Area, G Area or H Area. The largest dam is at Par Pond, a 2,640-acre reservoir on Lower Three Runs Creek. The reservoir's purpose was to serve as a recirculating cooling basin for R Reactor and P Reactor, which no longer are operating.

The Earthen Dam Safety Program, established in 1990, is responsible for maintaining the structural

integrity of the dams while minimizing environmental impacts.

Electricity

The SRS electric grid is a 115-kilovolt (kV) system in a ring arrangement that supplies power to operating areas, water pumping stations, administrative areas, and a number of independent and support function areas. Three commercial "tie lines" connect with the SRS grid. The 115-kV system includes about 100 miles of transmission lines. Power normally is supplied to the SRS grid by South Carolina Electric & Gas Company. Seven on-site, coal-fired turbogenerators supply a fraction of the on-site load and limited reserve power.

Sanitary Wastewater

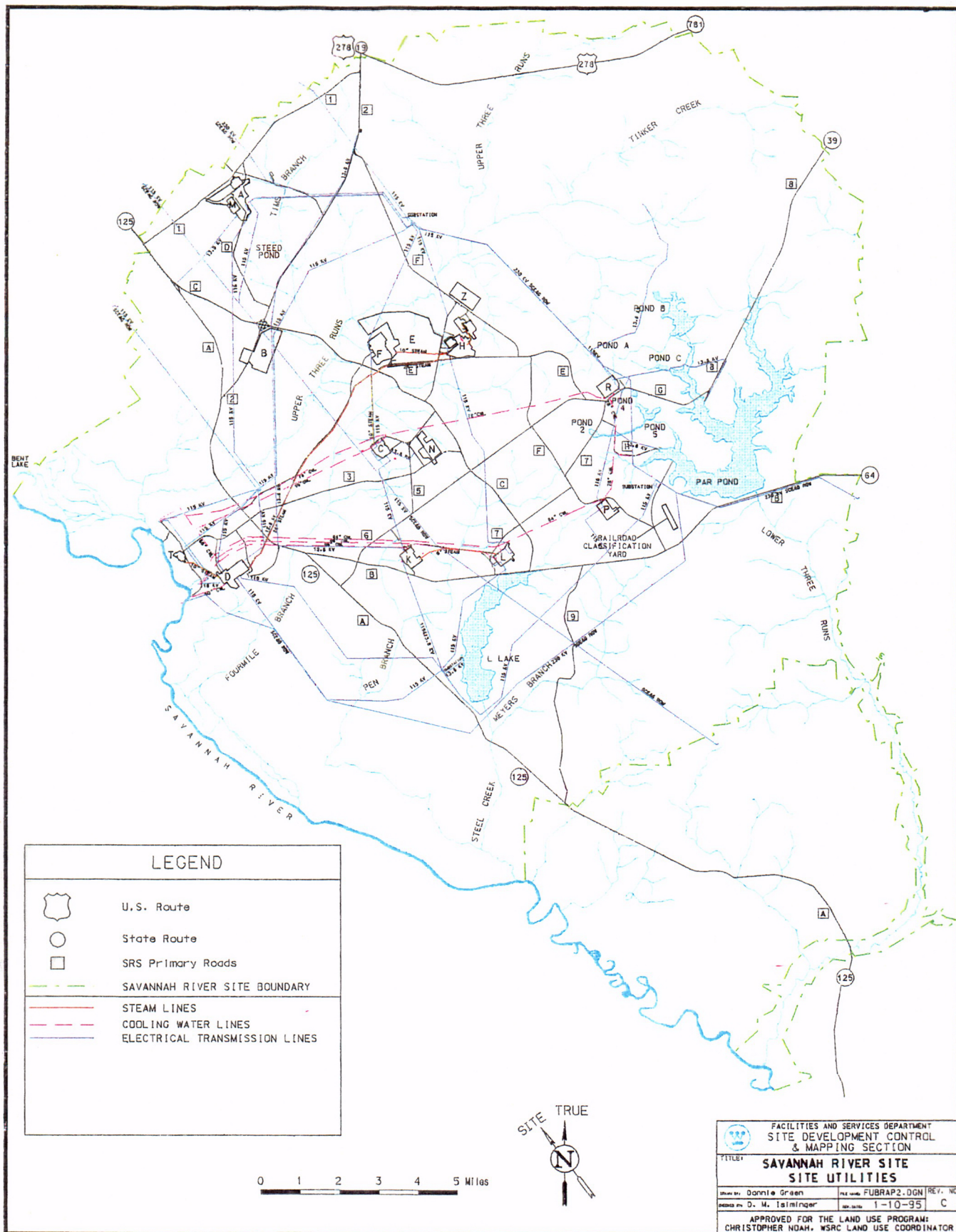
SRS has 20 operating package-type sanitary wastewater treatment plants in 13 site areas. Because of changing environmental compliance requirements, sitewide area population shifts, and existing plant optimum capacity limits, systems in the following areas are now considered inadequate: A, B, C, F, H, N, F, and S. The Central Sanitary Wastewater Treatment facility is currently under construction to replace these systems. Total design capacity is rated at 1.05 million gallons per day.

Steam

Building and process steam is provided to various areas across the site using the steam distribution system. The interarea steam distribution system consists of more than 20 miles of interarea steam piping, ranging in diameter from 6 inches to 24 inches. The D-Area Powerhouse is the primary source of process steam on site. Supplemental steam is produced by the H-Area powerhouse. Steam lines operate between other areas to provide an alternate source of steam in case of boiler failure and to provide a supplemental source between areas of peak demands.

River Water

The river water system provides cooling water for various process uses, primarily reactor operations, from the Savannah River and the Par Pond reservoir. This system consists of four pumping stations—three on the river and one on Par Pond. SRS has a network consisting of more than 50 miles of underground piping, ranging in diameter from 48 inches to 84 inches.



