

## CHAPTER 7. APPLICABLE LAWS, REGULATIONS, AND OTHER REQUIREMENTS

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

Section 7.1 discusses the major Federal and State of South Carolina statutes and regulations that impose environmental protection requirements on DOE and which require DOE to obtain a permit prior to construction and operation of spent nuclear fuel facilities. Each of the applicable regulations 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 statutes may require consultations with various authorities to determine if an action (such as construction and operation of a facility) requires a permit or the implementation of protective or mitigative measures. Sections 7.1.1 and 7.1.2 discuss the environmental permitting process and lists the environmental permits and consultations (see Table 7-1) applicable to construction and operation of the spent nuclear fuel facilities.

Sections 7.2 and 7.3 address the major Federal regulations and Executive Orders, respectively, which address issues such as protection of public health and the environment, worker safety, and emergency planning. 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 7.4) that are mandatory for operating contractors of DOE-owned facilities.

### 7.1 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 which will be emitted from the facility. Section 7.1.1 discusses the environmental statutes and regulations under which DOE will be required to obtain permits. Table 7-1 lists the permits.

#### 7.1.1 ENVIRONMENTAL PROTECTION PERMITS

*Clean Air Act, as amended, (42 USC 7401 et seq.), (40 CFR Parts 50-99); South Carolina Pollution Control Act [Section 48-1-30 et seq., South Carolina Department of Health and Environmental Control (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.” 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 establish 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 the EPA in 40 CFR Parts 50 through 99. In particular, radionuclide emissions are regulated under the National Emission Standard for Hazardous Air Pollutants Program (NESHAP) (see 40 CFR Part 61).

EPA has overall authority for the Clean Air Act; however, it delegates primary authority to states which have an established air pollution control program approved by EPA. In South Carolina, EPA has retained authority over radionuclide emissions (40 CFR Part 61) and has delegated to 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 (diesel generators, concrete batch plants etc.) constructed and operated at any SNF facility. The permits will contain operating conditions and effluent limitations for pollutants emitted from the facilities (see Table 7-1).

DOE is currently determining if a NESHAP permit will be required for radiological emissions from any spent nuclear fuel facilities (stacks, process vents, etc.). 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. DOE is currently investigating methods for estimating the transfer, storage and treatment facility source term in accordance with NESHAP requirements to calculate if the emissions would result in an effective dose equivalent of less than the 0.1 millirem per year level. Based on the results of this calculation, DOE will, prior to the start of construction, request EPA approval of the methodology for calculating the projected dose or complete a NESHAP permit application.

***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 Federal Water Pollution Act (commonly known as the Clean Water Act), was enacted to “restore and maintain the chemical, physical and biological integrity of the Nation’s water.” The Clean Water Act prohibits the “discharge of toxic pollutants in toxic amounts” to navigable waters of the United States (Section 101). Section 313 of the Clean Water Act, as amended, requires all branches of the Federal Government engaged in any activity that might result in a discharge or runoff of pollutants to surface waters to comply with Federal, state, interstate, and local requirements.

In addition to setting water quality standards for the Nation’s waterways, the Clean Water Act supplies guidelines and limitations (Sections 301-303) for effluent discharges from

point-source discharges and provides authority (Sections 401-402) for the EPA to implement the National Pollutant Discharge Elimination System (NPDES) permitting program pursuant to 40 CFR Part 122 *et seq.*

EPA has delegated primary enforcement authority for the Clean Water Act 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 address general utility water discharges. The permit contains effluent limitations for physical parameters such as flow and temperature and for chemical pollutants with which the permittee/discharge must comply. DOE will apply for a discharge permit for SNF facilities if the process chosen results in discharges to waters of the State (see Table 7-1).

In Section 402(p) of the Clean Water Act EPA established regulations (40 CFR Part 122.26) for issuing permits for stormwater discharges associated with industrial activity. Accordingly, SCDHEC has issued a General Permit for Storm Water Discharges Associated with Industrial Activities (Permit No. SCR000000) authorizing 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-SR has developed a Storm Water Pollution Prevention Plan (SWPPP) for storm water discharges at SRS. The SRS SWPPP would need to be revised to include pollution prevention measures to be implemented for operation of SNF facilities (See Table 7-1) if industrial activities are exposed to stormwater. SCDHEC has issued a General Permit for stormwater 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 Clean Water Act requires that a 404 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 Clean Water Act requires certification that discharges from construction or operation of facilities, including discharges of dredged and fill material into navigable waters will comply with applicable water standards. This certification, which is granted by SCDHEC, is a prerequisite for the 404 permit. DOE does not believe that a 404 permit will be required for construction of the SNF facilities.

