CHAPTER 7. APPLICABLE LAWS, REGULATIONS, AND OTHER REQUIREMENTS

This chapter identifies and summarizes the major laws, regulations, Executive Orders, and U.S. Department of Energy (DOE) Orders that could apply to the Savannah River Site (SRS) salt processing alternatives. Permits or licenses could be required under some of these laws and regulations. DOE would determine the specific requirements for permits or licenses, which would depend on the alternative chosen, after consultation with the appropriate regulating agencies.

Section 7.1 describes the process that DOE will follow to determine if the low-activity salt solution produced under the salt processing alternatives can be considered waste incidental to reprocessing. Section 7.2 discusses the major Federal and State of South Carolina statutes and regulations that impose environmental protection requirements on DOE and that require DOE to obtain a permit, or permits, prior to implementing a given salt processing alternative. Each of the applicable authorities establishes how potential releases of pollutants and radioactive materials are to be controlled or monitored and include requirements for the issuance of permits for new operations or new emission sources. In addition to environmental permit requirements, the authorities may require consultations with various regulators to determine if an action requires the implementation of protective or mitigative measures. Section 7.2 also discusses the environmental permitting process and lists the environmental permits and consultations (Table 7-1) applicable to the salt processing alternatives.

Sections 7.3 and 7.4 address the major Federal regulations and Executive Orders that address issues such as emergency planning, worker safety, and protection of public health and the environment. The Executive Orders clarify issues of national policy and set guidelines under which Federal agencies must act.

DOE implements its responsibilities for protection of public health, safety, and the environment through a series of Departmental Orders (see Section 7.5) that typically are mandatory for operating contractors of DOE-owned facilities.

7.1 Waste Incidental to Reprocessing Determination

DOE Manual 435.1-1 establishes a process for making waste incidental to reprocessing determinations. This process evaluates candidate waste streams to determine if they can be managed as low-level waste (LLW) or transuranic waste (DOE Manual 435.1-1; DOE 1999). Because salt solutions at SRS originated from waste generated by reprocessing of spent nuclear fuel, they meet the source-based definition of high-level waste (HLW). However, under all alternatives in this Supplemental Environmental Impact Statement (SEIS), the low-activity fraction of the salt solution could be appropriately managed as LLW as long as the waste satisfies the waste incidental to reprocessing criteria in DOE Manual 435.1-1.

DOE Manual 435.1-1 describes two processes, a "citation" process and an "evaluation" process, for waste-incidental-to-reprocessing determinations (DOE 1999). The criteria used in the "evaluation" process are based on the treatment of the waste and the characteristics of the disposal form. Wastes can be managed as LLW if they meet the following criteria or other appropriate criteria approved by DOE.

"1. Have been processed or will be processed to remove key radionuclides to the maximum extent that is technically and economically practical." DOE Guidance 435.1-1 (DOE 1999) explains that key radionuclides are generally understood to be those radionuclides that are concentration limits in 10 CFR 61.55 (i.e., the long-lived radionuclides carbon-14, nickel-59, niobium-94, technetium-99, iodine-129, plutonium-241, and curium-242; alpha-emitting transuranic nuclides with half-lives greater than 5 years;

Table 7-1. Environmental permits and consultations required by law.

Activity/Topic	Law	Requirements	Agency
Site Preparation	Federal Clean Water Act (Section 404)	Stormwater Pollution Prevention Plan for Industrial Activity	SCDHEC[a]
Industrial Waste Disposal	S.C. Pollution Control Act	Permit for Industrial Waste Disposal	SCDHEC
Wastewater Discharges	Federal Clean Water Act S.C. Pollution Control Act	Stormwater Pollution Prevention/Erosion Control Plan for construction activity	SCDHEC
		NPDES Permit(s) for Process Wastewater Discharges	SCDHEC
		Industrial Wastewater Treatment Systems Construction and Operation Permits (if applicable)	SCDHEC
		Sanitary Wastewater Pumping Station Tie-in Construction Permit; Permit to Operate	SCDHEC
Air	Clean Air Act – NESHAP[b]	Rad Emissions - Approval to construct new emission source (if needed)	EPA[c]
		Air Construction and Operation permits - as required (e.g., fire water pumps, diesel generators)	SCDHEC
		General source – stacks, vents, concrete batch plant	SCDHEC
		Air Permit - Prevention of Significant Deterioration (PSD)	SCDHEC
Domestic Water	Safe Drinking Water Act	Construction and operation permits for line to domestic water system	SCDHEC

a. South Carolina Department of Health and Environmental Control
b. National Emission Standards for Hazardous Air Pollutants
c. U.S. Environmental Protection Agency
d. U.S. Fish and Wildlife Service
e. National Marine Fisheries Service

and the short-lived radionuclides tritium, cobalt-60, nickel-63, strontium-90, and cesium-137), and any other radionuclides that are important to satisfying the performance objectives of 10 CFR 61, Subpart C (e.g., selenium-79, tin-126, neptunium-237); and

"2. Will be managed to meet safety requirements comparable to the performance objectives set out in 10 CFR 61, Subpart C, "Performance Objectives;" and"

"3. Are to be managed, pursuant to DOE's authority under the Atomic Energy Act, as amended, and in accordance with the provisions of Chapter IV of DOE Manual 435.1-1, provided the waste will be incorporated in a solid physical form at a concentration that does not exceed the applicable concentration limits for Class C low-level waste as set out in 10 CFR 61.55, "Waste Classification", or will meet alternative requirements for waste classification and characteristics, as DOE may authorize."