Threatened/Endangered/Sensitive-Species Management

Overview/Program Description

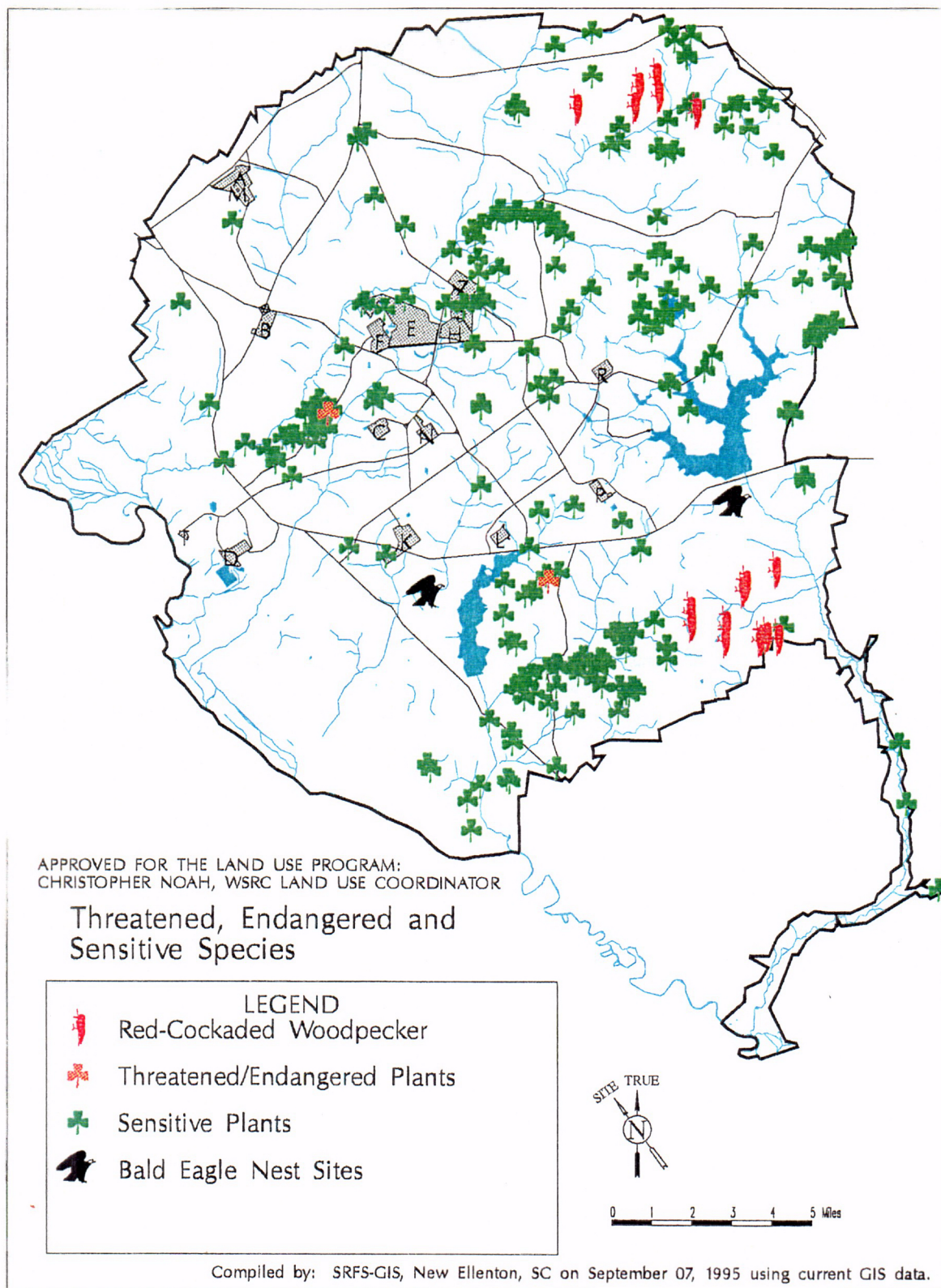
An endangered species is one that is in danger of extinction throughout all or a significant portion of its range. A threatened species is one that is likely to become endangered throughout all or a significant portion of its range within the foreseeable future. Sensitive species are simply those for which population viability, or continued existence, is a "concern."

The overall objective of the USFS wildlife, fisheries, and botany program at SRS is to attain and maintain viable populations of all plant and animal species native to the region to ensure the maintenance of biological diversity. The Endangered Species Act (ESA) requires a proactive approach to endangered- and threatened-species management on federally owned land. However, no minimum acreage is required by law. SRS works closely with the U.S. Fish and Wildlife Service (USF&WS) to determine the adequate habitat necessary to maintain threatened and endangered species. Endangered and threatened species are designated and administered by the USF&WS. The management of rare species, a vital part of the overall wildlife, fisheries, and botany program at SRS, is the responsibility of SRFS.

Purpose/Missions

SRS provides habitat for five endangered species. Several reside on the site year-round, while others are transient visitors. The number of red-cockaded woodpeckers has grown from four birds in 1985 to 77 birds in 1994, and the site supports two active breeding pairs of bald eagles. Also, the endangered wood stork forages on site, and the shortnose sturgeon, an anadromous fish, has been reported in the Savannah River adjacent to SRS. The American alligator, fairly abundant on the site, is listed as threatened (by virtue of similarity in appearance to the endangered crocodile). The smooth purple coneflower is an endangered plant found at two locations on the site.

SRS also is home to many sensitive species, including 28 plants, five birds, three reptiles, one fish, two mussels, three mammals, an amphibian, and an insect. These are species, without ESA protection, for which the population viability is of concern to the USFS. The purpose of identifying sensitive species is to ensure species viability and to prevent any trend toward endangerment that would result in the need for federal listing under the ESA.



C06

Recreation

Overview/Program Description

Trails

SRFS has constructed and maintains three walking trails at SRS to provide opportunities for employees to exercise during lunch breaks and nonworking hours. The Piney Woods Trail is on the north side of SRS Road 1, across from the 700-Area. The "S" Area Trail is on the north side of SRS Road F across from S Area complex. The third trail is located at the SRFS administrative site.

Boy Scout Camporee

SRFS supports SRS each year in hosting the annual Georgia-Carolina Boy Scout Council Fall Camporee, where about 500 Scouts work toward merit badges during a weekend of camping and other activities on the site.

Hunting/Fishing

A portion of SRS is open to the public for hunting and fishing. Public hunts are allowed under DOE Order 4300.1C, which states that "all installations having suitable land and water areas will have programs for the harvesting of fish and wildlife by the public." The Crackerneck Wildlife Management Area is comprised of 4,780 acres of the site located adjacent to the Savannah River. This area is

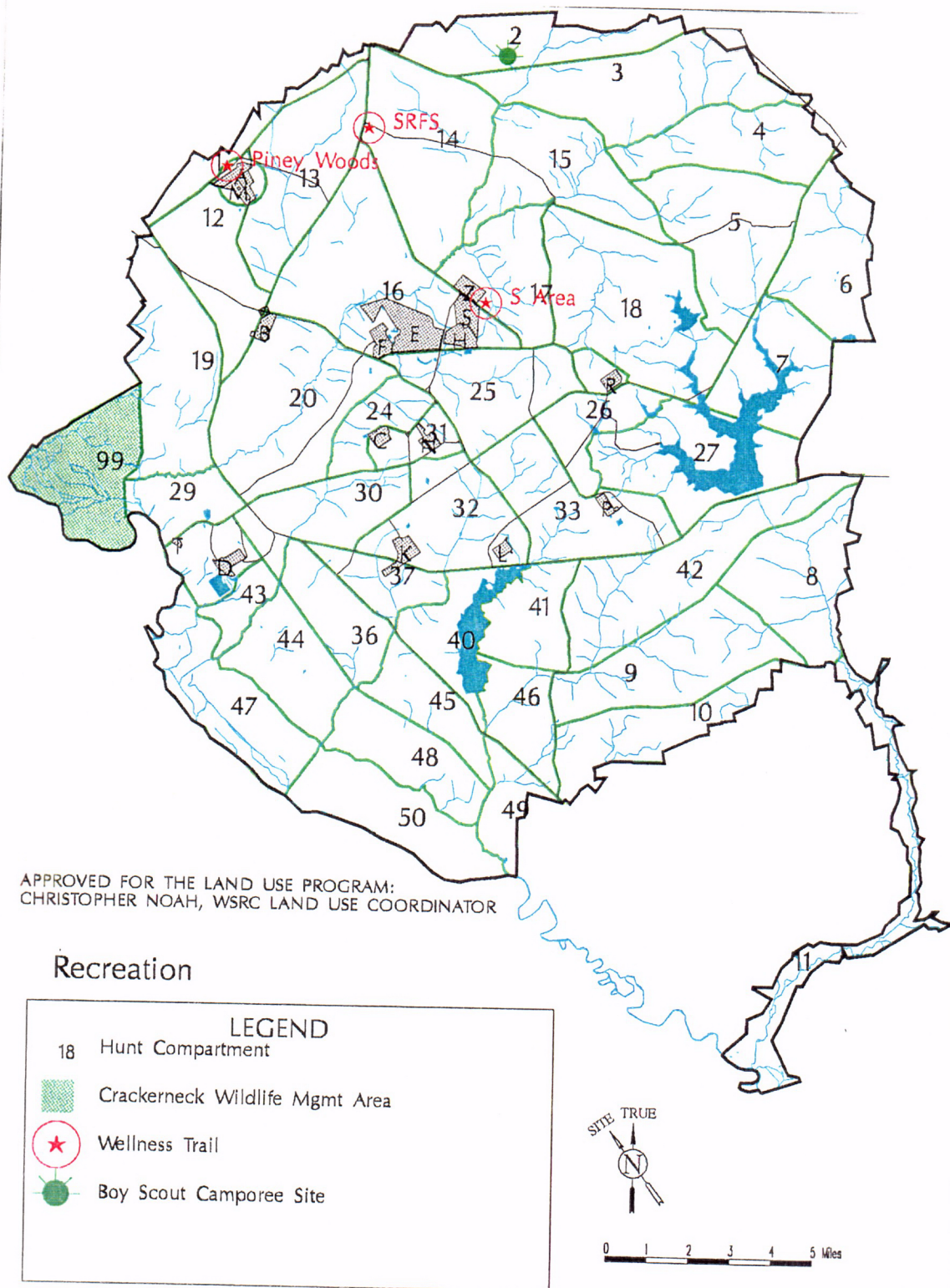
Sportsmen must obtain a permit to hunt or fish this area; however, there is no charge. cooperatively managed by SRFS and the South Carolina Department of Natural Resources. Opportunities exist to hunt waterfowl and big (deer, hogs, and turkeys) and small (quail, squirrels, and rabbits) game, and to catch a variety of fish.