***Federal Safe Drinking Water Act, as amended [42 USC 300 (F) et seq., 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 and all sources of drinking water. The implementing regulations, administered by the EPA unless delegated to the States, establish standards applicable to public water systems. They promulgate maximum contaminant levels (including those for radioactivity), 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. Safe Drinking Water Act requirements have been promulgated by the EPA in 40 CFR Parts 100 through 149. 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.

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). For radioactive material, the regulations specify that the average annual concentration of manmade radionuclides in drinking water as delivered to the user by such a system shall not produce a dose equivalent to the total body or an internal organ greater than four millirem per year beta-gamma activity. Construction and operation permits will be required for any major new components associated with the SNF facilities. See Table 7-1.

***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 Environmental Protection Agency 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.

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 of. The method of treatment, storage, or disposal also affects the extent and complexity of the requirements.

Historically, DOE chemically processed spent nuclear fuel to recover valuable products and fissionable materials, and as such, the spent nuclear fuel was not a solid waste under the Resource Conservation and Recovery Act.

World events have resulted in significant changes in DOE's direction and operations. In particular, in April 1992, DOE announced the phase-out of processing for the recovery of special nuclear materials. With these changes, DOE's focus on most of its spent nuclear fuel has changed from processing and recovery of materials to storage and ultimate disposition. This in turn has created uncertainty regarding the regulatory status of some of DOE's spent nuclear fuel relative to the Resource Conservation and Recovery Act.

DOE has initiated discussion with the Environmental Protection Agency on the potential applicability of the Resource Conservation and Recovery Act to spent nuclear fuel. In 1995, an investigation of the applicability of RCRA regulations to a variety of spent fuels and special nuclear materials that were then stored on the SRS (Huggins 1995) concluded, based largely on process knowledge and engineering judgment, that none of the spent fuel in question contained RCRA listed or characteristic material. The evaluated fuel types and cladding materials included aluminum cladding, uranium metal, thorium dioxide, uranium and thorium dioxide powders and pellets, uranium-plutonium powders and pellets, and beryllium oxide powders and pellets. The specific fuels are not necessarily identical to those evaluated in this EIS; however the calculations were conservative and assumed that similar types of fuel or cladding would generally have the same material specifications regardless of where the fuel was fabricated (Huggins 1995). Uranium silicide fuels were not considered in the 1995 evaluation but, based on the general chemical composition (Knight 1993) of uranium silicide fuel and the method used for Toxicity Characteristic Leaching Procedure (TCLP) calculations (Huggins 1995), it does not appear that uranium silicide fuels would qualify as a RCRA hazardous waste.

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

The FFCA was enacted on October 6, 1992, amended the Resource Conservation Recovery Act. The FFCA waived sovereign immunity for fines and penalties for violations at Federal facilities associated with the management of mixed waste. However, a provision postpones fines and penalties after 3 years for mixed waste storage prohibition violations at DOE sites and requires DOE to prepare plans for developing the required treatment capacity for mixed waste stored or generated at each facility. Each plan must be approved by the host State or the EPA, after consultation with other affected States, and a consent order must be issued by the regulator requiring compliance with the plan. The Federal Facility Compliance Act further provides that DOE will not be subject to fines and penalties for land disposal restriction storage prohibition violations for mixed waste as long as it is in compliance with such an approved plan and consent order and meets all other applicable regulations. This would apply to mixed waste generated as a result of operation of SNF management facilities which are subject to requirements of the Resource Conservation and Recovery Act. On September 20, 1995, the SCDHEC approved, with modification, the Site Treatment Plan for SRS. SCDHEC issued a consent order, signed by DOE, requiring compliance with the plan on September 29, 1995. DOE would be required to notify SCDHEC of new mixed waste streams generated as result of SNF management operations.

***Federal Aviation Act of 1958 (49 USC 1504)  
Federal Aviation Administration Regulations  
(14 CFR Part 77)***

The Federal Aviation Administration requires that a permit be issued for any structure greater than 200 feet in height which would affect navigable airspace (see Table 7-1). A permit would be required for structures at the SNF site greater than 200 feet in height.

**7.1.2 PROTECTION OF BIOLOGICAL,  
HISTORIC, AND ARCHAEOLOGICAL  
RESOURCES**

The following statutes pertain to protection of endangered and threatened animal and plants.

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

The Endangered Species Act, as amended, is intended to prevent the further decline of endangered and threatened species and to restore these species and their habitats. The Act is jointly administered by the United States Departments of Commerce and Interior. Section 7 of the Act requires consultation with the Fish and Wildlife Service (Interior) and the National Marine Fisheries Service (Commerce) to determine if endangered and threatened species or their critical habitats are in the vicinity of the proposed action. DOE will comply with the Section 7 Process.

