Environmental Compliance

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It is the policy of the U.S. Department of Energy (DOE) that all activities at the Savannah River Site (SRS) be carried out in full compliance with applicable federal, state, and local environmental laws and regulations, and with DOE orders, notices, directives, policies, and guidance. Compliance with environmental regulations and with DOE orders related to environmental protection is a critical part of the operations at SRS.

The purpose of this chapter is to report on the status of SRS compliance with these various statutes and programmatic documents. Some key regulations with which SRS must comply, and the compliance status of each, are listed in table 3–1.

This chapter also provides information on Notices of Violation (NOVs), if any, issued by the U.S. Environmental Protection Agency (EPA) or the South Carolina Department of Health and Environmental Control (SCDHEC). NOVs are the regulatory tool used to inform organizations when their activities do not meet expected requirements. These can include NOVs against the organization's permitted activities or against the general provisions of environmental regulations, such as failing to obtain construction permits prior to construction of new air release sources. SRS received no NOVs in 2007.

Compliance Activities

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) was passed in 1976 to address solid and hazardous waste management. The law requires that EPA regulate the management of solid and hazardous wastes, such as spent solvents, batteries, and many other discarded substances potentially harmful to human health and the environment. Amendments to RCRA regulate nonhazardous solid waste and some underground storage tanks.
Hazardous waste generators, including SRS, must follow specific requirements for handling these wastes.

Underground Storage Tanks

The 19 underground storage tanks at SRS that house petroleum products and hazardous substances, as defined by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), are regulated under Subtitle I of RCRA. These tanks require a compliance certificate annually from SCDHEC to continue operations. SCDHEC conducts an annual compliance inspection and records audit prior to issuing the compliance certificate. SCDHEC's 2007 inspection and audit found all 19 tanks to be in compliance.

WSRC's Underground Storage Tank Program was awarded the Summer 2007 Certificate of Environmental Excellence Award by SCDHEC in the nonretail category for passing 5 consecutive years of SCDHEC environmental audits without a regulatory violation.

Land Disposal Restrictions

The 1984 RCRA amendments established Land Disposal Restrictions (LDRs) to minimize the threat of hazardous constituents migrating to groundwater sources. The same restrictions apply to mixed (hazardous and radioactive) waste.

Treatability variances are an option available to waste generation facilities if alternate treatment methods are appropriate for specific waste streams. SRS has identified two mixed waste streams remaining to be treated that are candidates for treatability variances. Because of special problems associated with radioactive components, these variances involving silver coated packing material and tritiated water with

Table 3–1
Laws/Regulations Applicable to SRS

Legislation	What It Requires	In Compliance
RCRA Resource Conservation and Recovery Act (1976)	The management of hazardous and nonhazardous wastes and of underground storage tanks containing hazardous substances and petroleum products	✓
FFCAct Federal Facility Compliance Act (1992)	The development by DOE of schedules for mixed waste treatment to meet LDR requirements	✓
CERCLA; SARA Comprehensive Environmental Response, Compensation, and Liability Act (1980); Superfund Amendments and Reauthorization Act (1986)	The establishment of liability compensation, cleanup, and emergency response for hazardous substances released to the environment	✓
EPCRA Emergency Planning and Community Right-to-Know Act (1986)	The reporting of hazardous substances used on site (and their releases) to EPA, state, and local planning units	✓
NEPA National Environmental Policy Act (1969)	The evaluation of the potential environmental impact of federal activities and alternatives	✓
SDWA Safe Drinking Water Act (1974)	The protection of public drinking water systems	✓
CWA (NPDES) Clean Water Act (1977), (National Pollutant Discharge Elimination System)	The regulation of liquid discharges at outfalls (e.g., drains or pipes) that carry effluents to streams	✓
FIFRA Federal Insecticide, Fungicide, and Rodenticide Act (1947)	The regulation of restricted-use pesticides at SRS through a state-administered certification program	✓
CAA (NESHAP) Clean Air Act (1970), (National Emission Standards for Hazardous Air Pollutants)	The establishment of air quality standards for criteria pollutants, such as sulfur dioxide and particulate matter, and hazardous air emissions, such as radionuclides and benzene	✓
TSCA Toxic Substances Control Act (1976)	The regulation of PCBs, radon, asbestos, and lead used in sensitive populations, as well as evaluation and notification to EPA of new chemicals and significant new uses of existing chemicals	✓
ESA Endangered Species Act (1973)	The protection of critically imperiled species from extinction	✓
NHPA National Historic Preservation Act (1966)	The preservation of historical and archaeological sites	✓

mercury were completed and sent in 1997 to EPA, where they continue to await approval.

Federal Facility Compliance Act

The Federal Facility Compliance Act (FFCAct) was signed into law in October 1992 as an amendment to the Solid Waste Disposal Act to add provisions concerning the application of certain requirements and sanctions to federal facilities. A Site Treatment Plan (STP) (WSRC–TR–94–0608) consent order (95–22–HW, as amended) was obtained and implemented in 1995, as required by the FFCAct. A Statement of Mutual Understanding (SMU) for Cleanup Credits was executed by SCDHEC in October 2003, allowing SRS to earn credits for certain accelerated cleanup actions. Credits then can be applied to the STP commitment schedules. SRS submitted to SCDHEC an annual update to the approved STP in November 2007 that identified changes in mixed waste treatment and inventory. Changes in the 2007 STP update include

- updating the commitment summary for the new fiscal year
- changing the status of SR–W085 (Rocky Flats plutonium) to "eliminated" since the waste was shipped to WIPP directly from Rocky Flats
- streamlining the 2007 STP update by deleting Volume II, chapters 1,2,7,8,9,10, and 12 and archiving these chapters within the update
- revising the status of salt processing facilities and budget
- revising the current cumulative inventory

The site also has shipped mixed waste to offsite vendors for treatment. STP updates will continue to be produced annually unless provisions of the consent order are modified.

Liquid Radioactive Waste Tank Closure

The primary regulatory goal of SRS's waste tank closure program at the F-Area and H-Area liquid radioactive waste tank farms is to close the tank systems in a way that protects public health and the environment in accordance with SCDHEC's Regulation 61–82, "Proper Closeout of Wastewater Treatment Facilities." Under this program, the first two high-level waste tanks (i.e., 17F and 20F) were closed in 1997.

Waste heel removal was completed in 2003 for tanks 18F and 19F and the 1F evaporator system. (NOTE: "Waste heel" is the material remaining in the tank after conventional and any agreed upon special removal efforts have been completed.) The residual material for these facilities has been sampled and characterized. Tanks 18F and 19F have been isolated and require only administrative safety basis controls; however, the next action for these two tanks will depend on the outcome of testing a new technology to determine if additional residual material can be removed safely from the two tanks. If the testing is successful, then the technology potentially can be utilized to remove portions of the remaining residual materials in the tanks.

Following evaluation and implementation of the proposed technology, a waste determination in accordance with Section 3116 of the Ronald W. Reagan National Defense Authorization Act of Fiscal Year 2005 (NDAA) will be completed prior to grouting and operational closure. The NDAA authorizes the Secretary of Energy, in consultation with the Nuclear Regulatory Commission (NRC), to determine that certain waste from reprocessing activities can be managed and disposed as low-level radioactive waste. DOE also must obtain SCDHEC approval of the F-Tank Farm Closure Plan and Closure Module for the specific tanks.