Controlled Hunts

Hunting opportunities also are available on much of the rest of the site. SRFS is responsible for developing and coordinating a comprehensive deer control program—in close cooperation with WSRC, SREL, the South Carolina Department of Natural Resources, and Wackenhut Security, Inc. Recreation is not the primary purpose of these controlled hunts. The mission of this activity is to conduct harvests that will

- lower the incidence of animal-vehicle collisions on site
- produce a healthy deer population
- reduce the feral hog damage to valuable plant communities, reforestation efforts, and ecological research sites

There is a \$50 fee to hunt, and hunters are chosen at random from a list of those who registered. Each animal harvested is monitored for contaminants, and harvest data such as age, sex, and weight are compiled.



Compiled by: SRSF-GIS, New Ellenton, SC on September 07, 1995 using current GIS data.

C07

RCRA/CERCLA Waste Units and Site Evaluations

Overview/Program Description

SRS manages waste materials regulated under Resource Conservation and Recovery Act (RCRA), a comprehensive law requiring stringent management of hazardous waste/constituents. The Hazardous and Solid Waste Amendments were passed in 1984 to further augment RCRA. Regulated units are surface impoundments, landfills, and waste piles (collectively termed "land disposal units") that have received hazardous waste since November 19, 1980, and that require RCRA operating or post-closure permits. Nonregulated units, termed Solid Waste Management Units, may include any activity where hazardous constituents may remain uncontrolled and potentially released to the environment. Investigations and corrective actions at these units are mandated by RCRA Section 3004(u).

On December 21, 1989, SRS was placed on the National Priority List. A site included on the list falls under the jurisdiction of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986. These acts impose requirements for the remediation of hazardous substance releases and of inactive hazardous waste disposal sites. The National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR 300) was established under Section 105 of CERCLA. Its purpose is to provide the organizational structure and procedures required to prepare for and respond to discharges of oil and releases of hazardous substances, pollutants, and contaminants.

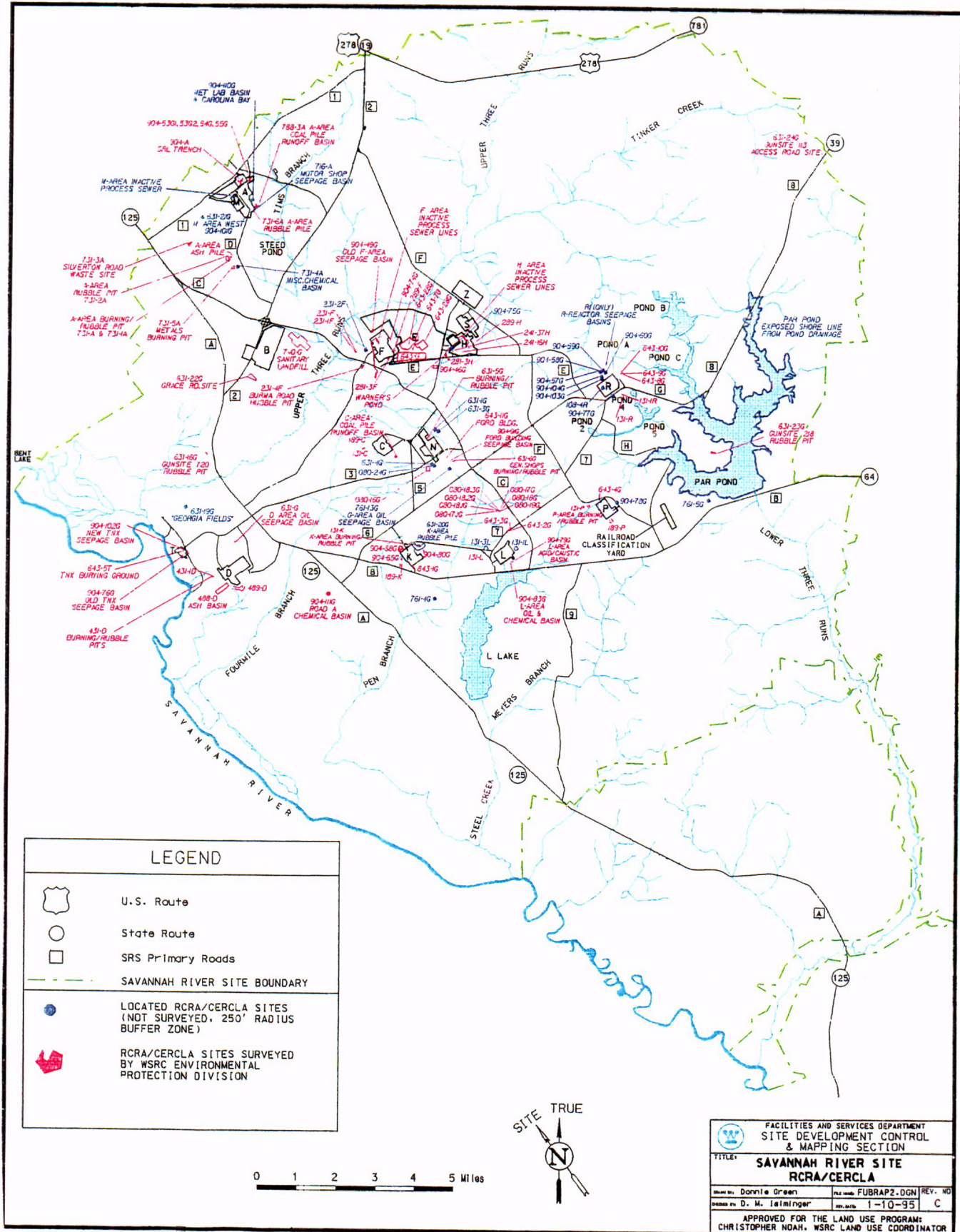
According to Section 120 of CERCLA, DOE has negotiated a Federal Facility Agreement (FFA) with EPA and SCDHEC to coordinate remedial activities at SRS into one comprehensive strategy that fulfills both RCRA 3004(u) and CERCLA investigation and remedial action requirements. Figure 6-26 shows the location of RCRA Facility Investigation/Remedial Investigation units listed in the FFA, which was executed January 15, 1993, with an effective date of August 16, 1993.

