Chapter 2

Environmental Compliance

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Contributing authors' names appear on page 19.

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 2–1.

This chapter also will provide information on Notices of Violation (NOV) issued by the U.S. Environmental Protection Agency (EPA) or the South Carolina Department of Health and Environmental Compliance (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 contents of environmental regulations, such as failing to obtain construction permits prior to construction of new air release sources.

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 deemed 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. SRS received no RCRA-related NOVs during 2003.

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 three mixed waste streams that are potential candidates for a treatability variance. Because of special problems associated with radioactive components, these variances have been completed and sent 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) consent order was obtained and implemented in 1995, as required by the FFCAct. A Statement of Mutual Understanding (SMU) for Cleanup Credits was executed in October 2003. The SMU allows SRS to earn credits for certain accelerated cleanup actions. Credits then can be applied to the STP commitments. SRS issued an annual update to the STP November 7, 2003, that identified changes in mixed waste treatment and inventory. STP updates will continue to be produced annually unless the consent order is modified.

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 2003 inspection/audit found all 19 tanks to be in compliance.

Table 2–1 Some Key Regulations With Which SRS Must Comply

Legislation	What It Requires/*SRS Compliance Status*
RCRA Resource Conservation and Recovery Act	The management of hazardous and nonhazardous wastes and of underground storage tanks containing hazardous substances and petroleum products – *In compliance*
FFCAct Federal Facility Compliance Act	The development by DOE of schedules for mixed waste treatment to avoid waiver of sovereign immunity and to meet LDR requirements – *In compliance*
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 – *In compliance*
CERCLA/Title III (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 – *In compliance*
NEPA National Environmental Policy Act (1969)	The evaluation of the potential environmental impact of federal activities and alternatives – *In compliance*
SDWA Safe Drinking Water Act (1974)	The protection of public drinking water systems **–** *In compliance*
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 – *In compliance*
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, – *In compliance*
TSCA Toxic Substances Control Act (1976)	The regulation of use and disposal of PCBs – *In compliance*

High-Level Radioactive Waste Tank Closure

The primary regulatory goal of SRS's waste tank closure process at the F-Area and H-Area high-level waste tank farms is to close the tank systems in a way that protects public health and the environment in accordance with South Carolina Regulation 61–82, "Proper Closeout of Wastewater Treatment Facilities."

Tanks 17F and 20F were closed in 1997. Waste heel removal has been completed for tanks 18F and 19F, and the residual material has been sampled and characterized. Both tanks also have been isolated and require only administrative safety basis controls. In 2003, the Federal Court for the District of Idaho ruled that DOE's process for determining that small quantities of residual waste could remain in high-level waste tanks was inconsistent with the Nuclear Waste Policy Act. DOE is pursuing judicial and legislative remedies, but until such a process is available, grouting and closure of tanks 18F and 19F cannot take place. The next action for these tanks is grouting and closure.

In addition to the work being completed on Tanks 18F and 19F, closure activities started for the 1F evaporator system. Current plans are to have waste removal and characterization of the 1F evaporator system completed in order to grout in sequence with tanks 18F and 19F. Upon completion, this would be the first high-level waste evaporator system to be closed in the DOE complex.

Waste Minimization Program

The SRS Waste Minimization Program is part of a broad, ongoing effort to prevent pollution and minimize waste on site. The program is designed to meet the requirements of RCRA, of DOE orders, and of applicable executive orders. At SRS, all operations are concerned with increasing pollution prevention awareness and successes. Pollution Prevention (P2) is integral to the SRS Environmental Management Policy, Environmental Management System (EMS), and Safety Management System (SMS). SRS embraces pollution prevention as a primary strategy to operate in a compliant, cost-effective manner that protects the environment and the safety and health of employees and the public. The P2 Program strives to (1) reduce employee exposure to toxic and radioactive materials and (2) mitigate environmental impacts of site operations. In the process, these activities help reduce the costs of operations. SRS's P2 Program establishes the environmental management preference of source reduction and recycling over treatment, storage, and disposal—and the preferred use of energy efficient and resource conservative practices and operations.