DOE is conducting a research and development program, and is continuing design efforts, to determine the technical and economic feasibility of the Small Tank Precipitation, Ion Exchange, and Solvent Extraction alternatives. Through an evaluation of potential salt processing alternatives, DOE identified potential technologies that would remove key radionuclides. Variations of three of the salt processing technologies being considered (Small Tank Precipitation, Ion Exchange, and Solvent Extraction) have been evaluated previously against the incidental waste criteria. The low-activity salt solution fraction that would be produced using ion exchange has previously been characterized as incidental waste (i.e., non-HLW) (52 FR 5993, February 27, 1987). The low-activity salt solution produced using the small tank precipitation or solvent extraction process is expected to meet the same key radionuclide removal requirements, as previously analyzed, and the other evaluation determination process.

Implementation of the Direct Disposal in Grout alternative would result in the removal of the key radionuclides, as suggested in DOE Guidance 435.1-1, except for cesium-137. However, this short-lived radionuclide can be effectively isolated by the combination of a stabilized waste form and engineered barriers for the period (about 400 years) needed for it to decay so that it no longer poses a significant hazard. The long-term performance evaluation (Section 4.2) indicates that the low-activity salt solution produced under the Direct Disposal in Grout alternative meets performance objectives comparable to those in 10 CFR 61, as required to meet the waste incidental to reprocessing criteria in DOE Manual 435.1-1. DOE is currently conducting studies to investigate the technical and economic practicality of these alternatives. Cesium removal from SRS salt solutions at a pilot or production scale, using the Small Tank Precipitation, Ion Exchange, or Solvent Extraction processes, has not been demonstrated. Cesium removal by the Small Tank Precipitation, Ion Exchange, or Solvent Extraction alternatives ultimately could prove to not be technically and economically practical. In such a case, the criterion requiring key radionuclide removal would be considered met because the key radionuclides, other than cesium, would have been removed to the extent technically and economically practical and the waste could be properly managed as LLW, in accordance with the waste incidental to reprocessing requirements of DOE Manual 435.1-1.

Per DOE Manual 435.1-1, the DOE Field Element Manager is responsible for ensuring that waste incidental to reprocessing determinations are made consistent with either the citation or the evaluation process. A determination made using the evaluation process will include consultation and coordination with the DOE Office of Environmental Management. The U.S. Nuclear Regulatory Commission (NRC) has participated in regulatory reviews using these evaluation criteria in the past and has expertise that is expected to complement DOE's internal review. Hence, consultation with NRC staff regarding the requirements for the evaluation process is strongly encouraged by DOE (Guidance 435.1-1). DOE plans to consult with NRC regarding an incidental waste determination for the low-activity salt solution. To facilitate the consultations, DOE will provide documentation that the low-activity salt solution satisfies crite-

ria for management as LLW under the waste incidental to reprocessing evaluation process.

7.2 Statutes and Regulations Requiring Permits or Consultations

Environmental regulations require that the owner or operator of a facility obtain permits for the construction and operation of new (water and air) emissions sources and for new domestic drinking water systems. To obtain these permits, the facility operator must apply to the appropriate government agency for a discharge permit for discharges of wastewater to the waters of the state and submit construction plans and specifications for the new emission sources, including new air sources. The environmental permits contain specific conditions with which the permittee must comply during construction and operation of a new emission source, describe pollution abatement and prevention methods to be utilized for reduction of pollutants, and contain emissions limits for pollutants that will be emitted from the facility. Section 7.2.1 discusses the environmental statutes and regulations under which DOE will be required to obtain permits, and Table 7-1 lists the applicable permits.

7.2.1 ENVIRONMENTAL PROTECTION PERMITS

Clean Air Act, as amended, (42 USC 7401 et seq.), and implementing regulations (40 CFR Parts 50-99); South Carolina Pollution Control Act (Section 48-1-30 et seq., SCDHEC Regulation 61-62)

The Clean Air Act, as amended, is intended to "protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population [42 USC 7401(b)(1)]." Section 118 of the Clean Air Act, as amended, requires each Federal agency, such as DOE, with jurisdiction over any property or facility that might result in the discharge of air pollutants, to comply with "all Federal, State, interstate, and local requirements" with regard to the control and abatement of air pollution.

The Act requires the U.S. Environmental Protection Agency (EPA) to define National Ambient Air Quality Standards as necessary to protect public health, with an adequate margin of safety, from any known or anticipated adverse effects of a regulated pollutant (42 USC 7409). The Act also requires the establishment of national standards of performance for new or modified stationary sources of atmospheric pollutants (42 USC 7411) and requires specific emission increases to be evaluated so as to prevent a significant deterioration in air quality (42 USC 7470). Hazardous air pollutants, including radionuclides, are regulated separately (42 USC 7412). Air emissions are regulated by EPA in 40 CFR Parts 50 through 99. In particular, radionuclide emissions, other than radon from DOE facilities, are regulated under the National Emission Standards for Hazardous Air Pollutants (NESHAP) program (see 40 CFR Part 61, Subpart H).

The EPA has overall authority for the Clean Air Act; however, it delegates primary authority to states that have established air pollution control programs approved by EPA. In South Carolina, EPA has retained authority over radionuclide emissions (40 CFR Part 61) and has delegated to the South Carolina Department of Health and Environmental Control (SCDHEC) the responsibility for the rest of the regulated pollutants under the authority of the South Carolina Pollution Control Act (48-1-10 et seq.) and SCDHEC Air Pollution Control Regulations 61-62.

Construction and operation permits or exemptions will be required for new nonradiological air emission sources (e.g., diesel generators, concrete batch plants) constructed and operated as part of SRS salt processing. The permits will contain operating conditions and effluent limitations for pollutants emitted from the facilities (Table 7-1).