DOE had begun preparation in late 2004 of the Section 3116 documentation entitled "Draft Section 3116 Determination for Closure of Tank 19 and Tank 18 at the Savannah River Site." This draft was submitted to the NRC in 2005. DOE, the NRC, the State of South Carolina, and the public continue to discuss tank closure determination issues, such as the evaluation of new technology for removal of additional residual waste and the subsequent development of a new F-Tank Farm Performance Assessment incorporating results from additional waste removal efforts that would support closure of tanks 18F and 19F, as well as additional tanks in F-Tank Farm.

Activities also are under way regarding revisions of the General Closure Plan and Tank Closure Modules to support closure of tanks 18F and 19F, consistent with the legislation contained in the NDDA and South Carolina regulations.

The Federal Facility Agreement (FFA) dates for operational closure of these two tanks were revised in 2004 to October 31, 2006, for tank 19F and February 28, 2007, for tank 18F [FFA, 1993]. In March 2006, DOE requested that these closure dates be extended by 13 months. This request led to a resolution conducted in accordance with the requirements of the FFA. On November 19, 2007, SCDHEC, EPA Region IV, and DOE's Savannah River Operations Office (DOE–SR) agreed to an operational closure date of December 31, 2012, for tanks 18F and 19F. This revised date supersedes the dates shown for these two tanks in the FFA Waste Removal Schedule, Revision 2 (September 6, 2004).

Waste Minimization/Pollution Prevention (WMin/P2) Program

2007 Program Results and Highlights The SRS WMin/P2 Program continued to achieve significant results in 2007. All required site waste generators demonstrated active participation in the program through documented pollution avoidance and/or direct mission support activities for site recycling. Site employee P2 awareness was increased through online articles and general employee and job-specific training.

The WMin/P2 Program met all DOE and regulatory agency reporting requirements through site profile and Environmental Management System (EMS) input. Program accomplishments during 2007 included the following:

- SRS documented 34 P2 projects, resulting in an annualized avoidance of 1,736 m^3 of hazardous and radioactive waste, which exceeded the site's 2007 P2 Program waste avoidance performance goal of 955 m^3 by more than 80 percent. Annual cost avoidance resulting from the 34 documented P2 projects was $22.7 million.

- DOE–Headquarters (DOE–HQ) announced that SRS won five National DOE P2 awards. Winning nominations were *SRS ALARA Center – Models EMS Excellence, SRS F&H Area Barrier Wall Project, SRS Chemical Management Center, SRS TRU Waste Remediation, and Tritium Operations Reduces Glove Box Waste*. These award-winning projects were forwarded to the next competition tier, with one project (specifically, *SRS Chemical Management Center*) winning a P2 STAR Honorable Mention award. Additionally, best practices from the Chemical Management Center were singled out for presentation to DOE Complex field office managers.

- SRS completed the *"Executive Order 13423, Strengthening Federal Environmental, Energy, and Transportation Management – GAP Analysis Report"* (ESH–EMS–2007–00143), which describes SRS implementation of this new federal directive.

Pollution prevention support was provided to DOE–HQ program offices in 2007. The SRS P2 Program was represented at the Federal Environmental Executive P2 Workshop, which included a separate DOE–HQ P2 Planning Workshop. WSRC also provided information highlighting SRS pollution prevention activities at the DOE–HQ Earth Day celebration.

WSRC also participated in EPA voluntary P2 programs by maintaining its EPA Waste Wise membership and joining the Federal Electronic Reuse and Recycle Campaign (reporting 85,765 pounds of electronics recycled and reused during the five-month campaign period in FY 2007). WSRC also joined the EPA "National Partnership for Environmental Priorities" volunteer program.

The SRS pollution prevention team additionally supported P2 awareness in 2007 on site and in the local community, as follows:

- SRS provided materials promoting pollution prevention to the annual SRS Safety Conference Family Night event.
- The P2 Program provided financial and voluntary support for the North Augusta Kids Earth Day, which featured more than 30 separate exhibits to educate and share with the 2,000-plus attendees.
- The P2 Program provided financial and voluntary support for the Environmental Science Education Cooperative (ESEC), sponsoring a graded session at the ECOMEET, an environmental competition for middle school students. Twenty-six teams participated in the 2007 event.
- The P2 Program supported the ESEC Electronics Recycle Day and the Environmental Teacher of the Year Awards in Augusta, Georgia, and hosted the ESEC display for the National Science Center's Education Expo Workshop.

Comprehensive Environmental Response, Compensation, and Liability Act

SRS was placed on the National Priority List in December 1989, under the legislative authority of CERCLA (Public Law 96–510), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA, Public Law 99–499). In accordance with Section 120 of CERCLA, DOE, EPA Region 4, and SCDHEC entered into the SRS FFA, which became effective August 16, 1993, and which directs the comprehensive environmental remediation of the site. A total of 101 milestones documented in the SRS FFA were scheduled for completion during FY07; all were accomplished on or ahead of schedule.

SRS has 515 waste units in the Soil and Groundwater Closure Projects (SGCP) program. At the end of CY07, remediation was in progress, or had been completed, in 371 units and areas (352 complete and 19 in the remediation phase). Closure activities included the following:

- Twelve RCRA Facility Investigation/Remedial Investigations (RFI/RIs) were initiated.
- Three remedial actions were initiated.
- Three Post-Construction Reports were submitted.
- One removal action was initiated.
- Two Records of Decision (RODs) were submitted.
- Three RODs were approved.
- Five RODs with certification signatures were issued.

A listing of all 515 waste units at SRS can be found in appendices C ("RCRA/CERCLA Units List") and G ("Site Evaluation List") of the FFA.

Emergency Planning and Community Right-to-Know Act

The Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 requires facilities to notify state and local emergency planning entities about their hazardous chemical inventories and to report releases of hazardous chemicals. The Pollution Prevention Act of 1990 expanded the EPCRA-mandated Toxic Chemical Release Inventory report to include source reduction and recycling activities.

Table 3–2
SRS Reporting Requirements under "Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements" (Executive Order 12856)

EPCRA Citation	Activity Regulated	Reported per Applicable Requirement
302–303	Planning Notification	Not Required[a]
304	Extremely Hazardous Substances Release Notification	Not Required[a]
311–312	Material Safety Data Sheet/ Chemical Inventory	Yes
313	Toxic Release Inventory Reporting	Yes

[a] Not required to report under provisions of "Executive Order 12856" and SARA Title III Reporting Requirements

Executive Order 12856

Executive Order 12856, "Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements," requires that all federal facilities comply with right-to-know laws and pollution prevention requirements. SRS complies with the applicable reporting requirements for EPCRA, as indicated in table 3–2, and the site incorporates the toxic chemicals on the Toxic Chemical Release Inventory Report into its pollution prevention efforts.

Tier II Inventory Report

Under Section 312 of EPCRA, SRS completes an annual Tier II Inventory Report for all hazardous chemicals present at the site in excess of specified quantities during the calendar year. Hazardous chemical storage information is submitted to state and local authorities by March 1 for the previous calendar year.

Toxic I Release Inventory Report

Under Section 313 of EPCRA, SRS must file an annual Toxic Release Inventory report by July 1 for the previous year. SRS calculates chemical releases to the environment for each regulated chemical that exceeds its established threshold and (in addition to other inventory data sets) reports the release values to EPA on Form R of the report.

Form R for 2006 was submitted to EPA July 1, 2007. SRS reported the following chemicals that exceeded their thresholds: barium, chlorine, chromium, copper, fluorine, formic acid, hydrochloric acid, lead, manganese, mercury, nickel, nitrate, nitric acid, sodium nitrite, sulfuric acid, and zinc. (NOTE: The term "exceeded" in an EPCRA context does not indicate a violation. Per EPA regulations, SARA chemical limits are established, and reporting requirements are based on these threshold values.) Specific details, including release amounts and detailed information about toxic release inventory reporting, can be viewed on the EPA website at www.epa.gov/tri/tridata.