Each year, DOE recognizes its top achievers in the area of pollution prevention (P2) through the DOE National P2 Awards Program. SRS has done well historically in competing for this recognition. The SRS P2 Program continues to distinguish itself as a nationally recognized leader in 2003, with SRS teams winning four of the 14 DOE award categories—Bio-based Products, Education and Outreach, Waste/Pollution Avoidance, and Hazardous/Radioactive Recycling.

P2 Program Results

SRS completed 81 documented P2 initiatives in 2003, resulting in a total annualized solid waste avoidance of 4,337 m^3 and cost avoidance of $57 million. This represents a greater than 10:1 return on program investment over the life of the project, and exceeds the P2 Program target goal by 175 percent.

SRS also has active industrial and office waste recycling programs, having achieved a recycle rate of 41 percent (1,036 metric tons recycled) of office-type sanitary waste in 2003 and a 27-percent recycle rate (4,725 metric tons) of the total sanitary waste stream, including industrial waste.

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 IV, and SCDHEC entered into the Federal Facility Agreement (FFA), which became effective August 16, 1993.

SRS has 515 waste units in the Soil and Groundwater Closure Projects program. At the end of 2003, remediation was in progress, or had been completed, in 335 units and areas (300 complete and 35 in the remediation phase). Closure activities during 2003 included the following:

- Remedial Investigations (RIs) were initiated on the Fourmile Branch Integrator Operable Unit (IOU), Pen Branch IOU, and Upper Three Runs IOU.
- A RCRA Facility Investigation/Remedial Investigation (RFI/RI) was initiated on the M-Area settling basin inactive process sewers to manhole 1.
- Remedial actions were initiated at the A-Area miscellaneous rubble pile, Ford Building seepage basin, L-Area Reactor seepage basin, L-Area rubble pile, L-Area burning/rubble pit, L-Area gas cylinder disposal facility, three R-Area Bingham pump outage pits, and three R-Area unknowns.
- Remedial actions were completed and post-construction reports/final remediation reports were submitted for two A-Area burning/ rubble pits, A-Area rubble pit, Ford Building seepage basin, and L-Area Reactor seepage basin.
- An interim action post-construction report was submitted for the Old Radioactive Waste Burial Ground (solvent tanks).
- Removal actions were initiated for the C-Area ash pile off Powerline Road and C-Area ash pile.
- Records of Decision (RODs) were submitted to the regulators for their review and comments for the L-Area hot shop, sandblast area CML–003, six R-Area Reactor seepage basins, R-Area overflow basin, Road A chemical basin, TNX

Table 2–2 SRS Reporting Compliance with 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

burying ground, new TNX seepage basin, old TNX seepage basin, and TNX groundwater.

- RODs received project manager approval in preparation for submittal to EPA, SCDHEC, and DOE for agreement signatures for the A-Area miscellaneous rubble pile**,** two Central Shops burning/rubble pits**,** L-Area hot shop, sandblast area CML–003**,** three R-Area Bingham pump outage pits, three R-Area unknowns, Road A chemical basin**,** TNX burying ground, new TNX seepage basin, old TNX seepage basin, and TNX groundwater.

- Final agency agreements were obtained, and RODs were issued for the P-Area burning/rubble pit**,** General Separations Area consolidation unit**,** R-Area acid/caustic basin**,** L-Area rubble pile, L-Area burning/rubble pit, L-Area gas cylinder disposal facility**,** three R-Area Bingham pump outage pits, three R-Area unknowns**,** two Central Shops burning/rubble pits, and the A-Area miscellaneous rubble pile.

- ROD amendments were approved for seven chemical, metals, and pesticide pits.

- An explanation of significant difference was approved for three P-Area reactor seepage basins.

- Site evaluation reports were submitted for 16 site evaluation areas.