DOE would determine if a NESHAP permit will be required for radiological emissions from any facilities (stacks, process vents, etc.) used in SRS salt processing. As described in 40 CFR Part 61.96, if the effective dose equivalent

caused by all emissions from facility operations is projected to be less than 1 percent of the 10 millirem per year NESHAP standard, an application for approval to construct under 40 CFR Part 61.07 is not required to be filed. 40 CFR Part 61.96 also allows DOE to use, with prior EPA approval, methods other than EPA standard methods for estimating the source term for use in calculating the projected dose. If DOE's calculations indicate that the emissions from salt processing will exceed 0.1 millirem per year, DOE will, prior to the start of construction, complete an application for approval to construct under 40 CFR 61.07.

Federal Clean Water Act, as amended (33 USC 1251 et seq.); SC Pollution Control Act (SC Code Section 48-1-10 et seq., 1976) (SCDHEC Regulation 61-9.122 et. seq.)

The Clean Water Act (CWA), 33 U.S.C. §§ 1251 et. seq., which originated in 1972 as amendments to the Federal Water Pollution Control Act, establishes the basic structure for regulating discharges of pollutants to waters of the United States. Enacted to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters," the CWA gave EPA the authority to set effluent standards on an industry basis and continued existing requirements to set water quality standards for all contaminants in surface waters (33 U.S.C. § 1251). The CWA makes it unlawful for any person to discharge any pollutant from a point source into navigable waters of the United States unless a permit is obtained under the Act's National Pollutant Discharge Elimination System (the NPDES permit system). The NPDES system lies at the core of the administration and enforcement of the CWA. The United States government is subject to the terms and prohibitions of the CWA in essentially the same manner as any other person (33 U.S.C. § 1323).

The CWA provides for the delegation by EPA to state governments of many permitting, administrative, and enforcement aspects of the law. In states with the authority to implement CWA programs, EPA still retains oversight responsibilities. EPA has delegated to South Carolina responsibility for administering the NPDES program.

EPA has delegated primary enforcement authority for the CWA and the NPDES Permitting Program to SCDHEC for waters in South Carolina. In 1996, SCDHEC, under the authority of the Pollution Control Act (48-1-10 et seq.) and Regulation 61-9.122, issued NPDES Permit SC0000175, which addresses wastewater discharges to SRS streams, and NPDES permit SCG250162, which addresses general utility water discharges. The permit contains effluent limitations for physical parameters, such as flow and temperature, and for chemical pollutants with which DOE must comply. DOE will apply for a discharge permit for salt processing facility operations, if the process alternative chosen results in discharges to waters of the State (Table 7-1).

Under Section 402(p) of the CWA, EPA established regulations (40 CFR Part 122.26) for issuing permits for storm water discharges associated with industrial activity. Accordingly, SCDHEC has issued a General Permit for Storm Water Discharges Associated with Industrial Activities (Permit No. SCR000000), authorizing DOE to make stormwater discharges to the waters of the State of South Carolina in accordance with effluent limitations, monitoring requirements, and conditions as set forth in the permit. This permit requires preparation and submittal of a Pollution Prevention Plan for all new and existing point-source discharges associated with industrial activity. Accordingly, DOE-Savannah River Operations Office (SR) has developed a Storm Water Pollution Prevention Plan for storm water discharges at SRS. The SRS Storm Water Pollution Prevention Plan would need to be revised to include pollution prevention measures to be implemented for salt processing operations (Table 7-1), if industrial activities are exposed to storm water. SCDHEC has issued a General Permit for storm water discharges from construction activities that are "Associated with Industrial Activity" (Permit No. SCR100000). An approved plan would be needed that includes erosion control and pollution prevention measures to be implemented for construction activities.

Section 404 of the CWA requires that a permit be issued for discharge of dredge or fill material into the waters of the United States. The authority to implement these requirements has been given to the U.S. Army Corps of Engineers. Section 401 of the CWA requires certification that discharges from construction or operation of facilities, including discharges of dredge and fill material into navigable waters, will comply with applicable water standards. This certification, which is granted by SCDHEC, is a prerequisite for the permit under Section 404. DOE does not believe that such a permit will be required for salt processing.

Section 303(d)(1)(C) of the CWA and the EPA implementing regulation (40 CFR 130.7(c)(1) require the identification of total maximum daily loads (TMDLs) for waters identified in Section 303(d)(1)(A) of the CWA. On December 8, 2000, EPA published a proposed TMDL for mercury in the Middle and Lower Savannah River Watershed (EPA 2000). The proposed TMDL affects the portion of the Savannah River within the State of Georgia. It does not specify wasteload allocations for South Carolina NPDES-permitted facilities or other pollution sources discharging to portions of the Savannah River Watershed within the State of South Carolina. However, the TMDL does provide a target concentration of mercury to be achieved at the mid-point of the Savannah River, which is the boundary between Georgia and South Carolina. The majority (99 percent) of the mercury loading in the Savannah River Watershed results from air deposition sources. EPA expects that the reductions in mercury deposition needed to reduce levels of mercury in the Savannah River to the TMDL can be achieved by 2010 through full implementation of the current Clean Air Act Maximum Achievable Control Technology requirements (EPA 2000). The proposed TMDL is not expected to affect implementation of the salt processing alternatives because mercury emissions from the proposed facilities would not be limited by these requirements.