National Environmental Policy Act

The National Environmental Policy Act (NEPA) establishes policies and goals for the protection, maintenance, and enhancement of the human environment in the United States. The act requires that federal agencies (1) incorporate environmental values and public input into their planning and decision-making processes and (2) evaluate environmental impacts before committing significant resources to the implementation of a proposed federal action. A federal action is one undertaken by or for a federal agency (e.g., DOE), or one that involves federal monies or permits. Prior to the implementation of a federal action, SRS prepares an Environmental Evaluation Checklist (EEC), which initiates the NEPA process and is used to identify potential environmental impacts and regulatory requirements (e.g., federal and state permits) associated with proposed SRS actions by preparing Environmental Impact Statements (EISs) and Environmental Assessments (EAs).

A total of 509 SRS-related EEC reviews were conducted in 2007 (table 3–3). Several of these reviews were still in progress at the end of the year. Following is a listing of the major NEPA reviews conducted in 2007 that impact SRS:

- *Surplus Plutonium Disposition Supplemental EIS (DOE/EIS–0283–S2)* – This Supplemental EIS (SEIS) evaluates the potential impacts of implementing selected surplus plutonium disposition alternatives at SRS. Disposition alternatives being considered include (a) processing in H-Canyon, (b) using the Mixed Oxide Fuel (MOX) Fabrication Facility, and (c) using a can-in-canister immobilization (glass or ceramic) process. If implemented, the immobilization facility would be built in K-Area. DOE expects to publish the draft SEIS in September 2008.

Table 3–3
Summary of SRS EEC/NEPA Actions in 2007

NEPA Evaluations Completed	Number
Categorical Exclusions	165
Actions Tiered to Previous NEPA Reviews	19
Environmental Impact Statements	5
Supplement Analyses	3
Amended Record of Decision	1
Environmental Assessments	3
Total	**196[a]**
EEC Reviews Completed	**509[a]**

[a] The 509 EEC reviews include the 196 NEPA evaluations.

- *Programmatic EIS for Disposition Of Scrap Metals (DOE/EIS–0327)* – This Programmatic EIS (PEIS) evaluates alternatives for the disposition of scrap metals that may have been in radiological areas. The disposition alternatives include: (a) continuation of the suspension on unrestricted release of metals for recycling, (b) unrestricted release of scrap metals for recycling, and (c) disposal. The schedule for this PEIS is uncertain.

- *EIS for the Disposal of Greater-Than-Class-C Low-Level Radioactive Waste (GTCC LLW) (DOE/EIS–0375)* – This EIS evaluates the impacts of disposing GTCC LLW in a geologic repository, in intermediate-depth boreholes, or in enhanced near-surface disposal facilities. Candidate DOE sites being considered for these disposal facilities include SRS, Idaho National Laboratory, Los Alamos National Laboratory, Waste Isolation Pilot Plant, Nevada Test Site, Oak Ridge, Hanford, and Yucca Mountain. The EIS also considers generic commercial disposal of GTCC LLW at arid and humid locations. Disposal alternatives being considered for SRS include an intermediate depth borehole facility and an enhanced near-surface facility. The draft EIS is projected to be published in mid-2008.

- *Complex Transformation Supplemental Programmatic EIS (DOE/EIS–0236–S4)* – This supplemental PEIS evaluates the environmental impacts associated with the National Nuclear

Security Administration's proposed modernization of the nuclear weapons complex. The existing tritium mission at SRS is part of the "No Action" alternative and would not be affected. SRS also is being considered as an alternative site for a Consolidated Plutonium Center for long-term research and development, surveillance, and pit manufacturing operations. The draft PEIS is expected to be published for public review in January 2008. The final PEIS and ROD are expected to be available in August and September 2008, respectively.

- *Programmatic EIS for the Global Nuclear Energy Partnership (GNEP) Technology Demonstration Program (DOE/EIS–0396)* – The GNEP program would encourage expansion of domestic and international nuclear energy production while reducing nuclear proliferation risks. SRS is being considered as a site for a proposed advanced fuel cycle research facility. A public scoping meeting for this PEIS was held in North Augusta, SC, in February 2007. Publication of the draft PEIS is expected in August 2008.
- *Supplement Analysis: Storage and Disposition of Weapons-Usable Fissile Materials FPEIS (DOE/EIS–0229)* – This SA reviewed the proposed action to continue the consolidation at SRS of surplus nonpit plutonium material from Hanford, Lawrence Livermore National Laboratory, and Los Alamos National Laboratory. This SA was completed in September 2007. (NOTE: "Surplus nonpit plutonium material" is plutonium-bearing material that was not incorporated into a nuclear weapon and was declared surplus by DOE.)
- *Supplement Analysis: SRS Spent Nuclear Fuel Management FEIS (DOE/EIS–0279)* – This SA, which is in progress, reviews the proposed action to continue the use of H-Canyon to process spent nuclear fuel receipts and other highly enriched uranium material through 2019.
- *Supplement Analysis: SRS Salt Processing Alternatives Final SEIS (DOE/EIS–0082–S2)* – This SA reviews the proposed action to construct a Saltstone Feed Facility that will provide lag storage for low-level liquid waste so that Tank 50 can be placed back into HLW service. Work on the SA is on hold because of questions regarding scope and funding.
- *Amended Record of Decision: Storage and Disposition of Weapons-Usable Fissile Materials FPEIS (DOE/EIS–0229)* – This amended ROD describes DOE's decision to transfer approximately 2,511 additional 3013-compliant packages containing surplus nonpit weapons-usable plutonium metals and oxides to SRS. The containers will be transferred from the Hanford Site, the Lawrence Livermore National Laboratory, and the Los Alamos National Laboratory. The amended ROD was issued September 11, 2007, in Washington, DC.
- *Environmental Assessment for the Biomass Cogeneration and Heating Facilities at SRS (DOE/EA–1605)* – This EA evaluates the potential impacts of constructing and operating a biomass-fueled cogeneration facility at SRS. This plant would replace the existing coal-fired D-Area powerhouse. The proposed action also includes replacing the K-Area steam plant with two smaller biomass-fueled boilers in K-Area and L-Area. Clean biomass and bioderived fuels will be the fuel source for all the new boilers. Publication of the draft EA is expected in September 2008.
- *Environmental Assessment for the Proposed Use of SRS Lands for Military Training (DOE/EA–1606)* – This EA evaluates the potential impacts associated with the proposed use of SRS lands for military training by the Department of Defense (e.g., U.S. Army). Publication of the draft EA is expected in early 2009.
- *Environmental Assessment for the NPDES Stormwater Compliance Alternatives at the SRS (DOE/EA–1563)* – This EA evaluated the potential environmental impacts associated with proposed and alternative actions at 38 SRS stormwater outfalls designed to protect the quality of state waters. A Finding of No Significant Impact (FONSI) for this EA was signed June 26, 2007.

Safe Drinking Water Act

The federal Safe Drinking Water Act (SDWA) was enacted in 1974 to protect public drinking water supplies. SRS domestic water is supplied by groundwater sources. The A-Area, D-Area, and K-Area systems are actively regulated by SCDHEC, while the remaining smaller water systems receive a reduced level of regulatory oversight.

Samples are collected and analyzed periodically by SRS and SCDHEC to ensure that all site domestic water systems meet SCDHEC and EPA bacteriological and chemical drinking water quality standards. All samples collected in 2007 met these standards.