Purpose/Mission

The SRS Site Evaluation List, Appendix G, of the FFA, identifies areas that will require an initial evaluation to determine if remedial action is necessary. Approximately 300 such areas have been identified as potential waste units at SRS. Appendix C, the RCRA/CERCLA Units List, identifies waste units that will be subject to the integrated remedial investigation program specified in the FFA. Appendix H of the FFA lists the RCRA-regulated units subject to corrective action under the South Carolina-designated program.

SRS is in the process of coding waste sites according to the FFA schedule. The F-Area Burning/Rubble Pits, the D-Area Burning Rubble Pits, the Burma Road Rubble Pit, the Old F-Area Seepage Basin, the Silverton Road Waste Site, the M-Area West, and the L-Area Oil/Chemical Basin and Acid/Caustic Basin have an FFA fiscal year 1995 commitment for a "Corrective Measure Study/Feasibility Study Report."

Appendix H Relevant Maps From the SRS Land-Use Baseline Report



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Appendix I Responsiveness Summary

Comments on Draft Future Use Project Report, Revision 0, October 1995, with SRS Responses

The following comments were received by Don Druelle, DOE-SR Future Use Project Leader. The comments are shown in italics and the responses are shown in plain text.

This is an excellent draft product. While I have not seen the missing enclosures, you and your team "caught" the feeling and concerns of all of the stakeholders. In addition you did an excellent job of compiling the information into a usable document.

Your document did bring us several new concerns that to date I have not heard mentioned:

- a. *With all of the millions of tax dollars being spent to clean up SRS, I can not believe SRS would allow a new industry to come on site and further contaminate the ground or surface water.*

While I would prefer to see only federal research or state college level (SREL) education at SRS, the decision may be made to allow public or corporate industry to locate on SRS.

My concern is the inability of Westinghouse or DOE to monitor and then control any contamination caused by this new industry. Then the question of whose contamination it is, was it there before the industry dumped its waste on the ground. Who will pay to clean it up. Then the law suits. Private land is worthless once contaminated. Best to contaminate federal property if you are a business. For that reason, this document needs to state only "environmentally safe" private or corporate clean industries will be permitted to lease land. industry that poses no threat to the environment.

This does not even get into the question of "favoring" one business over another. Once you allow one "of a kind" how are you to stop "another" of the same kind.

My recommendation is to not allow any that are not completely "environmentally clean." Then you have less of a problem.

Response 1. Any new industry that is allowed on SRS property will be required to seek appropriate environmental permits from the State of South Carolina and the Environmental Protection Agency. In addition, the lease agreement will require the industry to close the site in an environmentally protective manner and will also require any post-closure monitoring. A financial disclosure statement will also be required to assure that a private industry will have the finances to perform any remediations activities, if needed. The Department will remain responsible for any pre-existing conditions.

- b. *Page 7, Para. 2.1.1 (5) Commercial industrialization of industry zones needs to have an additional "bullet" added.*

Appendix I Responsiveness Summary

I remember at one of the meetings adding this "bullet." It was probable one that the minutes have not yet been included.

Small critical ecology areas may be identified in an Industrial Zone. These sites need to be identified and protected with easements and buffer zones.

Response 2. The bullet is correct as shown. Although there was discussion about the ecological zones, the final recommendation did not include this "bullet". However, this is included in the discussion in the Vision document. Please see *Appendix B, Citizens Advisory Board Vision Document*.

Please emphasize DOE shall vigorously pursue commercial industrialization of approximately 1/3 of site land area. I would like to see them issue a Request for Proposal to a real developer.

Response 3. While we agree that we should allow commercial industrialization on SRS property, we have not completely industrialized the 10% of the land currently "zoned" as industrial. We would prefer to use existing industrial areas for future industrial uses before we consider using previously undeveloped land.

The Savannah River Site (SRS) Future Use Project has yet to develop a credible strategy for incorporating land use planning into decision-making. The analysis and conclusions offered in the draft report were not developed through an effective public participation process. In addition, the draft report does not reflect a well developed, implementable plan. The findings of the report would be better presented as the early, and inconclusive, results of a process which must continue if a quality product is to be produced.

Response 4. The SRS Future Use Project Report was not intended to be a planning nor a decision-making document. The objective of the report was to determine interested stakeholders' future use options. Planning activities and resulting documentation are done through an independent process. The data provided in the this report will be analyzed and considered in future long-term planning and decision-making activities. Although the final report does not reflect a consensus recommendation, all comments gathered during the project were shared in full with the Citizens Advisory Board, which does have federal advisory committee status and provided specific recommendations. The recommendations in this report parallel and, in all but three instances, duplicate the consensus recommendations of the Citizens Advisory Board.

Below are several of our specific concerns related to the draft report. Since we believe the report needs substantial revision, we request that a revised draft be issued for additional comment before the report is finalized.

Process. The draft report fails to adequately discuss the process by which public input was solicited. Instead it presents too strong an image of agreement and conclusiveness, even referring to the results as "stakeholder-preferred options."

In fact, though, the public participation process was unnecessarily divisive and did not include the kind of meaningful dialogue or substantive discussions necessary to evaluate the merits of various options, let alone truly arrive at a list of alternatives preferred by the public.

Response 5. The input process is now explicitly described and the lack of consensus explained. We believe that, because the majority of comments fit into a number of specific themes and because these themes so closely match the consensus-driven CAB recommendations, these can truly meet the definition of "recommendations." Furthermore, comments and preferences that did not fit particular themes are also included.

There was often poor cooperation between the Department of Energy (DOE) and the SRS Citizens Advisory Board (CAB) Risk Management and Future Use Subcommittee. For example, DOE frequently changed its plans for working with the Subcommittee. At the beginning of the process, DOE approached the Subcommittee about jointly sponsoring the first meeting, then reneged on the offer and almost made no mention of the CAB's role during the meeting. Similar actions continued throughout the process, and while better cooperation was eventually established, the degree varied considerably from meeting to meeting.

Response 6. Admittedly there were difficulties in defining the roles the Future Use Project Team and the Citizens Advisory Board subcommittee. The example cited above is typical of the unintended results of letting the public define the meeting agenda and was not meant to diminish the role of the subcommittee. We believe the final product proves how mutually supportive that process was.

Additionally, the nature of DOE's public meetings allowed little opportunity for detailed discussion of the merits of various comments, including the potential implications of acting upon them. Instead the meetings were more designed to simply record whatever thoughts were offered. Consequently, there was no meaningful effort to understand differences among various opinions or to arrive at agreement among the parties participating. There was also inadequate opportunity for participants to openly develop their ideas into a workable plan.

The final report should describe public input received to date as a foundation on which future discussions could be based to perhaps eventually arrive at a better, more representative plan. It should also propose a plan to bring concerned citizens together in a meaningful dialogue to develop a workable method for better considering land use planning in decision making at SRS.

Response 7. At our first public meeting, we were asked to accept all comments as meritorious and to include each in our report. Further, many participants asked the Department to develop strawman options and a public participation plan for their consideration and approval. The public participation plan, focusing on both DOE and CAB, was approved by the involved stakeholders, and the strawman options provided a starting point for discussions and brainstorming. Please see Response 4.

"Stakeholder Preferences". The failure of the process is apparent when analyzing the details of the report. This is simply not an adequate plan on which to base the many important decisions which could ultimately be impacted by land use. Several of our more significant concerns in this regard are described below.

The first so-called stakeholder-preference is that, "SRS boundaries should remain unchanged, and the land should remain under the ownership of the federal government." (p.1) The text

Appendix I Responsiveness Summary

acknowledges public disagreement with this preference, highlighting the fact that the process did not reach definitive conclusions.

Please see Response 4.