Federal Safe Drinking Water Act, as amended [42 USC 300 (F) et seq., implementing regulations 40 CFR Parts 100-149]; South Carolina Safe Drinking Water Act (Title 44-55-10 et seq.), State Primary Drinking Water Regulations, (SCDHEC R.61-58)

The primary objective of the Safe Drinking Water Act (42 USC 300), as amended, is to protect the quality of the public water supplies. Safe Drinking Water Act requirements have been promulgated by EPA in 40 CFR Parts 100 through 149. The implementing regulations, administered by EPA unless delegated to the states, establish standards applicable to public water systems. They promulgate maximum contaminant levels (MCLs) (including those for radionuclides) in public water systems, which are defined as water systems that serve at least 15 service connections used by year-round residents or regularly serve at least 25 year-round residents. Construction and operation permits would be required for any major new components associated with SRS salt processing activities (Table 7-1). Other programs established by the Safe Drinking Water Act include the Sole Source Aquifer Program, the Wellhead Protection Program, and the Underground Injection Control Program.

As a regulatory practice and policy, the Safe Drinking Water Act MCLs also are used as groundwater protection standards. For example, the regulations specify that the average annual concentration of manmade radionuclides in drinking water shall not produce a dose equivalent to the total body or an internal organ dose greater than 4 millirem (mrem) per year beta-gamma activity. This radionuclide MCL is a primary performance objective for the disposal of the grouted low-activity salt solution produced under the salt processing alternatives.

On December 7, 2000, EPA published revisions to the MCLs for certain radionuclides (65 FR 76708). The new rule includes requirements for uranium, which was not previously regulated,

and revisions to monitoring requirements. EPA decided to retain the current standards for combined radium-226 and -228 and gross alpha particle radioactivity. EPA also retained the current MCL for beta particle and photon radioactivity, pending further review. The new standard for uranium will be considered with the other MCLs for radionuclides in assessing impacts to groundwater from the salt processing alternatives.

EPA has delegated primary enforcement authority to SCDHEC for public water systems in South Carolina. Under the authority of the South Carolina Safe Drinking Water Act (44-55-10 *et seq.*), SCDHEC has established a drinking water regulatory program (R.61-58). SCDHEC has also established groundwater and surface water classifications and standards under R. 61-68. Along with the Federal MCLs (40 CFR 141), these South Carolina water quality standards are the groundwater and surface water performance standards applicable to disposal of the grouted low-activity salt solution.

Resource Conservation and Recovery Act, as amended (Solid Waste Disposal Act) (42 USC 6901 et seq.); South Carolina Hazardous Waste Management Act, Section 44-56-30, South Carolina Hazardous Waste Management Regulations (R.61-79.124 et seq.)

The treatment, storage, or disposal of hazardous and nonhazardous waste is regulated under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) and the Hazardous and Solid Waste Amendments of 1984. Pursuant to Section 3006 of the Act, any state that seeks to administer and enforce a hazardous waste program pursuant to RCRA may apply for EPA authorization of its program. The EPA regulations implementing RCRA (40 CFR Parts 260 through 280) define hazardous wastes and specify their transportation, handling, treatment, storage, and disposal requirements. EPA has delegated primary enforcement authority to SCDHEC, which has established hazardous waste management requirements under SC Regulation R.61-79.

The regulations imposed on a generator or a treatment, storage, or disposal facility vary according to the type and quantity of material or waste generated, treated, stored, or disposed. The method of treatment, storage, or disposal also affects the extent and complexity of the requirements.

Under Section 3004(u) of RCRA, DOE is required to assess releases from solid waste management units and implement corrective action plans where necessary. The RCRA corrective action requirements for SRS are set forth in the Federal Facility Agreement (FFA) (Section 7.3.2).

The HLW managed in the F- and H-Area Tank Farms is considered mixed waste because it exhibits characteristics of RCRA hazardous waste (i.e., corrosivity and toxicity for certain metals) and contains source, special nuclear, or by-product material regulated under the Atomic Energy Act. Waste removed from the tank systems will be managed in accordance with applicable RCRA requirements (i.e., treated to meet the land disposal restrictions standards prior to disposal). DOE would demonstrate that any saltstone produced by grouting the low-activity salt solution would meet applicable RCRA standards. The SRS HLW processing facilities (e.g., Tank Farms, Effluent Treatment Facility, Defense Waste Processing Facility) are exempt from the design and operating standards and permitting requirements for hazardous waste management units because they are wastewater treatment units regulated under the CWA [40 CFR 260.10, 264.1(g)(6) and 270.1(c)(2)(v)]. DOE expects that the new processing facilities for the salt processing alternatives also would be permitted as wastewater treatment units under the CWA.

The Z-Area Saltstone Disposal Facility is permitted as an industrial waste disposal facility (SCDHEC 1986). The current permit application is based on the saltstone composition that was expected to result from the In-Tank Precipitation (ITP) process. The permit application would need to be modified to reflect any differences in the composition of the saltstone result-

ing from any new salt processing technology. One salt processing alternative, Direct Disposal in Grout, would produce a more radioactive saltstone than the others because cesium would not be removed from the salt solution. That saltstone would be equivalent to Class C (versus Class A for the other salt processing alternatives) LLW as defined by NRC regulations (see 10 CFR 61.55). The current vault design would meet NRC regulations for Class C disposal, although the current permit restricts the average curie content of the saltstone to be within Class A limits. NRC regulations require that Class C waste be structurally stable and provided with protection against inadvertent intrusion for 500 years. The depth of burial and structural stability of the saltstone monoliths would provide the requisite protection against inadvertent intrusion. Modifications to the current vaults would be required under certain salt processing alternatives (e.g., Direct Disposal in Grout).

The Federal Facility Compliance Act (42 USC 6921 et seq.)