A listing of all waste units at SRS can be found in appendix C ("RCRA/CERCLA Units List") and appendix 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 Toxic Chemical Release Inventory report to include source reduction and recycling activities.

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 Chemical Release Inventory Report

Under Section 313 of EPCRA, SRS must file an annual Toxic Chemical 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 reports the release values to EPA on Form R of the report.

The Form R for 2003 identified 13 chemicals, with releases totaling 234,636 pounds. As in 2002, nitrate, chromium, and zinc compounds were the largest contributors to the total reportable releases in 2003.

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 2–2, and the site incorporates the toxic chemicals on the Toxic Release Inventory report into its pollution prevention efforts.

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. NEPA provides a means to evaluate the potential environmental impact of major federal activities that could significantly affect the quality of the environment and to examine alternatives to those actions.

In 2003, 250 reviews of newly proposed actions were conducted at SRS and formally documented. The types and numbers of NEPA activities conducted on site in 2003 are presented in table 2–3. Among the specific activities were the following:

- A Programmatic Environmental Assessment (PEA) (DOE/EA–1393) and a signed Finding of No Significant Impact (FONSI) were completed to analyze the potential environmental impacts of the implementation of a long-term comprehensive management program for potentially reusable low enriched uranium, natural uranium, and depleted uranium.
- A revised FONSI was issued for transportation of radioactive waste across SRS. The proposed action was transporting commercial shipments of low-level waste across SRS to the disposal facility in Barnwell, South Carolina, using the SRS rail and road systems. Specifically, the action dealt with allowing Southern California Edison to transport the decommissioned San Onofre reactor vessel to Barnwell.
- A revised FONSI was issued for the expansion and operation of the SRS Central Shops borrow pit. The proposed action involved the expansion and operation of part of the borrow pit to allow for the cost-effective disposal of inert construction and demolition debris that had been going to the Three Rivers Solid Waste Authority Regional Landfill.
- An amended Record of Decision (ROD) was issued for the Interim Management of Nuclear Materials Environmental Impact Statement (EIS). The proposed action was for DOE to dispose of certain material, including cobalt-60 and thulium-170, as waste, and to compare the materials and disposal technologies evaluated in the SRS Waste Management EIS (DOE/EIS–0217) and the Interim Management of Nuclear materials EIS (DOE/EIS–0220).
- An amended ROD was issued for changes needed to the surplus plutonium disposition program. A Supplement Analysis (DOE/EIS–0283–SA1) supporting the amended ROD evaluates the impacts of making plutonium feed from the Mixed Oxide Fabrication Facility from approximately 6.5 tons of plutonium material originally intended for immobilization.

Table 2–3 Types/Quantity of NEPA Activities at SRS during 2003

Type of NEPA Documentation	Number
Categorical Exclusion	227
Tiered to Previous NEPA Documentation	20
Environmental Assessment	3
Programmatic Environmental Assessment	1
Engineering Evaluation/Cost Analysis	2
Environmental Impact Statement	4
Supplemental Environmental Impact Statement	1
Programmatic Environmental Impact Statement	1
Total	259[a]

[a] Nine of the 259 NEPA activities were carryovers from 2002, leaving 250 newly proposed actions in 2003.

Safe Drinking Water Act

The federal Safe Drinking Water Act (SDWA) was enacted in 1974 to protect public drinking water supplies. SRS drinking water is supplied by 18 separate systems, all of which utilize groundwater sources. The A-Area, D-Area, and K-Area systems are actively regulated by SCDHEC, while the remaining 15 site water systems receive sporadic regulatory inspections.

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 2003 met these standards.

The B-Area Bottled Water Facility is listed as a public water system by SCDHEC. Results from quarterly bacteriological analyses and annual complete chemical analyses performed in 2003 met SCDHEC and FDA water quality standards. The bottled water facility is not subject to the lead and copper requirements.