Additionally, the rationale offered for maintaining the land intact is an insufficient basis for decision making. For example, keeping boundaries intact for "security and safety concerns" does not reflect consideration of actual site conditions which don't necessarily require the existing boundaries for maintenance of security and protection of the public. It also doesn't reflect changes which might occur over time as conditions and local needs evolve. The other principal rationale offered for keeping the current site boundaries is the view of SRS as a national asset for "future national needs" and a location for environmental research. Again, this may support long-term federal control of some portion of the land but not necessarily all of it.

Response 8. The majority of stakeholder comments on this theme did not qualify or define specific future needs, merely the fact that the current activities, including environmental research and future national security efforts could benefit from an intact SRS.

The second so-called stakeholder-preference is that, "Residential uses of SRS land should be prohibited." Public comments recorded in the document, though, show that some citizens suggested limiting - not prohibiting - residential development. (p. A-3) This is an important distinction because it demonstrates that some citizens recognize the differences in risk associated with various parts of SRS and that pressures to residentially develop some portion of SRS may emerge. Consequently, decision makers would do better to keep the potential for residential use in mind than to assume that it will be prohibited.

Response 9. We agree that a few individuals desired limited residential use. However, it was clearly evident that the majority of stakeholders did not want residential uses.

The fifth so-called stakeholder-preference is that, "All SRS land should be available for multiple use (e.g., ecological research, natural resource management, research and technology demonstration, and recreation)." (p. 2) The explanatory text, though, only indicates that many citizens expressed an interest in "continuing, if not expanding" current multiple use practices. This is an important difference since maintaining some land areas for exclusive uses (e.g., ecological research set asides, security zones) might be important.

Response 10. Under the National Environmental Research Park (NERP) concept, multiple use of SRS land can continue by allowing ecological research, natural resource management, research and technology demonstration, and recreation. However, the appropriateness of any combination of uses would be determined in specific planning documents.

The SRS Future Use Project has introduced many ideas of land use planning to communities around SRS and begun cataloging public concerns and opinions. Building upon this foundation to obtain agreement among diverse interests and create a credible, implementable future use plan will require considerably more work. As this work continues, it is important for DOE to remember that regulatory and other key decisions which might consider land use should be based on a well

reasoned plan that is consistent with the Department's many responsibilities, not merely on the stated wishes of any particular group(s).

Response 11. We agree that planning and decision-making activities will require continued public input which will require a review and update of the stakeholder-preferred future use options described in this report at some point in the future.

I have received the package on the potential future projects here at SRS. I was disturbed by some of the comments that people made, but one thing I am sure of is there is a lot of fear and ignorance about the site. Growing up in New Ellenton, I was in the company of people who worked at SRS and I, too, knew nothing about the SRS because of the code of silence. Now that the media has examined and cross-examined the site, you would think people would wise up. There is so much mistrust about the government. I praise the job you and your staff are doing. I've been employed on the site now for 13 years, and things have changed. I remember well the code of silence.

I've been an avid hunter all my life so you know where this letter is going. If you were a hunter, you would understand why I'm pushing for this land to come under the SCDNR. Private land owners are going to where the money is, and that is leasing their land to out-of-state stakeholders such as Florida and North Carolina. Did you know that land per acre is paying \$30.00 for hunting rights. Where does this leave the middle class and lower class? There is nowhere to hunt because currently the land is being over crowded. I would like to thank DOE for expanding Crackerneck. There was an accident waiting to happen if they hadn't, due to overcrowding. I would like to see the area west of 125 opened up to SCDNR and other areas as well for hunting and recreation but not for industry other than DOE, and the boundaries should be tightened. Sandia Labs and Lawrence Livermore don't take up that much space. Let's protect the environment and protect endangered species. I would like my children to be able to walk the woods of SRS with their children and explore the beauty and receive the bounty of this beautiful place that I've grown up on and worked on. I don't think I have to make you knowledgeable of the fact that hunting and fishing in South Carolina are their largest money makers in our state.

Response 12. As you know, there is limited hunting allowed on SRS property now, and we have given some additional land to South Carolina Department of Natural Resources on a trial basis for one year. After one year, we will evaluate this decision. About your comment on additional land available for recreational use, we will continue to look at each proposal on a case-by-case basis; for example, Boy Scouts have used portions of SRS lands for the last few years for their Camporee, and now Girl Scouts are using parts of SRS land for their activities.

Appendix B Citizens Advisory Board Recommendations (page B-1) of the subject report states that the RMFUS' "vision" document will be included in this appendix in the final report if completed in time.

This timeframe for inclusion of the Subcommittee's workproduct which reflects its consensus-building efforts and gives justification for, support of, and the reasoning behind the CAB Recommendations is not known to me. However, knowing the amount of time and effort put forth by all parties, I cannot believe the SRS Future Use Project Team would publish the final project report without such "vision" document.

Appendix I Responsiveness Summary

Response 13. We agree that the Vision document should be included in the report and were glad that the SRS Citizens Advisory Board voted on the final version in time for this report. See Appendix B for the final Vision document, as voted on by the SRS Citizens Advisory Board on January 23, 1996.

Thank you for the opportunity to comment on the October Draft of SRS Future Use Project Report. I find the draft to be inadequate and almost shows an abdication of DOE-SR responsibility for SRS future use of ESR lands to DOE-HQ. I recommend strongly that this report be rewritten and reissued for comments before it is sent to DOE-HQ. I have reached these strong conclusions from the following:

- *Having been involved in this activity for the last 1 to 1-1/4 years, the report doesn't seem to display any process for reaching consensus among the stakeholders nor no DOE-SR views on the future use of SRS lands.*

Response 14. Because some of our stakeholders wanted to use the SRS Citizens Advisory Board and others wanted to provide input directly to DOE on their preferences, we did not design the process to reach consensus. However, the report recommendations do reflect the majority of opinions we received during the process.

In addition, we have included the DOE-SR views of future use of SRS lands. See Section 2.1.4, *Savannah River Operations Office Recommendations*.

- *I participated in most of the public meetings and they were all meetings (as listed in Section 1.3.2) to listen to the public's views on future use of these lands. This resulted in a diverse set of comments identified in Appendix A but no attempt, at those meetings, to reach consensus and I see none in the report except into the very general categories discussed.*

Response 15. You are correct. See Response 4.

- *The SRS Citizens Advisory Board went through a more complete process of obtaining stakeholder input (from a smaller population consisting of those attending the CAB subcommittee on Risk Management and Future use and the CAB itself) and reaching consensus on a vision for SRS Future Use. As a result, the CAB made a nine part recommendation to DOE several months ago (listed in your report as Appendix B). Six of the nine part recommendation show up as themes in the Executive Summary and Section 1.2 of your draft report. The following parts were omitted:*
 - *Research and technology demonstration (Part 6 of the CAB recommendation)*
 - *Natural resource management striving for biodiversity (Part 7 of the CAB recommendation)*
 - *Increased recreational opportunities (Part 8 of the CAB recommendation).*

The reason for omitting these three parts, which are in good agreement with many of the comments received at the public meetings, as themes is not clear to this reviewer. They should be included. (The CAB consensus was by far the most complete effort described in this report.)

Response 16. We have revised the report to more closely follow the recommendations of the SRS Citizens Advisory Board. Our intent in the first draft of this report was to include the CAB's recommendation, but due to editing, the meaning was lost.

- *Section 2.1.2 is given equal weight to the CAB recommendation in Section 2.1.1 suggesting that the Citizens for Environmental Justice went through a similar process. The report is silent on what the group did and the level of consideration provided by that group. Appendix C doesn't indicate that the Citizens for Environmental Justice reached consensus. How were the views expressed in Section 2.1.2 reached? The consensus does not seem to represent the individual views.*

Response 17. The Citizens for Environmental Justice did not provide us with the details on the process they used for their recommendations on future use. However, we do know that they held a one-day workshop on future use in Savannah and presume that the recommendations were provided as a result of that workshop.