The Federal Facility Compliance Act, enacted on October 6, 1992, amended RCRA. The Act waived sovereign immunity for fines and penalties for RCRA violations at Federal facilities. DOE's immunity continues for fines and penalties resulting from land-disposal-restriction storage-prohibition violations for mixed waste, if DOE prepares plans for developing the required treatment capacity for mixed waste stored or generated at each facility and meets other applicable RCRA requirements. Each plan must be approved by the host state or EPA, after consultation with other affected states, and a consent order must be issued by the regulator requiring compliance with the plan. On September 20, 1995, SCDHEC approved the Site Treatment Plan for SRS. SCDHEC issued a consent order, signed by DOE, requiring compliance with the plan on September 29, 1995. DOE provides SCDHEC with annual updates to the information in the SRS Site Treatment Plan. DOE would be required to notify SCDHEC of any new mixed waste streams generated as a result of salt processing activities.

7.2.2 PROTECTION OF BIOLOGICAL, HISTORIC, AND ARCHAEOLOGICAL RESOURCES

The following statutes pertain to protection of endangered or threatened animal and plants, and of historic and cultural resources.

Endangered Species Act, as amended (16 USC 1531 et seq.)

The Endangered Species Act provides a program for the conservation of threatened or endangered species and the ecosystems on which those species rely. All Federal agencies must assess whether the potential impacts of a proposed action could adversely affect threatened or endangered species or their habitat. If so, the agency must consult with the U.S. Fish and Wildlife Service (part of the U.S. Department of the Interior) and the National Marine Fisheries Service (part of the U.S. Department of Commerce), as required under Section 7 of the Act. The outcome of this consultation may be a biological opinion by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service that states whether the proposed action would jeopardize the continued existence of the species under consideration. If there is a non-jeopardy opinion, but the possibility exists that some individual members of a species might be killed incidentally as a result of the proposed action, the Services can determine that such losses are not prohibited, as long as mitigation measures outlined by the Services are followed. Regulations implementing the Endangered Species Act are codified at 50 CFR Part 15 and 402.

The proposed facilities for the salt processing alternatives are located within fenced, disturbed industrial areas. Proposed salt processing activities would not disturb any threatened or endangered species, would not degrade any critical or sensitive habitat, and would not affect any jurisdictional wetland. Therefore, DOE concludes that no consultation with the U.S. Fish and Wildlife Service or the National Marine Fisheries Service concerning the alternatives considered in this SEIS is required.

Migratory Bird Treaty Act, as amended (16 USC 703 et seq.)

The Migratory Bird Treaty Act, as amended, is intended to protect birds that have common migration patterns between the United States and Canada, Mexico, Japan, and Russia. It regulates the harvesting of migratory birds by specifying things such as the mode of harvesting, hunting seasons, and bag limits. The Act stipulates that it is unlawful at any time, by any means, or in any manner to "kill...any migratory bird." Executive Order 13186 (66 FR 3853; 1/17/01) requires that environmental analyses of Federal actions required by the National Environmental Policy Act (NEPA) or other established environmental review processes evaluate the effects of actions and agency plans on migratory birds, with emphasis on species of concern. If impacts to migratory birds were expected, DOE would be required to consult with the U.S. Fish and Wildlife Service and to evaluate ways to avoid or minimize these effects in accordance with the U.S. Fish and Wildlife Service Mitigation Policy (46 FR 7644). The proposed facilities for the salt processing alternatives are within fenced industrial areas without habitat suitable for migratory birds. Therefore, DOE concludes that no consultation with the U.S. Fish and Wildlife Service concerning the alternatives considered in this SEIS is required.

Bald and Golden Eagle Protection Act, as amended (16 USC 668-668d)

The Bald and Golden Eagle Protection Act makes it unlawful to take, pursue, molest, or disturb bald and golden eagles, their nests, or their eggs anywhere in the United States (Sections 668, 668c). A permit must be obtained from the U.S. Department of the Interior to relocate a nest that interferes with resource development or recovery operations. The proposed facilities for the salt processing alternatives are within fenced industrial areas without habitat suitable for nesting eagles.

National Historic Preservation Act, as amended (16 USC 470 et seq.)

The National Historic Preservation Act, as amended, provides that sites with significant national historic value be placed on the *National Register of Historic Places*. No permits or certifications are required under the Act. However, if a particular Federal activity could impact an historic property resource, consultation with the Advisory Council on Historic Preservation will usually generate a Memorandum of Agreement, including stipulations that must be followed to minimize adverse impacts. Coordination with the South Carolina State Historic Preservation Officer ensures the proper identification of potentially significant sites and the implementation of appropriate mitigative actions. The proposed facilities for the salt processing alternatives would be within previously disturbed industrial sites. Therefore, DOE does not expect this Act to apply.

Archaeological Resource Protection Act, as amended (16 USC 470 et seq.)

This Act requires a permit for any excavation or removal of archaeological resources from public or Native American lands. Excavations must be undertaken for the purpose of furthering archaeological knowledge in the public interest, and resources removed are to remain the property of the United States. Consent must be obtained from the Indian Tribe owning lands on which a resource is located before a permit is issued, and the permit must contain terms or conditions requested by the Tribe. The proposed facilities for salt processing alternatives would be within previously disturbed industrial sites. Therefore, DOE does not expect this Act to apply.

Native American Grave Protection and Repatriation Act of 1990 (25 USC 3001)

This law directs the Secretary of the Interior to assume responsibility for repatriation of Federal

archaeological collections and collections held by museums receiving Federal funding that are culturally affiliated with Native American Tribes. Major actions to be taken under this law include: (1) establishing a review committee with monitoring and policy-making responsibilities, (2) developing regulations for repatriation, including procedures for identifying lineal descent or cultural affiliation needed for claims, (3) overseeing museum programs designed to meet the inventory requirements and deadlines of this law, and (4) developing procedures to handle unexpected discoveries of graves or grave goods during activities on Federal or tribal lands. The proposed facilities for salt processing alternatives would be within previously disturbed industrial sites. Therefore, DOE does not expect this Act to apply.