Although the B-Area Bottled Water Facility is not listed by SCDHEC as a public water system, SCDHEC's Division of Food Protection will continue to conduct periodic inspections of this facility. Results from routine bacteriological analyses and annual complete chemical analyses performed in 2007 met SCDHEC and FDA water quality standards. SCDHEC conducted its biannual sanitary survey of the A-Area, D-Area, and K-Area domestic water systems in March 2007. Only a few minor "findings and recommendations" were noted during the survey, and all systems received a "satisfactory" rating (the highest possible rating).

Clean Water Act

National Pollutant Discharge Elimination System

The Clean Water Act (CWA) of 1972 created the National Pollutant Discharge Elimination System (NPDES) program, which is administered by SCDHEC under EPA authority. The program is designed to protect surface waters by limiting releases of nonradiological effluents into streams, reservoirs, and wetlands.

SRS had four NPDES permits in 2007:

- Two permits for industrial wastewater discharges (SC0047431, which covered the D-Area Powerhouse, and SC0000175, which covered the remainder of the site)
- Two general permits for stormwater discharges (SCR000000 for industrial and SCR100000 for construction)

The site also had one no-discharge permit for land applications (ND0072125)

More information about the NPDES permits can be found in chapter 4, "Effluent Monitoring."

The results of monitoring for compliance with the industrial wastewater discharge permit at SRS were reported to SCDHEC in the site's monthly discharge monitoring reports, as required by the permit.

During 2007, SRS received from SCDHEC a final rating of "satisfactory"—the highest rating given—for the annual (2006) 2-week audit of the site's NPDES-permitted outfalls. The 2006 audit was conducted in October, and no deficiencies or issues were identified. SCDHEC did not perform the annual audit in 2007, but it is anticipated that the next audit will be conducted in early 2008.

The outfalls covered by the industrial stormwater permit (SCR000000) were reevaluated again in 2006. This resulted in the development of a new sampling plan, which was implemented in 2007. No new issues were identified in 2007. Results of stormwater outfall sampling appear in an effluent monitoring data table on the CD accompanying this report.

In 2005, SCDHEC issued a new stormwater general permit (SCR000000) that required SRS stormwater discharges to meet more stringent guidelines. The site expanded the stormwater sampling program in 2006 to evaluate its stormwater outfalls against the more stringent requirements of the new permit. Nineteen of the stormwater outfalls exceeded EPA benchmarks for iron, copper, zinc, and other trace metals. Nine of these outfalls had problems that prompted SCDHEC to request that SRS submit an individual permit application for them. The application was submitted in October 2006, but SCDHEC had not yet issued the permit for these outfalls by the end of 2007. Ten outfalls exceeded EPA benchmarks, but were not of sufficient concern to require individual permits. Seven of the 10 outfalls now are in compliance with EPA benchmarks, and best management practices for the remaining three outfalls are scheduled to be completed in 2008. Based on the October 2005 agreement with SCDHEC, SRS remains in compliance with the industrial stormwater general permit.

Under the Code of Federal Regulations (CFR) Oil Pollution Prevention regulation (40 CFR 112), SRS must report petroleum product discharges of 1,000 gallons or more into or upon the navigable waters of the United States, or petroleum product discharges in harmful quantities that result in oil sheens. No such incidents occurred at the site during 2007.

SRS has an agreement with SCDHEC to report petroleum product discharges of 25 gallons or more to the environment. No such incidents occurred in 2007.

SRS's 2007 compliance rate for the NPDES program under the CWA was 100 percent. The site had no exceedances and received no NOVs during 2007—the first time SRS has operated a full calendar year with no such occurrences.

Dredge and Fill; Rivers and Harbors

The CWA, Section 404, "Dredge and Fill Permitting," as amended, and the Rivers and Harbors Act of 1899,

Sections 9 and 10, "Construction Over and Obstruction of Navigable Waters of the United States," protect U.S. waters from dredging/filling and construction activities by the permitting of such projects. Dredge-and-fill operations in U.S. waters are defined, permitted, and controlled through implementation of federal regulations in 33 CFR and 40 CFR.

SRS conducted activities in 2007 under four Nationwide Permits (NWPs) as part of the NWP program (general permits under Section 404), and under one Rivers and Harbors Act, Section 10, permit. The 2007 activities were as follows:

- Dam construction on an unnamed tributary to Fourmile Branch for the Mixed Waste Management Facility Groundwater Interim Measures project was completed in 2000 under NWP 38, "Hazardous Waste Cleanup." However, mitigation for the impact to wetlands is still pending and must be addressed before the permit can be considered closed.
- Installation of a sampling platform downstream of the SC Highway 125 bridge crossing Steel Creek was covered under NWP 5, "Scientific Measurement Devices." The installation was completed in December.
- Minor dredging of a sandbar at the intake grate of the 681–5G Pumphouse was conducted and covered under NWP 19, "Minor Dredging." The dredging was completed in November.
- Installation of piezometers/injection wells at the F-Area seepline was covered under NWP 5. SRS asked the U.S. Army Corps of Engineers for verification of this coverage and received the verification letter November 28. The project is scheduled for completion in 2008.
- Maintenance dredging of the 681–5G pumphouse canal was conducted under the Rivers and Harbors Act, Section 10, permit PN 97–1D–251. The permit expired September 30 and was closed at that time.

Water Quality Certification

Section 401, "Water Quality Certification," of the CWA is administered by SCDHEC to ensure the maintenance of water quality during dredge-and-fill projects. The 681–5G pumphouse canal maintenance dredging project also was conducted under a Water Quality Certification permit (PN–97–1D–251–W), which expired September 8 and was closed at that time.

Construction in Navigable Waters

SCDHEC Regulation 19–450, "Permit for Construction in Navigable Waters," protects South Carolina's navigable waters. The only state navigable waters at SRS are Upper Three Runs Creek (through the entire site) and Lower Three Runs Creek (upstream to the base of the PAR Pond Dam).

The 681–5G pumphouse canal maintenance dredging project also was conducted under R. 19–450. Section 401 and R. 19–450 permits are issued simultaneously by SCDHEC.

Federal Insecticide, Fungicide, and Rodenticide Act

The Federal Insecticide, Fungicide, and Rodenticide Act controls the application of restricted-use pesticides at SRS through a state-administered certification program. The site complies with these requirements through Procedure 8.1, "Federal Insecticide, Fungicide, and Rodenticide Act Compliance for Use of Pesticides," of the Environmental Compliance Manual (WSRC 3Q).

The SRS pesticide procedure provides guidelines for pesticide use and requires that applicators of restricted-use pesticides be state certified. Extensive revisions of the procedure have been incorporated in recent years to improve the efficiency of the site pesticide-application approval process. The most significant changes involved (1) dropping the requirement for a formal pesticide program plan for the application of unrestricted pesticides and (2) renewing emphasis on the importance of completing a Pesticide Activity Report (PAR) within 14 days (formerly 15) of any site pesticide application. Additional changes in the procedure—some involving expansion of the site's restricted-use pesticide list to include three pesticides formerly on the unrestricted list, but most editorial in nature—were completed during 2007.

The Environmental Services Section (ESS) began a self-assessment in 2007 that emphasized the need for increased awareness of site spill prevention and control protocol—particularly with respect to pesticide applications. Site pesticide application personnel subsequently were notified of the importance of

following the guidance established in applicable Environmental Compliance Manual procedures when they are preparing and applying pesticides at SRS.