All sites considered for construction of new SNF management facilities are within fenced, disturbed industrial areas. The potential for conditions suitable to support threatened or endangered species does not exist.

***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 harvest of migratory birds by specifying things such as the mode of harvest, 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." DOE would be required to consult with the Fish and Wildlife Service regarding impacts to migratory birds and to evaluate ways to avoid or minimize these effects in accordance with the Fish and Wildlife Service Mitigation Policy during construction and operation of SNF management facilities.

***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. All sites considered for the SNF management facilities 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 (SC SHPO) ensures the proper identification of potentially significant sites and the implementation of appropriate mitigative actions. All sites considered for SNF management facilities are within previously disturbed industrial sites.

***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.

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

This law directs the Secretary of Interior to assume responsibilities 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 land.

***American Indian Religious Freedom Act of 1978 (42 USC 1996)***

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.

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).

In addition, the Savannah River Archaeological Research Program (SRARP) conducted an archeological survey of the preferred APT site in March 1997. The archeological review included potential sites associated with Native American activities or habitat. The resulting SRARP report stated that no archaeological sites present on the preferred site were eligible for nomination to the National Registry of Historical Places and further indicated that SRARP would request from the SC SHPO a determination of no effect from the construction of APT at the preferred site.

## **7.2 Statutes and Regulations Related to Emergency Planning, Worker Safety, and Protection of Public Health and the Environment**

### **7.2.1 ENVIRONMENTAL PROTECTION**

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

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

This EIS has been prepared in response to 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. It discusses reasonable alternatives and their potential environmental consequences.

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

The Pollution Prevention Act of 1990 establishes 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 participation in the Superfund Amendments and Reauthorization Act Section 313, U.S. 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 had to 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.

EC

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

This regulation is issued under the authority of Section 6002 of the Resource Conservation and Recovery Act 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 utilized in the construction and operation of SNF management facilities should 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 the Resource Conservation and Recovery Act or other statutes, particularly polychlorinated biphenyls (40 CFR Part 761), chlorofluorocarbons (40 CFR Part 762), and asbestos (40 CFR Part 763). It is expected that the use of these materials at APT would be limited, or not occur; however, programs and procedures would need to be implemented to address appropriate management and disposal of waste generated as a result of their use.

### **7.2.2 EMERGENCY PLANNING AND RESPONSE**

This section discusses the regulations which address protection of public health, worker safety, and require the establishment of emergency plans and the 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 7.4.

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

The Atomic Energy Act of 1954 authorizes DOE to establish standards to protect health or minimize dangers to life or property with respect to activities under its jurisdiction. Through a series of Orders, DOE has established an extensive system of standards and requirements to ensure the safe operation of its facilities.

#### ***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)***

This list 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 is one of the threshold criteria documents for DOE Emergency Preparedness Hazards Assessments

required by DOE Order 151.1, "Comprehensive Emergency Management System." An emergency response plan addressing SNF operations would need to promulgated in accordance with this regulation.

#### ***Reorganization Plan No. 3 of 1978, Public Health and Welfare (42 USC 5121 et seq.), Emergency Management and Assistance (44 CFR Part 1-399)***

These regulations generally include the policies, procedures and set forth the responsibilities of the Federal Emergency Management Agency, the Nuclear Regulatory Commission, and the Department of Energy for implementing a Federal Emergency Preparedness Program including radiological planning and preparedness. An emergency response plan, including radiological planning and preparedness for SNF management operations, would need to 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 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. 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 Title III as a matter of Departmental policy. The requirements for this Act were promulgated by EPA in 40 CFR Parts 350 through 372. The SRS submits hazardous chemical inventory re-

ports to the SCDHEC. The chemical inventory could change depending on the alternative(s) DOE implemented; 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 this regulation. It also specifies the requirements for providing hazardous material information and training. Materials shipped to and from SNF management facilities would be required to 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 “Superfund,” the Act and implementing regulations provide the needed general authority for Federal and state governments to respond directly to hazardous substances incidents. The regulations require reporting of spills, including radioactive, to the National Response Center. SNF management operations would be required to comply with these regulations in the event of spills of hazardous materials at SNF facilities. DOE Orders generally set forth the programs for development of internal procedures for implementing the regulations.