American Indian Religious Freedom Act of 1978 (42 USC l996)

This Act reaffirms Native American religious freedom under the First Amendment and sets U.S. policy to protect and preserve the inherent and constitutional right of Native Americans to believe, express, and exercise their traditional religions. The Act requires that Federal actions avoid interfering with access to sacred locations and traditional resources that are integral to the practice of religion. The proposed facilities for salt processing alternatives would be within previously disturbed industrial sites. Therefore, DOE does not expect this Act to apply.

In conjunction with 1991 studies related to the New Production Reactor, DOE solicited the concerns of Native Americans about religious rights in the Central Savannah River Valley. During this study, three Native American groups – the Yuchi Tribal Organization, the National Council of Muskogee Creek, and the Indian People's Muskogee Tribal Town Confederacy – expressed general concerns about SRS and the Central Savannah River Area, but did not identify specific sites as possessing religious significance. The Yuchi Tribal Organization and the National Council of Muskogee Creek are interested in plant species traditionally used in tribal ceremonies, such as redroot, button snakeroot, and American ginseng (DOE 1991). Redroot and button snakeroot are known to occur on the SRS (Batson, Angerman, and Jones 1985). The proposed facilities for salt processing alternatives would be within previously disturbed industrial sites. Therefore, DOE does not expect this Act to apply.

7.3 Statutes, Regulations, and Guidelines Related to Emergency Planning, Worker Safety, and Protection of Public Health and the Environment

7.3.1 ENVIRONMENTAL PROTECTION

National Environmental Policy Act of 1969, as amended (42 USC 4321 et seq.)

The NEPA establishes a national policy promoting awareness of the environmental consequences of human activity on human health and the environment, and consideration of environmental impacts during the planning and decision-making stages of a project. This Act requires Federal agencies to prepare a detailed statement on the environmental effects of proposed major Federal actions that may significantly affect the quality of the human environment.

This SEIS has been prepared in compliance with NEPA requirements and policies and in accordance with Council on Environmental Quality (40 CFR Parts 1500 through 1508) and DOE (10 CFR Part 1021) regulations for implementing the procedural provisions of NEPA.

Pollution Prevention Act of 1990 (42 USC 13101 et seq.)

The Pollution Prevention Act of 1990 established a national policy for waste management and pollution control that focuses first on source reduction, followed sequentially by environmentally safe recycling, treatment, and disposal. Disposal or releases to the environment should occur only as a last resort. In response, DOE has committed to participate in the Superfund

Amendments and Reauthorization Act Section 313, EPA 33/50 Pollution Prevention Program. The goal for facilities already involved in Section 313 compliance is to achieve by 1997 a 33-percent reduction in the release of 17 priority chemicals from a 1993 baseline. On August 3, 1993, President Clinton issued Executive Order 12856, expanding the 33/50 program such that DOE must reduce its total releases of all toxic chemicals by 50 percent by December 31, 1999. In addition, DOE is requiring each of its sites to establish site-specific goals to reduce the generation of all waste types.

Comprehensive Guideline for Procurement of Products Containing Recovered Materials (40 CFR Part 247)

This guideline is issued under the authority of Section 6002 of RCRA and Executive Order 12783, which set forth requirements for Federal agencies to procure products containing recovered materials for use in their operations, using guidelines established by the EPA. The purpose of these regulations is to promote recycling by using government purchasing to expand markets for recovered materials. RCRA Section 6002 requires that any purchasing agency, when using appropriated funds to procure an item, shall purchase it with the highest percentage of recovered materials practicable. The procurement of materials to be used in the SRS salt processing activities will be conducted in accordance with these regulations.

Toxic Substances Control Act, as amended (USC 2601 et seq.) (40 CFR Part 700 et seq.)

The Toxic Substances Control Act regulates the manufacture, use, treatment, storage, and disposal of certain toxic substances not regulated by RCRA or other statutes, particularly polychlorinated biphenyls (40 CFR Part 761), chlorofluorocarbons (40 CFR Part 762), and asbestos (40 CFR Part 763). DOE does not expect to use these materials under any of the salt processing alternatives.

7.3.2 EMERGENCY PLANNING AND RESPONSE

This section discusses the regulations that address protection of public health and worker safety and require the establishment of emergency plans and coordination with local and Federal agencies related to facility operations. DOE Orders generally set forth the programs and procedures required to implement the requirements of these regulations. See Section 7.5.

Atomic Energy Act of 1954, as amended (42 USC 2011 et seq.)

The Atomic Energy Act of 1954, as amended, authorizes DOE to establish standards to protect health and minimize dangers to life or property with respect to activities under its jurisdiction [42 USC 2201(b)]. Through a series of Orders, DOE has established an extensive system of standards and requirements to promote the safe operation of its facilities.

Section 202(4) of the Energy Reorganization Act of 1974 (42 USC §5842(4)), which amended the Atomic Energy Act, gives the NRC licensing authority over DOE facilities authorized for long-term storage of HLW generated by DOE. DOE (Sullivan 1998) determined that NRC's licensing authority is limited to DOE facilities that are (1) authorized by Congress for the express purpose of long-term storage of HLW, and (2) developed and constructed after the passage of the Energy Reorganization Act. None of the facilities associated with the salt processing alternatives meet both criteria. Although DOE has responsibility for such determinations, the Savannah River Operations Office plans to consult with NRC on the incidental waste determination for the low-activity salt solution as described in Section 7.1.