- *The Site Land Use Technical Committee information should be made available for review. The conclusions of these "23 senior technical experts" represent a significant and important group of stakeholders.*

Response 18. We agree. We have included their recommendations in the final report.

- *I conclude that no other group provided recommendations by the absence of information in Appendix G.*

Response 19. You are correct. No other group has provided recommendations to DOE-SR.

- *Appendix F identifies the Future Use Project Team and Section 1.3.2 infers this group briefed a number of clubs and organizations (listed in Appendix G) but I could find no input from these organizations. It sounds like these groups said "nice presentation and thank you for coming" but gave no input. That seems incredible to me; the input obtained should be included.*

Response 20. Of the groups listed, only the SRS Citizens Advisory Board, SRS Land Use Technical Committee, and Citizens for Environmental Justice chose to provide DOE-SR with recommendations on future use.

- *A section should be added on stakeholder participation resulting from mail-outs provided for this project. I am sure you received comments from these extensive mailings. This section should also include the level of effort your staff has expended obtaining these comments (both in mail-outs and responses received). SRS should benefit from attempts to get comments even though, in some cases, comments were not received. Those receiving the mailings were given the opportunity to respond. (You can lead a horse to water but you cannot make him drink.)*

Response 21. We agree and have added Section 2.5 to the report to include what we heard from public meetings and mailings.

Appendix I Responsiveness Summary

- *The report contains no information on individual participation in the process. The number of individuals, the type of stakeholders (internal and external) and location are needed. This would help readers of the report understand the level of stakeholder input and the regional diversity of the comments.*

Response 22. It would be difficult to provide the statistics you requested because people from various parts of South Carolina attended public meetings outside their "home" area. For example, at the meeting in Beaufort, the most of the people who attended were from North Augusta and Aiken, South Carolina.

- *The report lacks clarity. I did not provide these specific comments since I expect my major comments to be incorporated and the document reissued. If you desire specific comments, have someone call me.*

Response 23. Thank you for your suggestions. We did talk to you on January 17, 1996, and you provided some additional comments which we believe have made the report better. Thank you.

Per your invitation for public comments regarding the future use of the Savannah River Site, those participants at the November 4-6 meeting of the From Trident To Life Campaign, a Southeast Regional campaign to redirect resources from military spending toward the meeting of human needs, meeting in Columbus, Georgia, wish to transmit to you the following comments:

- *All nuclear production should be halted.*
- *No tritium production facility should be constructed.*

Response 24. We are no longer producing plutonium and tritium due to the end of the Cold War; however, the Department must maintain this capability and retains the mission of recycling tritium in the active weapons stockpile. A Record of Decision on the Final Programmatic Environmental Impact Statement for Tritium Supply and Recycling was issued on December 6, 1995. It recommended an accelerator or a commercial reactor as the new tritium supply technology with SRS being the preferred site for an accelerator.

- *There should be no residential development (except that one was, to general approbation, suggested the possible exception of a retirement community for former DOE and Westinghouse management).*

Response 25. No residential use is one of the recommendations made in this report.

- *Nuclear materials from other countries should not be stored at SRS.*

Response 26. The only nuclear materials being considered for storage at SRS are spent nuclear fuel that the United States lent to other countries for their universities to study, and various National Environmental Policy Act documents have been prepared and additional documents are being prepared to address this issue. The Record of Decision for the *Environmental Assessment for Urgent Relief Acceptance of Foreign Research Reactor Spent Nuclear Fuel* determined that there would be minimal, if any, increased environmental effects from temporarily storing spent nuclear fuel at SRS. In addition, another document called the *Proposed Policy for the Acceptance*

Appendix I Responsiveness Summary

of U. S. Origin Foreign Research Reactor Spent Nuclear Fuel Programmatic Environmental Impact Statement is currently being prepared and is expected to be released in January 1996 with a Record of Decision projected for February. This Environmental Impact Statement will address spent nuclear fuel from other countries.

- *The only appropriate industrial activity would be the development and use of cleanup and containment technologies for nuclear and hazardous wastes.*

Response 27. We agree that development of cleanup and containment technologies for nuclear and hazardous wastes are industrial activities that should take place on SRS property; however, with over 310 square miles, we also believe there are other possible uses for the land. See the recommendations from the stakeholders in the Executive Summary and *Section 1.2, Stakeholder Recommendations for Future Uses.*

- *Savannah River Site should begin consultation with the Nuclear Guardianship Project in order to develop a very long-term method of safeguarding the mess there.*

Response 28. DOE welcomes public input in all of its planning and decision making.

- *We are opposed to privatization of the Site.*

Response 29. While we considered your comment, most stakeholders disagreed and expressed an interest in additional industrialization on the site. This report reflects all recommendations provided to DOE in summary form, including no private industry on the site. However, current Congressional guidance and Executive Branch policy is to save tax dollars through privatization, where appropriate.

Thank you very much for your consideration of our wishes.

On behalf of the From Trident To Life Campaign, I am yours for a Nuclear-free Future.

The draft report does a good job of capturing the common land use themes but not the future use themes. My interpretation of future use includes these and there were certainly many future uses suggested; active pursuit of these was recommended. "Having land available for many uses" is necessary but not sufficient. For instance, the government missions section only discusses the current activities but not future possible ones such as tritium production, HEU stabilization and temporary storage, plutonium pit manufacture, etc.

Response 30. We have modified the explanation of industrial uses at SRS to incorporate your comment.

The request for this report came from DOE-HQ and I consider DOE-SR also a local stakeholder. What does DOE-SR recommend? It seems to me that DOE-SR should synthesize the input from the local internal contractors and the local external public stakeholders, add the DOE-SR input and come up with a set of recommendations to DOE-HQ. The report suffers from the lack of recommendations to DOE-HQ.

Appendix I Responsiveness Summary

Response 31. We have included the DOE-SR views of future use of SRS lands. See *Section 2.1.4, Savannah River Operations Office Recommendations*. DOE-HQ has not provided any recommendations as they want to know what internal and external stakeholders recommended. A summary report of all DOE sites recommendations is currently being prepared and should be available in March 1996.

A future land use map should also be included from DOE-SR and the internal stakeholders. Except for public stakeholders and the Citizens Advisory Board (CAB) recommendation 8, the only indication for land use zoning is reference to multiple use including industrial. In my view, that will not be sufficient with the regulators (EPA and DHEC) to allow industrial clean up standards to be used for actions on SRS. I also do not believe that they would allow industrial standards to be used for the whole 300 square miles. I believe that they are receptive to considering such standards for parts of the site where clearly they are appropriate - only if DOE formally makes a land use commitment. Such a commitment by DOE is cheap to do and will save millions of taxpayer dollars. A land use map is included as part of the CAB recommendation 8 but there is no reaction to it by DOE-SR. I believe that the CAB is expecting DOE-SR reaction to all nine parts of recommendation 8. I expect that is also true of the rest of the stakeholders. Hence, it is important for DOE-SR to give their response in the form of recommendation to DOE-HQ. This report is the place to do it.

Response 32. The second draft and final report of the Future Use Project included a map provided by DOE-SR as well as a recommendation. This map is the preferred map as it does not allocate as much land for industrialization as the SRS CAB-recommended map. We are not using all the currently "zoned" industrial areas now which are only 10% of the site land. We would prefer to use currently industrial areas before using previously undeveloped land.