SCDHEC conducted its survey of the A-Area, D-Area, and K-Area domestic water systems in March 2003. Survey results indicated a "satisfactory" rating.

SRS received no NOVs in 2003 under the SDWA.

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 three NPDES permits in 2003, as follows:

- One permit for industrial wastewater discharge (SC0000175)
- Two general permits for stormwater discharge (SCR000000 for industrial and SCR100000 for construction)

More information about the NPDES permits can be found in chapter 3, "Effluent Monitoring."

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

During October, SCDHEC conducted its annual 2-week audit of the SRS NPDES permitted outfalls. Overall, SRS received one noncompliance rating for this audit. The rating was issued primarily for problems involving flow measurements at one NPDES outfall. Additional information about this audit is contained in the "Assessments/Inspections" section of this chapter, beginning on page 16).

The outfalls covered by the industrial stormwater permit (SCR000000) were reevaluated in 2002. This resulted in the development of a new sampling plan, which was implemented in 2003.

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 2003.

SRS has an agreement with SCDHEC to report petroleum product discharges of 25 gallons or more to the environment. One such incident in this category occurred at the site during 2003. This involved a 40-gallon diesel fuel leak from a commercial truck fuel line traveling across the site on a state road (not associated with SRS operations), and it was reported appropriately. The diesel fuel was leaked onto the road surface and was cleaned up by site personnel without entering any watersheds or endangering the environment.

A consent order was signed December 15, 2003, between SRS and SCDHEC to prevent permit limit exceedances for mercury at the F–08 outfall. The revised NPDES permit required SRS to meet stringent mercury limits beginning in December 2003. This innovative, "up-front" consent order provided SRS 5 years for compliance with mercury limits, which is the same time provided in the NPDES permit to meet other metals limits. The consent order required implementation of a Mercury Minimization Plan, which has been submitted to SCDHEC and is awaiting approval.

Notices of Violation (NPDES)

SRS's 2003 compliance rate for the NPDES program under the CWA was 99.8 percent. One NOV was issued to the site during 2003 in association with the NPDES program.

SRS received an NOV from SCDHEC September 29 for permit exceedances for copper and lead at the F–08 NPDES outfall. The copper and lead levels were attributed to flush water from jet cleaning at a process water well within the facility. The site has discontinued well cleaning activities until an acceptable method can be evaluated to ensure that future cleaning activities do not result in a permit violation. No further action was required by SCDHEC.

Ten exceedances at NPDES outfalls occurred at SRS in 2003. A list of these—including outfall locations, probable causes, and corrective actions—can be found in chapter 3 (table 3–4). Seven of the exceedances were for chronic toxicity or acute toxicity at outfalls A–01, A–11 and G–10. Two toxicity exceedances at outfall A–11 were attributed to high amounts of suspended solids resulting from excessive rains just prior to sampling. Four exceedances, at outfalls A–01, A–11 and G–10, were the result of unhealthy breeding

stocks at the subcontract laboratory performing the analyses. The inability of the laboratory cultures to survive and multiply resulted in invalid tests. Dietary improvements were made to the breeding stock, eliminating the problem. The final toxicity exceedance occurred at the A–11 outfall. No cause for the failure has been determined and subsequent analyses of the discharge failed to identify the presence of a toxicant in the effluent. As previously noted, three metals exceedances occurred at the F–08 outfall, resulting in an NOV from SCDHEC.

Dredge and Fill; Rivers and Harbors

The CWA, Section 404, "Dredge and Fill Permitting," as amended, and the Rivers and Harbors Act, Section 9 and 10," Construction Over and Obstruction of Navigable Waters of the United States," protect U.S. waters from dredging and 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.