Atomic Energy Act of 1954, as amended (42 USC 2011 et seq.); Quantities of Radioactive Materials Requiring Consideration of the Need for an Emergency Plan for Responding to a Release (10 CFR Part 30.72 Schedule C)

The list of quantities in Schedule C of 10 CFR 30.72 is the basis for both the public and private sector to determine if the radiological materials they deal with must have an emergency response plan for unscheduled releases. It establishes threshold criteria documents for DOE Emergency Preparedness Hazard Assessments required by DOE Order 151.1, "Comprehensive Emergency Management System". An emergency response plan addressing salt processing facility operations would be prepared in accordance with this regulation.

The Disaster Relief and Emergency Assistance Amendments of 1988 (42 USC 5121 et seq.), Emergency Management and Assistance (44 CFR Part 351)

These regulations generally include the policies, procedures, and responsibilities of the Federal Emergency Management Agency, NRC, and DOE (44 CFR 351.24) for implementing a Federal Emergency Preparedness Program to include radiological planning and preparedness. An emergency response plan, including radiological planning and preparedness for salt processing facility operations, would need to be prepared and implemented, in accordance with this regulation.

Emergency Planning and Community Right-to-Know Act of 1986 (42 USC 11001 et seq.) (also known as "SARA Title III")

The Emergency Planning and Community Right-to-Know Act of 1986 (also known as "SARA Title III") requires emergency planning and notice to communities and government agencies of the presence and release of specific chemicals. EPA implements this Act under regulations found at 40 CFR Parts 355, 370, and 372. Under Subtitle A of this Act, Federal facilities provide various information (such as inventories of specific chemicals used or stored and releases that occur from these facilities) to the State Emergency Response Commission and the Local Emergency Planning Committee to ensure that emergency plans are sufficient to respond to unplanned releases of hazardous substances. DOE's implementation of the provisions of this Act began voluntarily in 1987, and inventory and annual emissions reporting began in 1988. In addition, DOE requires compliance with SARA Title III as a matter of Departmental policy. DOE submits hazardous chemical inventory reports for SRS to SCDHEC. The chemical inventory could change, depending on the salt processing alternative DOE implements; however, subsequent reports would reflect any change to the inventory.

Transportation of Hazardous Materials (49 USC 5101 et seq.); Hazardous Materials Tables & Communications, Emergency Response Information Requirements (49 CFR Part 172)

The regulatory requirements for marking, labeling, placarding, and documenting hazardous materials shipments are defined in 40 CFR Part 172. This regulation also specifies the requirements for providing hazardous material information and training. Materials shipped to the salt processing facilities would comply with these regulations.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (42 USC 9601 et seq.); National Oil and Hazardous Substance Contingency Plan (40 CFR Part 300 et seq.)

More popularly known as CERCLA or "Superfund," the Act and implementing regulations provide the authority for Federal and state governments to respond directly to hazardous substances incidents. The regulations require reporting of spills, including radioactive materials, to the National Response Center. DOE Orders generally set forth the programs for development of internal procedures for implementing the regulations. DOE would be required to comply with these regulations in the event of spills of hazardous substances at the salt processing facilities.

DOE, SCDHEC, and EPA have signed an FFA to coordinate cleanup at SRS, as required by Section 120 of CERCLA. Section IX of the Agreement sets forth requirements for the SRS HLW tank systems. Design and operating standards for the tank systems are found in Appendix B of the Agreement. DOE has submitted a waste removal plan and schedule for the tank systems that do not meet applicable secondary containment standards. The approved FFA waste removal schedule appears in Appendix E of the *Savannah River Site High Level Waste System Plan* (WSRC 2000). DOE must provide an annual report on the status of the HLW tank systems being removed from service. After waste removal is completed, the tank systems are available for closure in accordance with general closure strategy for the F- and H-Area waste tank systems (DOE 1996). Implementation of salt processing is essential to meeting DOE's obligations under the FFA. Under the No Action alternative, DOE would continue to store the salt solutions. If salt processing is not operational by 2010, DOE would consider other options, as described in Section 2.3.

Occupational Safety and Health Act of 1970, as amended (29 USC 651 et seq.); Occupational Safety and Health Administration Emergency Response, Hazardous Waste Operations and Worker Right to Know (29 CFR Part 1910 et seq.)

The Occupational Safety and Health Act (29 USC 651) establishes standards to enhance safe and healthful working conditions in places of employment throughout the United States. The Act is administered and enforced by the Occupational Safety and Health Administration (OSHA), a U.S. Department of Labor agency. While OSHA and EPA both have a mandate to reduce exposures to toxic substances, OSHA's jurisdiction is limited to safety and health conditions that exist in the workplace environment. In general, under the Act, it is the duty of each employer to furnish all employees a place of employment free of recognized hazards likely to cause death or serious physical harm. Employees have a duty to comply with the occupational safety and health standards and all rules, regulations, and orders issued under the Act. The OSHA regulations (29 CFR) establish specific standards with which employers must comply to achieve a safe and healthful working environment. This regulation sets down the OSHA requirements for employee safety in a variety of working environments. It addresses employee emergency and fire prevention plans (Section 1910.38), hazardous waste operations and emergency response (Section 1910.120), and hazard communication (Section 1910.1200) that enable employees to be aware of the dangers they face from hazardous materials at their workplaces. DOE places emphasis on compliance with these regulations at its facilities and prescribes, through DOE Orders, OSHA standards that contractors shall meet, as applicable to their work at government-owned, contractor-operated facilities. DOE keeps and makes available the various records of minor illnesses, injuries, and work-related deaths required by OSHA regulations.

Noise Control Act of 1972, as amended (42 USC 4901 et seq.)