Clean Air Act

Regulation and Delegation

The Clean Air Act (CAA) and the Clean Air Act Amendments (CAAA) of 1990 provide the basis for protecting and maintaining air quality. Though EPA still maintains overall authority for the control of air pollution, regulatory authority for all types of emission sources has been delegated to SCDHEC. Therefore, SCDHEC must ensure that its air pollution regulations are at least as stringent as the federal requirements. This is accomplished through SCDHEC Regulation 61–62, "Air Pollution Control Regulations and Standards." The various CAAA Titles covered by these SCDHEC regulations are discussed below.

Title V Operating Permit Program

Under the CAA, and as defined in federal regulations, SRS is classified as a "major source" and, as such, falls under the CAAA Part 70 Operating Permit Program. On February 19, 2003, SCDHEC's Bureau of Air Quality issued SRS its Part 70 Air Quality Permit (TV–0080–0041), with an effective date of April 1, 2003, and an expiration date of March 31, 2008. SRS submitted a permit application renewal September 18, 2007, as required by SC R61–62.70. A new Part 70 permit is expected to be issued to the site during 2008.

The Part 70 Air Quality Permit regulates both radioactive and nonradioactive toxic and criteria pollutant emissions from approximately 25 nonexempt emission units, with each emission unit having specific emission limits, operating conditions, and monitoring and reporting requirements. The permit also contains a listing, known as the Insignificant-Activities List, identifying approximately 1,100 SRS sources that are exempt based on insignificant emission levels, or on equipment size or type. Two air construction permit applications were submitted to SCDHEC in 2006 in conjunction with SRS plans to (1) install and operate a biomass boiler and an oil-fired boiler to provide steam to A-Area and (2) simultaneously discontinue operation of the two aging A-Area coal-fired boilers. SRS received the permits in April 2007, and construction began on the biomass and oil-fired boilers in October; completion of the work is expected by September 2008.

In 2006, SRS personnel assumed responsibility for operation and management of the D-Area Powerhouse (Permit TV–0080–0044) from Primesouth, a South Carolina Electric & Gas subsidiary. This operational change coincided with submittal of the Title V Permit renewal application process. The renewed Title V permit was issued to DOE–SR/WSRC May 15, 2007, with an effective date of July 1, 2007. The renewed Title V permit amended the particulate matter source testing requirement from annual to biannual because WSRC is not a public utility engaged in the generation, transmission, and sale of electricity. In 2007, DOE–SR initiated a proposal to replace the existing D-Area Powerhouse boilers with two new biomass cogeneration boilers more closely aligned with current and future steam demands. This proposed action would allow for decommissioning of the existing D-Area Powerhouse by 2011.

SCDHEC issued three revisions to the SRS Part 70 Air Quality Permit (TV–0080–0041) in 2007 that incorporated several minor modifications and one administrative change. No revisions were issued by SCDHEC to the 484–D Powerhouse Part 70 Air Quality Permit (TV–0080–0044).

Compliance with the SRS Part 70 Air Quality Permit conditions was last evaluated by SCDHEC during 2006 as part of the Annual Air Compliance Inspection. No air compliance inspections were conducted by SCDHEC during 2007.

National Emission Standards for Hazardous Air Pollutants

The National Emission Standards for Hazardous Air Pollutants (NESHAP) is a CAA-implementing regulation that sets air quality standards for air emissions containing hazardous air pollutants, such as radionuclides, benzene, and asbestos.

NESHAP Radionuclide Program The current list of 189 air pollutants includes all radionuclides as a single item. Regulation of these pollutants has been delegated to SCDHEC; however, EPA Region 4 continues to regulate some aspects of NESHAP radionuclides.

NESHAP Radionuclide Program Subpart H of 40 CFR 61 was issued December 15, 1989, after which an evaluation of all air emission sources was performed to determine compliance status. DOE–SR and EPA Region 4 signed a Federal Facility Compliance Agreement (FFCA) October 31, 1991, providing a schedule to bring SRS's emissions monitoring into

compliance with regulatory requirements. The FFCA was officially closed—and the site declared compliant—by EPA Region 4 May 10, 1995. Subpart H was revised by EPA September 9, 2002, with an effective date of January 1, 2003. This revision added inspection requirements for existing SRS sources and allowed the use of ANSI N13.1–1999 for establishing monitoring requirements. SRS is performing all required inspections, has monitoring systems compliant with the regulation, and remains in compliance with Subpart H of 40 CFR 61.

During 2007, the maximally exposed individual effective dose equivalent, calculated using the NESHAP-required CAP88 computer code, was estimated to be 0.04 mrem (0.0004 mSv), which is 0.4 percent of the 10 mrem per year (0.10 mSv per year) EPA standard (chapter 6, "Potential Radiation Doses").

NESHAP Nonradionuclide Program SRS uses many chemicals identified as toxic or hazardous air pollutants, but most of them are not regulated under the CAA or under federal NESHAP regulations. Except for asbestos, SRS facilities and operations do not fall into any of the "categories" listed in the original subparts. Under Title III of the federal Clean Air Act Amendments (CAAA) of 1990, EPA in December 1993 issued a final list of hazardous air pollutant-emitting source categories potentially subject to maximum achievable control technology (MACT) standards.

On September 13, 2004, EPA finalized a MACT rule that applies to the coal-fired steam boilers at the 784–A and 484–D powerhouse facilities. The rule, "National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters" (Boiler MACT), had a compliance date of September 13, 2007, and required facilities to meet more stringent emissions limits dealing with particulate matter (PM), mercury (Hg), and hydrogen chloride (HCl) emissions. During 2006, 484–D Powerhouse Facility personnel prepared to conduct the necessary testing during the 2007–2008 timeframe to demonstrate compliance with the new emission limits without the significant expenditure of capital funds. In June 2006, a MACT extension request was submitted to SCDHEC's Bureau of Air Quality requesting a one-year extension from the September 2007 compliance date so SRS could replace the aging A-Area boilers with a smaller wood-fired boiler and an oil-fired boiler capable of meeting the lower MACT emission limits. That compliance extension request was approved by SCDHEC September 5, 2006. Then, on July 30, 2007, the U.S. Court of Appeals for the District of Columbia vacated the Boiler MACT, thereby leaving it up to each state to enforce the rule. The State of South Carolina—one of the few states that elected to proceed with implementation of the rule—decided to give all the facilities in the state a one-year extension to comply. That extension moved the compliance date to September 12, 2008.

NESHAP Asbestos Abatement Program SRS began its asbestos abatement program in 1988 and continues to manage asbestos-containing material by "best management practices." Site compliance in asbestos abatement, as well as demolitions, falls under South Carolina and federal regulations, including SCDHEC Regulation R.61–86.1 ("Standards of Performance for Asbestos Projects") and 40 CFR 61, Subpart M ("National Emission Standards for Hazardous Air Pollutants – Asbestos").

During 2007, SRS personnel removed and disposed of an estimated 443 square feet and 1,359 linear feet of regulated asbestos-containing material. SRS personnel also removed 53,180 square feet and 1,825 linear feet of nonregulated asbestos-containing material.

Radiological asbestos waste was disposed of at the SRS E-Area low-level vaults, engineered trench, and slit trench, which are permitted by SCDHEC as asbestos waste disposal sites. Nonradiological asbestos waste was disposed of at the Three Rivers Solid Waste Authority Landfill and the construction and demolition debris (C&D) Landfill (Building 632–G), which also are SCDHEC-approved asbestos waste landfills.

Accidental Release Prevention Program

Under Title III of the CAAA, EPA established a program for the prevention of accidental releases of large quantities of hazardous chemicals. As outlined in Section 112(r), any facility that maintains specific hazardous or extremely hazardous chemicals in quantities above specified thresholds must develop a risk management program (RMP). The RMP establishes methods that will be used for the containment and mitigation of large chemical spills. No such accidental releases occurred at SRS during 2007.