In 2003, SRS conducted activities under five Nationwide Permits (NWPs) as part of the NWP program (general permits under Section 404), but under no individual Section 404 permits. The activities were as follows:

- Dam construction on an unnamed tributary to Fourmile Branch for the Mixed Waste Management Facility Groundwater Interim Measures project was conducted under NWP–38, "Hazardous Waste Cleanup." Mitigation for the impact to wetlands must be addressed before the permit can be considered closed.
- The plugging of ditches and the removal of undesirable vegetation in 16 Carolina bays in the SRS Carolina Bay Restoration Project, permitted under NWP–27, "Wetland Restoration," was completed and closed in January.
- The TNX Water Pumphouse, 681–4T, on the Savannah River was removed and the bank stabilized under NWP–13, "Bank Stabilization." The project was completed and a permit closure notification was sent to the U.S. Army Corps of Engineers in October.
- The Pond B Dam Repair Project was permitted by letter from the U.S. Army Corps of Engineers in September 2003 under NWP–3, "Maintenance," so that the dam and the toe drain can be repaired. The work is scheduled to begin in 2004.
- The Mixed Waste Management Facility dam intake structure modification was applied for under NWP–38, "Hazardous Waste Cleanup." The modification will improve the efficiency of the treatment system for tritium. Approval of this request is anticipated in early 2004.

Construction in Navigable Waters

SCDHEC Regulation 19–450, "Permit for Construction in Navigable Waters," protects the state's navigable waters through the permitting of any dredging, filling, construction, or alteration activity in, on, or over state navigable waters, in or on the beds of state navigable waters, or in or on land or waters subject to a public navigational servitude. 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).

In 2003, SCDHEC issued an exemption letter for the removal and bank stabilization of the TNX Water Pumphouse, 681–4T.

Federal Insecticide, Fungicide, and Rodenticide Act

The Federal Insecticide, Fungicide, and Rodenticide Act restricts the application of restricted pesticides through a state-administered certification program. SRS complies with these requirements through procedural guidelines, and the site's pesticide procedure provides guidelines for pesticide use and requires that applicators of restricted-use pesticides be state certified.

Clean Air Act

Regulation, Delegation, and Permits

The Clean Air Act (CAA) provides the basis for protecting and maintaining air quality. Some types of SRS air emissions are regulated by EPA, but most are regulated by SCDHEC, which 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."

Under the CAA, and as defined in federal regulations, SRS is classified as a "major source" and, as such, has been issued one operating permit for all of its sources of air pollutants. On February 19, 2003, SCDHEC's Bureau of Air Quality issued SRS its Title V Operating Permit (TV–0080–0041, which had an effective date of April 1, 2003, and an expiration date of March 31, 2008. As issued, the Title V Operating Permit regulates both radioactive and nonradioactive toxic and criteria pollutant emissions from approximately 98 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, of 1,329 SRS sources that are exempt based on insignificant emission levels, or equipment size or type. SRS also holds one construction permit for a new facility that is under construction.

During 2003, 14 of the permitted nonexempt emission units were taken out of service and voided on the Title V Permit. Of the other 84 nonexempt emission units, two were placed on the Insignificant Activities List, and 78 operated in some capacity during 2003. The remaining six were being maintained in "cold standby" status.

During 2003, SCDHEC conducted compliance inspections or stack tests of 175 permitted significant and insignificant sources at SRS, reviewing 317 permitted parameters.

Notices of Violation (CAA)

As a result of a failed biennial stack emissions test, SRS was issued an NOV, resulting in an overall site CAA compliance rate of 99.7 for 2003. The NOV, received by the site in May, was the result of an exceedance of the particulate matter emission limit observed during a biennial compliance stack test conducted at the A-Area No. 1 Boiler in February. Following receipt of the preliminary test report, immediate actions were taken to correct the cause of the high particulate matter emission rate, and a follow-up stack test was conducted in April, demonstrating compliance with the permit limit.

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. 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 IV 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. The Savannah River Operations Office (DOE–SR) and EPA Region IV 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 IV 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 2003, the maximally exposed individual effective dose equivalent, calculated using the NESHAP-required CAP88 computer code, was estimated to be 0.05 mrem (0.0005 mSv), which is 0.5 percent of the 10 mrem per year (0.10 mSv per year) EPA standard (chapter 5, "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 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.