Many will only read the Executive Summary. The current draft discusses the groups giving input but no mention is made of the internal stakeholders and their report. I hope that by your listing of external stakeholder groups that you did not mean to imply that you gave more weight to input from the CFEJ than the CAB; it wasn't even alphabetical.

In conclusion, the draft report does a good job of explaining what was done and what input was received. It needs to be strengthened by inclusion of DOE-SR recommendations to DOE-HQ including a land use map.

Response 33. All stakeholders comments and recommendations were considered in developing the recommendations. DOE-SR's recommendation can be found in *Section 2.1.4, Savannah River Operations Office Recommendations*.

Last week I received a copy of Revision 0 of the Future Use Project Report and appreciate you including me on your mailing list. The report seemed to be fairly complete and detailed as I remember the meeting I attended in Beaufort, SC. The concerns of the former landowners were well documented in several places in the report.

Since talking to you at the Beaufort meeting, I have received a letter from Mr. Donald Pearman of the Department of Energy through Senator Thurmond's office basically explaining that even though my "views" will be considered, any property determined to be excess will be disposed of

by the General Services Administration through official actions required by the Federal Property and Administrative Service Act of 1949 "offering it for sale to the general public on a competitive basis." .

Response 34. Because we recognize the close ties that many former landowners have to the SRS lands, we have modified the third recommendation to read: "If DOE or the federal government should ever decide to sell any of the SRS land, then DOE shall seek legislation to permit former landowners (as of 1950-52) and/or their descendants to have the first option to buy back the land they once owned."

So, since the interests' of the former landowners is a moot question, I have only one more comment (or request of DOE). At the Beaufort meeting, I pointed out that steps I understand were taken by DOE at Los Alamos, New Mexico, and Hanford, Washington, to document those areas by providing museum displays, etc. At that meeting Mr. Rick Ford, I believe of the Aiken DOE public relations office, told me unofficially that he thought surely some monies could be made available to museum the artifacts and other historical memorabilia available to document the area and towns before the coming of the plant to SC.

My request is for you to follow up this possibility with Mr. Ford and others to at least see a museum become a reality. The USC Architecture Department does not have a strong interest in this as a project. Mr. Hamer of the SC State Museum in Columbia and I would welcome working with you if such a project could be funded. Let me know if I may assist you in this area.

Response 35. While, in these times of tightening of federal budgets, it is difficult to find the funding for such projects, we and a number of external stakeholders are pursuing the idea of a visitors center for SRS and welcome your participation. Any description of site history would include the sacrifices former landowners made, as you have described.

Thank you for allowing my input as minimal as it may be.

Comments on Draft Future Use Project Report, Revision 1, January 1996, with SRS Responses

Thank you for the opportunity to comment on the new (January 1996) Draft of "SRS Future Use Project Report". I find the draft to be much improved over the October 1995 draft. Thank you for incorporating many of my suggested corrections. Our telephone conversation on your intent for the document helped clear up some of the points I have on this January report.

I would like to make the following comments on Revision 1. They are:

- The report identifies themes and says (on P.i) they are called recommendations. Please add a sentence or two saying how these themes became recommendations and who's recommendations they are (DOE-SR, the Future Use Project Team or who). I support these being called recommendations; it adds strength to the document. Revise the report title to include recommendations. For example, "Stakeholder-Preferred Options for SRS Land and Facilities and _____ (who's) Recommendations for SRS Land Use".*

Appendix I Responsiveness Summary

Response 36. We have changed the title of this report to *Savannah River Site Future Use Project Report, Stakeholder-Preferred Recommendations for SRS Land and Facilities*.

- *According to our phone conversation, Section 1 is intended to represent the Future Use Project Team's conclusion. To give balance I believe that the section needs a paragraph on the Team's conclusions from the comments received from those attending the public meetings.*

Response 37. We have added Section 2.5 to include the comments DOE-SR heard from public meetings and mailings. Section 1 is a brief summary of all comments and Section 2 is more details of recommendations from various groups and individuals.

- *As we discussed, Section 2 is a summary made by the Future Use Project Team of the major groups comments. The section provides a summary of the CAB Subcommittee, the Environmental Justice, the SRS LUTC, and the SRO recommendations. It omits the summary of comments from the public meetings, the letters and telephone comments received. Please include a summary of this input in Section 2.*

Response 38. We have added Section 2.5 to include comments from public meetings, mailings, and telephone calls.

- *Recommendation five on page 13 and on page D-4 uses the word "crated" which I expect should be "created". Please correct it in Section 2 (I don't feel correction is necessary in the Appendix since it is a quote of the report received.)*

Response 39. This was a typographical mistake in both places which has been corrected.

- *That same recommendation quotes a member of the Water Branch of Georgia's Environmental Protection Branch. It may be a correct quote but the facts do not sound credible. Please have someone verify that they are correct. If found to be incorrect, do not use the quote in Section 2.*

Response 40. This is a correct quote.

- *In several places, Section 2 uses the same words as used in the LUTC letter. This section is a summary prepared by the Future Use Project Team and should be carefully worded to ensure it is correct. For example in the middle of page 14 the sentence says "While important for future-use planning, the establishment of use and activity zones was not considered in the report." The statement is correct for the LUTC report and in Appendix D but is not correct in Section 2 since the CAB referenced material does not use this term. (see Section 2.1.1.)*

Response 41. This has been corrected.

- *I question the benefit of having two figures in Section 2. If both figures are retained, explain the differences and their significance.*

Response 42. There are two maps included in the report, one was the map recommended by the SRS Citizens Advisory Board and one recommended by DOE-SR. We have added wording in each section explaining the maps.

Appendix I Responsiveness Summary

- *Add references to the CAB Recommendation 8 and the CAB backup document in Section 3. Also add the reference to the Citizens for Environmental Justice input.*

Response 43. We have added the references you suggested as well as adding the Land Use Technical Committee as a reference.

- *As we discussed by phone, Appendix A is suppose to represent all stakeholders' comments. Since the land use category "Cultural and Archaeological" section says no comments were received in this land use and pages C-1 discusses cemeteries and grave-yards and D-4 and D-12 have recommendation 6 on cultural resources, I must question the completeness of Appendix A. Please have Appendix A checked for completeness and modify as needed.*

Response 44. We have checked the Appendix A for completeness and have modified as you have suggested.

- *Since Appendices B, C, and D are reproductions of reports received on Future Use, I propose a lead in paragraph telling the reader that the following materials is a verbatim copy of the group's document. I think the source reference should be added in the paragraph. I further suggest reducing the print size and slightly indenting the quoted material so it is obviously a quoted source.*

Response 45. We have added a paragraph to each appendix as you suggested. We have also changed the body of the report to two columns to differentiate it from the appendices.

- *A section should be added to the report on stakeholder participation from mailings on this project. I am sure you received comments from these extensive mailings. This section should also include the level of effort your staff has expended obtaining these comments (both in mail-outs and responses received).*

Response 46. We have added Section 2.5 for the comments received from public meetings, mailings, and phone comments.

- *The report contains no information on the number of individuals participating in the process. The type of stakeholders (internal and external) and locations are needed. This would help readers of the report understand the level of stakeholder input and the regional diversity of these comments.*

Response 47. We have the total number of people who participated in the public meetings, but because many local residents added meetings in other regions, this information does not necessarily reflect accurate geographic diversity.

I have received a copy of Revision 1 of the Future Use Project Report. I think the thoughts of former residents of the area have been heard in that there are as many as nine references to former area residents or descendants. Also, my comments to the Revision 0 in November to you, I mentioned my desire for funding of a museum to preserve the heritage of the area. These comments have also been referenced in Revision 1.