SRS maintains hazardous and extremely hazardous chemical inventories below the threshold quantity. This cost-effective approach minimizes the regulatory burden of 112 (r) but does not eliminate any liability associated with the general duty clause, as stated in

112(r)(1). There were no reportable 112(r)-related hazardous or extremely hazardous chemical releases by SRS.

EPA issued a revision to its RMP final rule in 2004, changing reporting requirements of its chemical accident prevention regulations. Chemical facilities subject to these regulations now are required to submit significant-chemical-accident information and emergency contact information. These changes seek to improve and assist federal, state, and local risk management programs in implementing the new homeland security measures.

Ozone-Depleting Substances

Title VI of the CAAA of 1990 addresses stratospheric ozone protection. This law requires that EPA establish regulations to phase out the production and consumption of ozone-depleting substances (ODSs).

Several sections of Title VI of the CAAA of 1990, along with recently established EPA regulations found in 40 CFR 82, apply to the site. The ODSs are regulated in three general categories, as follows:

- *Class I substances* – chlorofluorocarbons (CFCs), Halons, carbon tetrachloride, methyl chloroform, methyl bromide, and hydrobromofluorocarbons (HBFCs)
- *Class II substances* – hydrochlorofluorocarbons (HCFCs)
- *Substitute substances*

The "Savannah River Site Refrigerant Management Plan," completed and issued in September 1994, provides guidance to assist SRS and DOE in the phaseout of CFC refrigerants and equipment. SRS has reduced CFC refrigerant usage in large ODS emission sources more than 99 percent compared to 1993 baseline data used in the September 1994 Plan.

The SRS CAAA of 1990 Title V operating air permit application includes ODS emission sources. All large (greater than or equal to 50-pound charge) heating, ventilation, and air conditioning/chiller systems for which there are recordkeeping requirements are included as fugitive emission sources.

SRS is phasing out its use of Halon as part of a goal to eliminate the use of Class I ODSs by 2010 "to the extent economically practicable." A Halon 1301 management plan (F–ESR–G–00120, November 16, 2005) and schedule have been developed by Fire Protection Services to help meet DOE's goal. The plan includes an SRS Halon 1301 fire suppression system inventory that identifies systems in operation, systems abandoned in place, and systems that have been dismantled and taken to the DOE complex's Halon repository, located at SRS.

Halon 1301 total inventory on site decreased from 71,290 pounds in 2006 to 71,130 pounds in 2007. The site had an inventory of 51,723 pounds of stored Halon 1301 at the end of 2007. In addition, 19,407 pounds were contained in the 85 operating systems at the end of 2007 (down from 111 systems in 2002).

Air Emissions Inventory

SCDHEC Regulation 61–62.1, Section III ("Emissions Inventory"), requires compilation of an air emissions inventory to locate all sources of air pollution and to define and characterize the various types and amounts of pollutants. To demonstrate compliance, SRS personnel in 1993 conducted the initial comprehensive air emissions inventory, which identified approximately 5,300 radiological and nonradiological air emission sources. Source operating data and calculated emissions from 1990 were used initially to establish the SRS baseline emissions and to provide data for air dispersion modeling. In 2006, a rerun of the air dispersion modeling accompanied the site's Title V permit renewal application. This modeling was required to demonstrate sitewide compliance with Regulation 61–62.5, Standards No. 2 ("Ambient Air Quality Standards") and No. 8 ("Toxic Air Pollutants").

Regulation 61–62.1, Section III, which was revised in August 2005, requires that air emissions inventory data be updated and recorded annually but reported to SCDHEC on a specific reporting frequency (formerly every even year)—either an annual cycle for "Type A" sources or a 3-year cycle for "Type B" and "Nonattainment Area" sources—based on "minimum reporting thresholds." The thresholds depend on the actual tons per year of specific criteria pollutants.

SRS, under Title V Permit TV–0080–0041, is classified as a Type B source, required to report only every third year, thus reducing the cost burden associated with annual emissions inventories for sources with moderate emission rates. However, the acquired D-Area Powerhouse (co-located at SRS), under Title V Permit TV–0080–0044, is a Type A source that must report actual emissions annually. The D-Area Powerhouse is required to compile and report

its CY 2007 emissions by to SCDHEC by March 31, 2008.

Because data collection for all SRS sources begins in January and requires up to 6 months to complete, this (2007) site environmental report provides emissions data for CY 2006. During 2007, the site collected CY 2006 operating data for permitted and other significant sources in accordance with SRS procedures and guidelines. These data were used to generate the site's Title V Permit renewal application. Compilation of 2007 data will be completed in 2008 and documented in the *SRS Environmental Report for 2008*.

Toxic Substances Control Act

The Toxic Substances Control Act (TSCA) gives EPA comprehensive authority to identify and control chemical substances manufactured, imported, processed, used, or distributed in commerce in the United States. Reporting and record keeping are mandated for new chemicals and for any chemical that may present a substantial risk of injury to human health or the environment.

Polychlorinated biphenyls (PCBs) have been used in various SRS processes. The use, storage, and disposal of these organic chemicals are specifically regulated under 40 CFR 761, which is administered by EPA. SRS has a well-structured PCB program that complies with this TSCA regulation, with DOE orders, and with WSRC policies.

The site's 2006 PCB document log was completed in full compliance with 40 CFR 761, and the 2006 annual report of onsite PCB disposal activities was submitted to EPA Region 4 in July 2007. The disposal of nonradioactive PCBs routinely generated at SRS is conducted at EPA-approved facilities within the regulatory period. For some forms of radioactive PCB wastes, disposal capacity is not yet available, and the wastes must remain in long-term storage. Such wastes are held in TSCA-compliant storage facilities in accordance with 40 CFR 761.

Endangered Species Act

The Endangered Species Act of 1973, as amended, provides for the designation and protection of wildlife, fish, and plants in danger of becoming extinct. The act also protects and conserves the critical habitats on which such species depend.

Several threatened and endangered species exist at SRS, including the wood stork, the red-cockaded woodpecker, the shortnose sturgeon, the pondberry, and the smooth purple coneflower. Although the bald eagle is no longer on the endangered species list, it is still protected under the Bald and Golden Eagle Protection Act. Programs are in place to enhance the habitat and survival of such species.

The biological evaluation for the Advanced Tactical Training Area was reviewed in 2007 to consider a proposed modification to the range. Also, one biological evaluation was conducted during the year for forestry-related activities. None of these activities were found to have had any significant potential impact on threatened and endangered species.

National Historic Preservation Act

The National Historic Preservation Act (NHPA) of 1966, Section 106, governs archaeological and historical resources. SRS ensures that it is in compliance with the NHPA through several processes. The Cold War Programmatic Agreement and the SRS Cold War Built Environment Cultural Resource Management Plan are in place and being implemented. The site's artifact selection team—which includes DOE, WSRC, and the University of South Carolina Savannah River Archaeological Research Program (SRARP)—meets monthly and is responsible for overseeing the selection, collection, and curation of Cold War-era artifacts from buildings prior to decommissioning and demolition activities.

SRS also helps ensure that it remains in compliance with NHPA through its Site Use Program. All locations being considered for activities such as construction are evaluated by SRARP personnel to ensure that archaeological or historic sites are not impacted. Reviews of timber compartment prescriptions include surveying for archaeological resources and documenting areas of importance with regard to historic and prehistoric significance.