As a result of EPA failing to meet the original rule development schedule, another CAA requirement, known as the 112 (j) MACT Hammer Permit Application, became effective 2 years after the missed scheduled date. This required the submittal of a two-part permit application by facilities considered "major" for hazardous air pollutants. Part I of the application, submitted to SCDHEC May 14, 2002, identified the MACT source categories that might be applicable to SRS and the facilities that could be impacted.

Part II of the application, originally due November 15, 2002, would have required each facility to identify the methods or control strategies it would use to reduce applicable pollutant emission levels. However, because of a December 2002 settlement agreement it reached with an environmental watch group, EPA has proposed a new schedule for promulgating the final rules for the remaining MACT source categories. This extends the development date into August 2005, with additional MACT Hammer provisions to take place 60 days after that date. The rules with potential impact to

SRS facilities are to be promulgated by April 2004, with a compliance deadline 3 years later. In August 2003, EPA issued two of the MACT standards, "Site Remediation and Miscellaneous Metal Parts" and "Products Surface Coatings," which would potentially affect SRS facilities. As written, the Site Remediation MACT potentially would apply to the SRS soil vapor extraction and groundwater air stripper units; however, it includes an exemption for remediation units that are permitted under the RCRA and CERCLA corrective actions, which these SRS units are. With respect to the Miscellaneous Metal Parts and Products Surface Coatings MACT, it was anticipated originally that the SRS construction paint facility in N-Area would be subject to the requirements of this rule. However, because of the facility's limited use of surface coatings each year, SCDHEC has made an initial determination that the paint facility could qualify for the 250-gallon-per-year usage exemption.

In an attempt to regulate hazardous or toxic air pollutants in South Carolina, SCDHEC established Air Pollution Control Regulation 61–62.5, Standard No. 8, "Toxic Air Pollutants," in June 1991. To demonstrate compliance with this standard, SRS completed and submitted an air emissions inventory and air dispersion modeling data for all site sources in 1993. The submitted data demonstrated compliance by computer modeling the accumulated ambient concentration of individual toxic air pollutants at the boundary line and comparing them to the Standard No. 8 maximum allowable concentrations. To ensure continued compliance with Standard No. 8, new sources of toxic air pollutants must be permitted. This requires submittal of appropriate air permit applications and air dispersion modeling. Sources with emissions below a threshold of 1,000 pounds per month of any single toxic air pollutant may be exempted from permitting requirements. During 2003, 13 sources of toxic air pollutants either were issued a construction permit or exempted from permitting requirements.

NESHAP Asbestos Abatement Program

SRS began an 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 Asbestos").

During 2003, SRS personnel removed and disposed of an estimated 306 square feet and 1,571 linear feet of regulated asbestos-containing material.

Radiological asbestos waste was disposed of at the SRS low-level burial ground, which is permitted by SCDHEC as an asbestos waste disposal site. Nonradiological asbestos waste was disposed of at the Three Rivers Landfill, located on site, which also is an SCDHEC-approved asbestos waste landfill.

Other CAA Requirements

Only a few of the major sections of the CAA and its 1990 amendments and regulations have had, or are expected to have, a significant impact on SRS sources and facilities. These include Title V ("Permits") and Title VI ("Stratospheric Ozone Protection)." The other regulations affecting SRS facilities are implemented primarily in SCDHEC Regulation 61–62 and in existing operating or construction permits.

Title V Operating Permit Program As previously indicated**,** the CAAA of 1990 also include, under Title V, a major new permitting section expected to have a significant impact on the site through increased reporting and recordkeeping requirements.

SRS and SCDHEC had been developing the Title V (Regulation 62.70, "Title V Operating Permit Program") operating air permit since 1996, with several drafts of the permit being sent out for public comments. SCDHEC addressed the comments it received, and the SRS Title V permit was issued in February 2003, with an effective date of April 1, 2003.