Appendix I Responsiveness Summary

My only concern now is that I do hope DOE will go forward with this idea of a museum. Surely if DOE can absorb "as much as \$1 million" mistakes due to the installation of wrong flanges by Bechtel Savannah River Company, \$50-100,000 could be found for an educational purpose. Please help by pursuing this project.

Response 48. While, in these times of tightening of federal budgets, it is difficult to find the funding for such projects, we and a number of external stakeholders are pursuing the idea of a visitors center for SRS and welcome your participation.

We have seen a copy of the latest draft of the SRS Future Use Project Report. We are concerned about its conclusions on the relationship between land use and protection of human health. We certainly object to the reference to "stakeholder-preferred options" and "stakeholder recommendations." As "stakeholders" ourselves, we do not consider that there has been proper analysis of the comments you have received, and we certainly have not noted any consensus-building efforts on DOE's part.

See Response 4.

You recommend that residential uses of SRS land should be prohibited and immediately thereafter say that DOE will seek legislation to assure that former owners have the first option to buy back what was once their land. For what purpose? To provide a vantage point to enjoy a desolate nuclear dump area?

Response 49. As the report states individual purchase is not currently possible, but would be pursued if conditions changed.

We are very much concerned about the current push to "privatize" many of the functions of SRS, and to move them off-site. The current plan to move the plant laundry operation off-site and turn it over to a private firm already cited for misbehavior at other sites, is a case in point. In the beginning, Aiken County turned over a huge area for SRS use. Evidently the present plan is to sprinkle the remaining county territory, particularly the north end of the county, with transplanted, privatized operations from the plant reservation.

The infrastructure to support such operations exists only in the plant reservation—it would have to be provided at taxpayer expense off-site.

We would become famous as "Aiken County—the county that glows in the dark"! We desperately need to diversify local industry, to protect our economic future. But if you carry out this off-plant privatization scheme, what chance would we ever have on attracting, say, something like the Volvo plant? And do you understand the property value damage that is done to communities out in the county when you move such projects in among them?

DOE and SRS are beginning to be considered bad neighbors in Aiken County.

See Response 29.

Please include the Land-Use Baseline Report as one of the appendices.

Response 50. Due to the costs involved in copying numerous color maps, we have included parts of the Land-Use Baseline Report. See Appendix H, *Relevant Maps From the SRS Land-Use Baseline Report*.

Please do not use words like "minority" and "disadvantaged"; instead use words like "people of color", "economically disadvantaged", or "disenfranchised."

Response 51. We have changed the wording as you have suggested.

The Executive Summary needs a vision statement, similar to the one in the Citizens Advisory Board Vision document.

Response 52. We have added a vision statement, as you have suggested.

The SRS Land-Use Baseline Report is a valuable document and should be included as an appendix in the SRS Future Use Project Report.

Response 53. We have cited the SRS Land-Use Baseline Report as a reference, but due to costs of copying the color maps, we could not use the document as an appendix. However, we have added Appendix H, *Relevant Maps From the Land-Use Baseline Report* which has several maps. The SRS Land-Use Baseline Report can be seen at the DOE Reading and copies are available by contacting:

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We are writing to express concern about the January 1996 draft Savannah River Site Future Use Project Report. The relationship between land use and the protection of public health and the environment is important, and related decisions should be supported by credible analysis and adequate and meaningful public involvement. Unfortunately, the draft report falls short on both of these counts.

The public participation process was designed to solicit a range of independent comments and result in a summary of those comments. Now, though, the Department of Energy (DOE) is presenting the summary as a list of "stakeholder-preferred options" and "stakeholder recommendations." These assertions are unfounded as (1) there was no consensus building effort of similar exercise to bring together the options of concerned citizens into a single set of recommendations, and (2) the catalog of public comments in the draft report makes it clear that there was disagreement on the so-called recommendations.

Perhaps the most significant, and troubling, so-called recommendations are those two that prohibit residential land use. Despite the strong wording of the recommendations themselves, the draft report makes it clear that this position was not favored by all participants, and the draft report even

presents a contradictory recommendation to offer the land back to former landowners if DOE decides to sell it. To presume to take the mix of comments received and portray it as a public recommendation is imprudent, if not reckless. A premature assumption that there will never again be any residential use of the SRS land could lead to a weakening or abandonment of goals for truly cleaning up contaminated portions of SRS and might even result in decision allowing contamination of land on the site.

We do not advocate residential development of SRS land. We are very aware, however, of the importance of evaluating residential land use in environmental decision-making, and the possibility that residential development of at least part of SRS one day occur. Clearly, the risks at SRS vary significantly from the very highly contaminated burial grounds and separations areas to relatively pristine areas miles away. A blanket policy prohibiting residential development ignores the variability of risk and presumes too much from the limited and inconsistent comments received.

We urged DOE to continue public discussion of land use at SRS but not to overstate the conclusions of citizen involvement to date. Also, we ask that the final report make clear that (1) there is as yet not mechanism to prevent residential land use for the length of time contamination at SRS will pose health risks, (2) there is no clear consensus that residential use of some portion of SRS will not one day be desired or that it should be prohibited outright, (3) a residential scenario will continue to be used in risk assessment and other aspects of decision-making, and (4) land use planning will proceed with greater attention to the unique characteristics of various sections of SRS.

Finally, we reiterate by reference those of our comments submitted on November 29, 1995, which were not factored into the current draft, especially those comments regarding weaknesses in the public participation process. We also ask that you review and incorporate our related comments submitted to the Citizens Advisory Board on November 5 and 27, 1995, and January 18, 1996.

Thank you for considering these comments.

Response 54. We disagree that our analysis of the comments was not credible and we do not believe the process was flawed. It was not the intent of this document to determine what analyses would be needed to support future decisions effecting the protection of the public and the environment. Adequate analyses would be performed for each activity requiring a decision.

Your comments about residential uses is a good case in point. The report does not preclude residential scenarios in risk assessments for a contaminated unit. Alternative scenario decisions would be made by DOE and the regulators, using this report as a tool.

For additional responses to your concerns, please see Responses 4-11.

The League of Women Voters is in agreement with the analysis being sent to you by Energy Research Foundation. As an organization committed to the informed participation of citizens in their government, we are particularly concerned about the flawed public participation process on which serious decision making is being based. There is no way a true consensus could emerge when this matter has not been discussed in enough forums in a sufficient variety of South Carolina

locations to make the process available to all South Carolina citizens. I understand that most meetings have been in the Aiken area, and none in Columbia, the state capitol.

Indeed, from our experience, we believe there is an overall deterioration of the public participation process as it relates to this site. A few problems are the following:

- (1) The concept of stakeholder is a good one. You seem to be making a worthy effort to reach out to a good ethnic and socioeconomic mix, but broader geographical outreach is needed.*
- (2) Dialogue on important issues should be accessible to all South Carolinians through meetings in a variety of locations including the state capitol. All South Carolinians are stakeholders because of the inherent danger this major nuclear site poses for a very broad area, and because the economic impact on the state as a whole.*
- (3) The whole public participation process should be re-examined. A year or more ago, there were so many meetings on so many issues, many with little substance and a waste of time from attendees perspective (and certainly a costly exercise for DOE) that it became impossible for those of us who have been following these issues for years to (a) travel to so many meetings often at great distances, (b) distinguish the important from the unimportant. Consequently, many meetings have had poor attendance. Better coordination and planning from your end is essential.*

Your consideration of these comments is greatly appreciated.

Response 55. We appreciate your input into the public participation process. We recognize that we have had numerous meetings in the recent past. We are working to consolidate public meetings to make them more effective and more meaningful. We would appreciate your input for improving these meetings, as we consolidate them.

For additional responses to your concerns, please see Response 54.

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