SRARP personnel reviewed 40 site-use packages during FY 2007, of which 18 proposed land modifications resulted in the need to survey 53 acres (10.7 percent) of the total survey coverage for FY07. The remaining site-use packages were found to have no activities of significant impact in terms of the NHPA. SRARP personnel also surveyed 441.5 acres (89.3 percent) of the total survey area coverage in 2007 in support of onsite forestry activities.

Thirty-one surveys were conducted totaling 494.5 acres and consisting of 18 Site Use Application Surveys and 13 Timber Compartment Prescription

Surveys. These investigations identified 18 new archaeological sites—and resulted in revisits to seven previously recorded sites for cultural resources management within the 494.5 acres.

In compliance with NHPA, artifacts recovered through daily compliance activities and the analysis of artifacts recovered during Phase III investigations of site 38AK155 (located within the MOX facility footprint) must be curated. A total of 29,679 artifacts were curated during FY 2007 by SRARP.

Floodplains and Wetlands

Under 10 CFR, Part 1022 ("Compliance with Floodplains and Wetlands Environmental Review Requirements"), DOE establishes policies and procedures for implementing its responsibilities in terms of compliance with Executive Orders 11988 ("Floodplain Management") and 11990 ("Protection of Wetlands"). Part 1022 includes DOE policies regarding the consideration of floodplains/wetlands factors in planning and decision making. It also includes DOE procedures for identifying proposed actions involving floodplains/wetlands, providing early public reviews of such proposed actions, preparing floodplains/wetlands assessments, and issuing statements of findings for actions in floodplains. No floodplain/wetland assessments were performed in 2007.

Executive Order 11988

Executive Order 11988 ("Floodplain Management") was established to avoid long- and short-term impacts associated with the occupancy and modification of floodplains. The evaluation of impacts to SRS floodplains is ensured through the NEPA Evaluation Checklist and the site-use system. Site-use applications are reviewed for potential impacts by WSRC, DOE–SR, the USDA Forest Service–Savannah River and the Savannah River Ecology Laboratory (SREL), as well as by professionals from other organizations.

Executive Order 11990

Executive Order 11990 ("Protection of Wetlands") was established to mitigate adverse impacts to wetlands caused by the destruction and modification of wetlands, and to avoid new construction in wetlands wherever possible. Avoidance of impact to SRS wetlands is ensured through the site-use process, various departmental procedures and checklists, and project reviews by the SRS Wetlands Task Group. Many groups and individuals—including scientists from SRNL, SREL, and ESS—review site-use applications to ensure that proposed projects do not impact wetlands.

Environmental Release Response and Reporting

Response to Unplanned Releases

Environmental Permitting and Monitoring (EPM) personnel respond to unplanned environmental releases, both radiological and nonradiological, upon request by area operations personnel. No unplanned environmental releases occurred at SRS in 2007 that required the sampling and analytical services of EPM.

Occurrences Reported to Regulatory Agencies

Federally permitted releases comply with legally enforceable licenses, permits, regulations, or orders. If a nonpermitted release to the environment of a reportable quantity or more of a hazardous substance (including radionuclides) occurs, CERCLA requires notification of the National Response Center. Also, the CWA requires that the National Response Center be notified if an oil spill causes a "sheen" on navigable waters, such as rivers, lakes, or streams. Oil spill reporting has been reinforced with liability provisions in the CERCLA National Contingency Plan. SRS has had no CERCLA-reportable releases since 1999.

No notifications required by CERCLA or SCDHEC Memoranda of Understanding had to be made by SRS during 2007. The site recorded and cleaned up the following spills that did not require reporting under CERCLA or to SCDHEC: six chemical, four radioactive wastewater, six sewage, and 32 petroleum.

EPCRA (40 CFR 355.40) requires that reportable releases of extremely hazardous substances or CERCLA hazardous substances be reported to any local emergency planning committees and state emergency response commissions likely to be affected by the release. No EPCRA-reportable releases occurred at SRS in 2007.

Site Item Reportability and Issues Management Program

The Site Item Reportability and Issues Management (SIRIM) program, mandated by DOE Order 232.1A

("Occurrence Reporting and Processing of Operations Information"), is designed to ". . . establish a system for reporting of operations information related to DOE-owned or -operated facilities and processing of that information to provide for appropriate corrective action . . . ." It is the intent of the order that DOE be ". . . kept fully and currently informed of all events which could (1) affect the health and safety of the public; (2) seriously impact the intended purpose of DOE facilities; (3) have a noticeable adverse effect on the environment; or (4) endanger the health and safety of workers."

Of the 137 SIRIM-reportable events in 2007, only one was categorized as environmental:

- *Opacity Exceedance at the 484–D Powerhouse* – The D-Area #3 Boiler's high pressure turbine failed June 30, causing a steam load swing that in turn caused boiler tube failures to occur and compound the upset condition. The #3 Boiler exceeded the 40-percent opacity permit limit of greater than one hour (actual exceedance lasted 114 minutes).

Assessments/Inspections

The SRS environmental program is overseen by a number of organizations, both outside and within the DOE complex. In 2007, the WSRC environmental appraisal program consisted of self and independent assessments. The program ensures the recognition of noteworthy practices, the identification of performance deficiencies, and the initiation and tracking of associated corrective actions until they are satisfactorily completed. The primary objectives of the WSRC assessment program are to ensure compliance with regulatory requirements and to foster continuous improvement. The program—an integral part of the site's Safety Management System—supports the SRS EMS, which continues to meet the standards of International Organization for Standardization (ISO) 14001. (ISO 14000 is a family of voluntary environmental management standards and guidelines.)

WSRC conducted several environmental program-level assessments in 2007. The titles of the self-assessments (SAs), the media (in parentheses), and brief summaries of the results are as follows:

- *Environmental Compliance Commitment Tracking System (Environmental Management)* – This SA of the SRS Environmental Compliance Commitment Tracking System (ECCTS) database documented activities performed March 5 through November 15, 2007. It evaluated the adequacy and effectiveness of the ECCTS database and the administrative management of assigned commitments, including a programmatic review of the conversion from the ECCTS database to the centralized Site Tracking, Analysis and Reporting (STAR) System. The SA yielded three opportunities for improvement, including consolidation of SRS environmental commitments into the single site database; modification of the process for declaring closure of open environmental commitments; and designation of appropriate authorities for ownership and management of environmental commitments. All corrective actions have been completed.
- *Risk Assessment (Inactive Waste Sites and Releases)* – The Baseline Risk Assessment (BRA) documents comply with the regulatory requirements of 40 CFR 300, "National Oil and Hazardous Substances Pollution Contingency Plan" (and in particular Section 430), and the protocols established by the risk assessment design team. The entire risk assessment process is standardized, with even the tabular formats for data presentation specified. The SGCP staff was knowledgeable and able to discuss and resolve issues in a timely manner with EPA, SCDHEC, and subcontractor personnel. Development of a strong working relationship with the DOE customer and regulatory counterparts was demonstrated. No findings were identified.
- *Environmental Radiological Surveillance (Environmental Radiation Protection)* – Conducted during the fall of 2007, this SA focused on the Measuring and Test Equipment (M&TE) program. It identified the following concerns and/or areas requiring improvement: lack of internal dedicated QA function, need for an M&TE file, and procedures. Several corrective actions have been initiated, including improvements in procedure and administrative systems.
- *Site Treatment Plan (Waste Management)* – The Site Treatment Plan (STP) SA, performed in May/ June 2007, focused primarily on 1) ensuring that the proposed streamlining of the STP remained compliant with regulatory requirements while eliminating nonvalue-adding aspects of previous iterations, and 2) evaluating the Mixed Waste Inventory Report to determine accuracy, reliability, timeliness, and adequacy with respect to regulatory requirements. No findings resulted, but improvement opportunities were identified

and documented, and related corrective actions were completed.