Ozone Depleting Substances Title VI of the CAAA of 1990 addresses stratospheric ozone protection. This law requires that EPA establish a number of 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. The site used 450 pounds of CFC refrigerants in 2001, then reduced that amount to 180 pounds in 2002 and 50 pounds in 2003.

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 a result of the DOE 1999 Pollution Prevention and Energy Efficient Leadership Goal to eliminate use of Class I ODSs by 2010 "to the extent economically practicable." A Halon 1301 alternative study was completed by the site's fire protection and systems engineering groups in 2000 to (1) recommend alternative fire suppression agents to replace Halon 1301 and (2) provide a method for assigning modification priorities to site fire protection systems that use Halon 1301.

Additionally, a Halon 1301 phaseout plan and schedule have been developed by Fire Protection Engineering 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 102,285 pounds in 2002 to 75,577 pounds in 2003. At the end of 2003, the site had an inventory of 51,737 pounds of stored Halon 1301, after having shipped approximately 15,000 pounds to the Defense Logistics Agency in Virginia. In addition, 22,040 pounds are contained in the 95 operating systems (down from 110 in 2002), and 1,800 pounds in the two systems that have been abandoned in place.

Air Emissions Inventory

SCDHEC Regulation 61–62.1, Section III ("Emissions Inventory"), requires compilation of an air emissions inventory for the purpose of locating all sources of air pollution and defining and characterizing the various types and amounts of pollutants. To demonstrate compliance, SRS personnel conducted the initial comprehensive air emissions inventory in 1993.

The inventory identified approximately 5,300 radiological and nonradiological air emission sources. Source operating data and calculated emissions from 1990 were used to establish the SRS baseline emissions and to provide data for air dispersion modeling. This modeling was required to demonstrate sitewide compliance with Regulation 61–62.5, Standard No. 2 ("Ambient Air Quality Standards"), and Standard No. 8.

Regulation 61–62.1, Section III, requires that inventory data be updated and recorded annually but reported only every even calendar year. The emissions inventory is updated each year in accordance with SRS procedures and guidelines. Calendar year 2002 operating data for permitted and other significant sources were collected but not reported to SCDHEC in 2003. Because data collection for all SRS sources begins in January and requires up to 6 months to complete, this report provides emissions data for calendar year 2002. Compilation of 2003 data will be completed and submitted to SCDHEC in 2004 and reported in the *SRS Environmental Report for 2004*.

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 2003 PCB document log was completed in full compliance with 40 CFR 761 and submitted to EPA Region 4. 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.

In 1993, PCBs were confirmed to be present as a component of dense nonaqueous phase liquids in samples from two groundwater monitoring wells around the M-Area Hazardous Waste Management Facility. Regulators were notified, and a modification to the RCRA Part B Permit Application to address the discovery of PCBs was submitted to SCDHEC. Soil and Groundwater Closure Projects and Savannah River Technology Center (SRTC) personnel continue

to study ways to remediate the dense nonaqueous phase liquids.

In 1996 and subsequent years, site personnel discovered PCBs in certain painted surfaces and in other solid forms within several facilities constructed prior to TSCA. As such discoveries were made, SRS worked with EPA on related TSCA compliance issues. Current TSCA regulations prohibit the use and distribution in commerce of these forms of PCBs above specified concentrations. In December 1999, however, EPA issued a proposed rule to authorize the continued use of these forms of PCBs. EPA still has not issued a final rule.

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. The site conducts research on the wood stork, the red-cockaded woodpecker, the bald eagle, the shortnose sturgeon, and the smooth purple coneflower. Programs designed to enhance the habitat of such species are in place.