Section 4 of the Noise Control Act of 1972, as amended, directs all Federal agencies to carry out "to the fullest extent within their authority" programs within their jurisdictions in a manner that furthers a national policy of promoting an environment free from noise that jeopardizes health and welfare.

7.4 Executive Orders

The following executive orders would apply to the SRS salt processing activities. DOE Orders generally set forth the programs and procedures required to implement the requirements of the Orders.

Executive Order 11514 (Protection and Enhancement of Environmental Quality)

Executive Order 11514 requires Federal agencies to monitor and control their activities continually to protect and enhance the quality of the environment to develop procedures to ensure the fullest practicable provision of timely public information and understanding of Federal plans

and programs with environmental impacts, and to obtain the views of interested parties.

Executive Order 11988 (Floodplain Management)

Executive Order 11988 requires Federal agencies to establish procedures to ensure that the potential effects of flood hazards and floodplain management are considered for any action undertaken in a floodplain, and that floodplain impacts be avoided to the extent practicable.

Executive Order 11990 (Protection of Wetlands)

Executive Order 11990 requires government agencies to avoid any short- and long-term adverse impacts on wetlands, wherever there is a practicable alternative.

Executive Order 12856 (Right-to-Know Laws and Pollution Prevention Requirements)

Executive Order 12856 requires all Federal agencies to reduce the toxic chemicals entering any waste stream. This order also requires Federal agencies to report toxic chemicals entering waste streams; improve emergency planning, response, and accident notification; and encourage clean technologies and testing of innovative pollution prevention technologies.

Executive Order 12898 (Environmental Justice)

Executive Order 12898 directs Federal agencies to identify and address disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations.

Executive Order 12902 (Energy Efficiency and Water Conservation at Federal Facilities)

Executive Order 12902 requires Federal agencies to develop and implement programs for conservation of energy and water resources.

7.5 DOE Regulations and Orders

Through the authority of the Atomic Energy Act, DOE is responsible for establishing a comprehensive health, safety, and environmental program for its facilities. The regulatory mechanisms through which DOE manages its facilities are the promulgation of regulations and the issuance of DOE Orders. Table 7-2 lists the major DOE Orders applicable to the salt processing alternatives.

The DOE regulations address such areas as energy conservation, administrative requirements and procedures, nuclear safety, and classified information. For purposes of this SEIS, relevant regulations include 10 CFR Part 820, *Procedural Rules for DOE Nuclear Facilities*; 10 CFR Part 830, *Nuclear Safety Management, Contractor and Subcontractor Activities*; 10 CFR Part 835*, Occupational Radiation Protection*; 10 CFR Part 1021*, Compliance with NEPA*; and 10 CFR Part 1022*, Compliance with Floodplains/Wetlands Environmental Review Requirements*. DOE has enacted occupational radiation protection standards to protect DOE and its contractor employees. These standards are set forth in 10 CFR Part 835*, Occupational Radiation Protection*; the rules in this part establish radiation protection standards, limits, and program requirements for protecting individuals from ionizing radiation resulting from the conduct of DOE activities, including those conducted by DOE contractors. The activity may be, but is not limited to, design, construction, or operation of DOE facilities.

Table 7-2. DOE Orders and Standards relevant to the salt processing alternatives.

151.1A	Comprehensive Emergency Management System
225.1A	Accident Investigation
231.1	Environment, Safety and Health Reporting
232.1A	Occurrence Reporting and Processing of Operations Information
252.1	Technical Standards Program
420.1	Facility Safety
425.1B	Startup and Restart of Nuclear Facilities
430.1A	Life Cycle Asset Management
435.1	Radioactive Waste Management
440.1A	Worker Protection Management for DOE Federal and Contractor Employees
451.1B	National Environmental Policy Act Compliance Program
460.1A	Packaging and Transportation Safety
460.2	Departmental Materials Transportation and Packaging Management
470.1	Safeguards and Security Program
471.1A	Identification and Protection of Unclassified Controlled Nuclear Information
471.2A	Information Security Program
472.1B	Personnel Security Activities
474.1A	Control and Accountability of Nuclear Materials
1270.2B	Safeguards Agreement with the International Atomic Energy Agency
3790.1B	Federal Employee Occupational Safety and Health Program
4330.4B	Maintenance Management Program
4700.1	Project Management System
5400.1	General Environmental Protection Program
5400.5	Radiation Protection of the Public and the Environment
5480.19	Conduct of Operations Requirements for DOE Facilities
5480.20A	Personnel Selection, Qualification, and Training Requirements for DOE Nuclear Facilities
5480.21	Unreviewed Safety Questions
5480.22	Technical Safety Requirements
5480.23	Nuclear Safety Analysis Reports
5632.1C	Protection and Control of Safeguards and Security Interests
5660.1B	Management of Nuclear Materials
6430.1A	General Design Criteria
1020-94	Natural Phenomena Hazards Design and Evaluation Criteria for Department of Energy Facilities
1021-93	Natural Phenomena Hazards Performance Categorization Guidelines for Structures, Systems, and Components
1024-92	Guidelines for Use of Probabilistic Seismic Hazard Curves at Department of Energy Sites for Department of Energy Facilities
1027-92	Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23 Nuclear Safety Analysis Reports
3009-94	Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Safety Analysis Reports
3011-94	Guidance for Preparation of DOE 5480.22 (TSR) and DOE 5480.23 (SAR) Implementation Plans

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Sullivan, M. A., 1998, U.S. Department of Energy, General Counsel, letter to J. T. Greeves, U.S. Nuclear Regulatory Commission, Office of Nuclear Material Safety and Safeguards, "Natural Resources Defense Council Petition to Exercise Licensing Authority over Savannah River Site High-Level Waste Tanks," September 30.

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