- *Facility Operations and Maintenance (Surface Water Quality)* – Conducted in October 2007, this SA evaluated SRS wastewater treatment facilities for compliance with operations and maintenance (O&M) requirements found within the site's NPDES permit. Personnel from wastewater treatment plants representing a cross-section of SRS (M–1 Air Stripper, A–01 Treatment Wetlands, and 980–S Neutralization Facility) were interviewed. No findings were identified from this assessment; however, three observations were noted regarding (1) the completeness of O&M manuals and (2) employee knowledge of site-level procedures. Corrective actions for the observations were identified, initiated, and completed.

- *Categorical Exclusion of EA/EIS Preparation (National Environmental Policy Act)* – This SA was performed in November 2007 to determine the extent of NEPA process integration into selected elements of the SRS EMS. It identified one finding and four improvement opportunities in the areas of (1) monitoring and measurement; (2) resources, roles, responsibility, and authority; and (3) operational controls. Neither the finding nor the improvement opportunities are regulation driven. Corrective actions have been identified and are being implemented.

- *General Industrial Activity Stormwater Permit and Compliance Agreement (Surface Water Quality)* – The "Comprehensive Compliance Evaluation and Self Assessment for NPDES Industrial Stormwater Program" was performed during June/July 2007 and encompassed site facilities with stormwater discharges. The evaluation indicated that nine stormwater outfalls not previously listed in the site pollution prevention plan met the qualifications for inclusion under the SCDHEC general permit for stormwater discharges associated with industrial activities. The site pollution prevention plan was revised to include these outfalls. Other minor issues were identified regarding outfall drainage maps, outfall locations, and outfall posting. All issues were documented, tracked, and corrected.

- *National Emission Standards for Hazardous Air Pollutants (NESHAP) – Radionuclides and Nonradionuclides (Air Quality Protection)* – An SA of the sample scheduling and chain-of-custody elements of the Radionuclide NESHAP program was conducted during November/December 2007. The only issue identified—missing signatures on chain-of-custody forms—was resolved by revising the forms and providing additional training to employees using and responsible for the forms.

- *Spill Prevention Management (Toxic and Chemical Materials)* – Performed in October 2007, this SA of the spill prevention management program of toxic and chemical materials focused specifically on PCBs and fungicide, insecticide, and pesticide materials. One finding (noncompliance by a tenant organization with aspects of the site pesticide control program) and two observations (lack of awareness of and compliance with elements of the site pesticide control program) were identified. Issues were documented, tracked, and closed.

During 2007, DOE–SR Environmental Quality Management Division personnel continued to perform direct oversight and evaluation of WSRC's self-assessment program. Completed DOE assessments have met with positive results; routine assessments have promoted improvement and helped ensure the adequacy of environmental programs and operations at SRS.

SCDHEC and EPA personnel conducted external inspections of the SRS environmental program for regulatory compliance. Agency representatives performed several comprehensive compliance inspections in 2007, as follows:

- *RCRA Compliance Evaluation Inspection* – The RCRA compliance evaluation inspection was conducted by SCDHEC July 23–27. An October 3 letter from SCDHEC noted, "No deficiencies were cited during this inspection. You are to be commended for your excellent hazardous waste management program."
- *Annual Underground Storage Tank Inspection* – SCDHEC inspected the site's underground storage tanks July 23. All were found to be in compliance with applicable regulations. WSRC subsequently received a certificate of environmental excellence from SCDHEC in the nonretail operations category. No issues or findings have been generated by this inspection during the past 5 years.
- *632–G C&D Landfill, 288–F Industrial Waste Landfill, and Z-Area Saltstone Industrial Waste Landfill Inspections* – SCDHEC conducted

Table 3–4
SRS Construction and Operating Permits, 2003–2007

Type of Permit	Number of Permits				
	2003	2004	2005	2006	2007
Air	2[a]	3	1	2	4
Army Corps of Engineers Nationwide Permit	5	3	4	5	5
Domestic Water	202	203	207	207	207
Industrial Wastewater	60	56	63	70	70
NPDES Discharge	1	1	1	2	2
NPDES No Discharge	1	1	1	1	1
NPDES Stormwater	2	2	2	2	2
RCRA	1	1	1	1	1
Sanitary Wastewater	109	104	106	106	106
SCDHEC 401	0	0	0	0	1
SCDHEC Navigable Waters	0	0	0	0	1
Solid Waste	3	4	4	3	4
Underground Injection Control	19	18	21	14	14
Totals	405	396	411	413	417

[a] This number was revised to include the Title V Operating Permit, which includes all SRS air emission sources and one construction permit. Totals for 2003–2006 have been revised to correct errors in previous reports.

quarterly inspections of the 632–G C&D and 288–F Industrial Waste landfills; the facilities were found to be satisfactory, with no observed deficiencies. The Saltstone landfill inspection was changed to weekly in 2007. Wet spots were observed on the walls of Vault 4 of this facility and were reported to SCDHEC in accordance with the facility's contingency plan. (NOTE: "Wet spots" are areas on the external walls of the Saltstone Disposal Facility cells that appear damp due to a combination of saltstone shrinkage from curing, bleed and process water accumulation at the inner cell walls, and hydrostatic pressure causing this water to weep through preexisting construction cracks. "Wet spots" are not areas of free-flowing liquid.)

- *Interim Sanitary Landfill* – SCDHEC personnel conducted an annual post-closure inspection, and the site was found to be satisfactory, with no observed deficiencies.
- *Groundwater Comprehensive Monitoring Evaluation* – SCDHEC conducted an unannounced RCRA inspection of SRS's groundwater program. No deficiencies or permit violations were cited.
- *488–4D, Ash Landfill* – An industrial solid waste landfill permit was issued November 9 for the disposal of D-Area Powerhouse ash at the 488–4D Ash Landfill. (NOTE: Initial compliance inspection is scheduled for March 2008.)
- *Quarterly Inspections of SRS Bottled Water Facility* – SCDHEC's Division of Food Protection conducted quarterly inspections of the SRS Bottled Water Facility, which was found to be in compliance. Results from routine bacteriological analyses and annual complete chemical analyses met SCDHEC and FDA water quality standards.

Environmental Training

The site's environmental training program identifies training activities to teach job-specific skills that protect the employee and the environment, in addition to satisfying regulatory training requirements. Regularly scheduled classes in this program at SRS include such topics as Environmental Laws and Regulations, Hazardous Waste Worker, Hazardous and Radiological Waste Characterization, and the Environmental Compliance Authority course. A self-taught Environmental Laws and Regulations course is available for technical personnel and is updated annually by ESS. More than 60 environmental program-related training courses are listed in the site training database, and individual organizations schedule and perform other facility-specific, environment-related training to ensure that operations and maintenance personnel, as well as environmental professionals, have the knowledge and skills to perform work safely and in a manner that protects the environment.

Environmental Permits

SRS had 417 construction and operating permits in 2007 that specified operating levels for each permitted source. Table 3–4 summarizes the permits held by the site during the past 5 years. These numbers reflect only permits obtained by WSRC for itself and for other SRS contractors that requested assistance in obtaining permits. These numbers include some permits that were voided or closed during the calendar year (2007).

Editor's note: The "Environmental Compliance" chapter is unique in that its number of contributing authors is far greater than the number for any other chapter in this report. Space/layout constraints prevent us from listing all of them and their organizations on the chapter's first page, so we list them here instead. Their contributions, along with those of the report's other authors, continue to play a critical role in helping us produce a quality document—and are very much appreciated.

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