***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, a U.S. Department of Labor agency. While the Occupational Safety and Health Administration and EPA both have a mandate to reduce exposures to toxic substances, the Occupational Safety and Health Administration’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 Occupational Safety and Health Administration regulations (29 CFR) establish specific standards telling employers what must be done to achieve a safe and healthful working environment. This regulation sets down the Occupational Safety and Health Administration 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 hazards communication (Section 1910.1200) that enables employees to be aware of the dangers they face from hazardous materials at their workplace. DOE places emphasis on compliance with these regulations at its facilities and prescribes through DOE Orders the Occupational Safety and Health Act 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 Occupational Safety and Health Administration 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 envi-

ronment free from noise that jeopardizes health and welfare.

### **7.3 Executive Orders**

The following executive orders would be in effect for the construction and operation of the APT. 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 and to develop procedures to ensure the fullest practicable provision of timely public information and understanding of Federal plans and programs with environmental impact 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 prevention technologies.

#### ***Executive Order 12898 (Environmental Justice)***

Executive Order 12898 requires 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 a program for conservation of energy and water resources.

### **7.4 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 construction and operation of SNF management facilities.

The DOE regulations address such areas as energy conservation, administrative requirements and procedures, nuclear safety, and classified information. For the purposes of this EIS, 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, construc-

tion, or operation of DOE facilities. These regulations would be in effect for the construction and operation of any facilities associated with the production and management of tritium. DOE Orders generally set forth policy and the programs and internal procedures for implementing those policies.

**Table 7-2.** DOE Orders and Notices relevant to spent nuclear fuel management.

DOE Order	DOE Orders
151.1	Comprehensive Emergency Management System
225.1	Accident Investigations
231.1	Environment, Safety, and Health Reporting
232.1	Occurrence Reporting and Processing of Operations Information
420.1	Facility Safety
425.1	Startup and Restart of Nuclear Facilities
430.1	Life-Cycle Asset Management
440.1	Worker Protection Management for DOE Federal and Contractor Employees
441.1	DOE Radiological Health and Safety Policy
441.2	Extension of DOE 441.1 (9-19-96)
441.3	Extension of DOE 441.1 (9-17-97)
451.1A	National Environmental Policy Act Compliance Program
460.1A	Packaging and Transportation Safety
460.2	Departmental Materials and Packaging Management
470.1	Safeguards and Security Program
471.1	Identification and Protection of Unclassified Controlled Nuclear Information
471.2A	Information Security Program
472.1B	Personnel Security Activities
1270.2B	Safeguards Agreement with the International Atomic Energy Agency
1300.2A	Department of Energy Technical Standards Program
1360.2B	Unclassified Computer Security Program
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
5400.3	Hazardous and Radioactive Mixed Waste Program
5400.5	Radiation Protection of the Public and the Environment
5480.4	Environmental Protection, Safety, and Health Protection Standards
5480.17	Site Safety Representatives
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
5480.25	Safety of Accelerator Facilities
5480.27	Equipment Qualification for Reactor and Nonreactor Nuclear Facilities
5484.1	Environmental Protection, Safety, and Health Protection Information Reporting Requirements
5630.12A	Safeguards and Security Inspection and Evaluation Program
5632.1C	Protection and Control of Safeguards and Security Interests
5633.3B	Control and Accountability of Nuclear Materials
5660.1B	Management of Nuclear Materials
5700.6C	Quality Assurance
5820.2A	Radioactive Waste Management
6430.1A	General Design Criteria

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DOE Standards	
1020-94	Natural Phenomena Hazards Design and Evaluation Criteria for Department of Energy Facilities
1021-94	Natural Phenomena Hazards Performance Categorization Criteria for Structure, Systems, and Components
1024-92	Guidelines for Use of Probabilistic Seismic Hazard Curves at Department of Energy Sites
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	DOE Standard Guidance for Preparation of DOE 5480.22 and DOE 5480.23 Implementation Plans

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## References

- Batson, W. T., J. S. Angerman, and J. T. Jones, 1985, *Flora of the Savannah River Plant: An Inventory of the Vascular Plants on the Savannah River Plant, South Carolina*, Savannah River Plant National Environmental Research Park Program, Aiken, South Carolina.
- DOE (U.S. Department of Energy), 1991, American Indian Religious Freedom Act Compliance at the Savannah River Site, Savannah River Operations Office, Aiken, South Carolina.
- Huggins, L. B., 1995, *RCRA Characterization of Nuclear Materials in Inventory (NMII) Within the Excess Facilities and Reactor Fuel Storage Program Division*, Westinghouse Savannah River Company, Aiken, South Carolina.
- Knight, R. W., 1993, *Observations in the Manufacture of Aluminum-Based Research Reactor Fuel Elements*, Martin Marietta, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

CHAPTER 7. APPLICABLE LAWS, REGULATIONS, AND OTHER REQUIREMENTS

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