No biological assessments and/or biological evaluations were prepared for NEPA documents for new projects at SRS in 2003. However, to ensure protection of threatened and endangered species, biological assessments and biological evaluations were conducted to evaluate potential impacts of forestry related activities. None of these activities was 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 the protection and preservation of archaeological and historical resources. SRS ensures that it is in compliance with the NHPA through several processes. During 2003, extensive efforts were made through interactions with the South Carolina State Historical Preservation Office to identify SRS historic properties and to develop the SRS Cold War Programmatic Agreement (PA). Memoranda of agreement were used to deal, on an interim basis, with buildings included as part of the accelerated cleanup effort in several site areas, pending completion of the PA. A draft PA and a draft of the SRS Cultural Resources Management Plan were provided in November to the organizations belonging to the consulting parties, which include responsible state and federal agencies as well as area stakeholders interested in SRS.

In addition, the site helps ensure that it remains in compliance with NHPA through its Site Use Program. All sites being considered for activities such as construction are evaluated by University of South Carolina Savannah River Archaeological Research Program (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 66 site-use packages and surveyed 405 acres during 2003. Most of the site-use packages were found to have no activities of significant impact in terms of the NHPA, but six of them resulted in surveys being conducted in 2003 because of the potential land for alteration. SRARP personnel also surveyed 1,530 acres in 2003 in support of onsite forestry activities. In addition, 304 acres of timber compartment clear-cuts were surveyed.

The surveys of the 2,239 total acres resulted in 84 site investigations of 63 new archaeological sites and in revisits to 21 previously recorded sites for cultural resources management.

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 or wetlands assessments were conducted in 2003.

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 individual—including scientists from SRTC, SREL, and the Environmental Services Section—review site-use applications to ensure that proposed projects do not impact wetlands.

Environmental Release Response and Reporting

Response to Unplanned Releases

Environmental Monitoring and Analysis (EMA) personnel respond to unplanned environmental releases, both radiological and nonradiological, upon request by area operations personnel. No unplanned environmental releases occurred at SRS in 2003 that required the sampling and analysis services of EMA.

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 was reinforced with liability provisions in the CERCLA National Contingency Plan.

SRS had no CERCLA-reportable releases in 2003. This performance compares with zero releases reported during 2000, 2001, and 2002; one release in 1999; and one in 1998.

Two notifications, not required by CERCLA, were made by the site to regulatory agencies during 2003. Both were the result of an agreement to notify SCDHEC about sewage and petroleum product releases.

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 in 2003.

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 233 SIRIM-reportable events in 2003, the following three events were categorized as environmental:

- Sanitary wastewater was found to be leaking from a manhole cover east of building 714–7N. The leak was estimated to be greater than 500 gallons and was determined to have been caused by movement and damage to the manhole concrete collar. The release was contained and remediated without the wastewater entering waters of the state.
- South Carolina Electric and Gas personnel were cutting trees along a site electrical transmission line right-of-way when a tree fell across an 8-inch main sanitary sewage pipe operated by the WSRC Solid Waste and Infrastructure Site Utilities Department. The pipe ruptured, resulting in a sewage spill that reached Fourmile Branch (waters of the state); the estimated volume of the resulting spill was 13,788 gallons. Actions were taken to minimize flow to the damaged pipe. Pumps upstream of the pipe were shut down and valves downstream of the break were closed. A vendor transferred sewage from the upstream pump station to minimize the release.
- The site reported the NOV received from SCDHEC for failure of the A-Area boiler to pass a compliance test. The failure was the result inadequate post-maintenance testing of multiclone dust collectors.

Assessments/Inspections

The SRS environmental program is overseen by a number of organizations, both outside and within the DOE complex. In 2003, 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 is an integral part of the site's Safety Management System and supports the SRS Environmental Management System, 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 nine environmental program-level assessments in 2003. The topics included

- Domestic Water Quality – Facility Operations and Maintenance
- Surface Water Quality – Operator and Laboratory Certification
- Environmental Radiation Protection – Environmental Radiological Surveillance
- Air Quality Protection – Facility Permits
- Toxic and Chemical Materials – Polychlorinated Biphenyls (PCBs)
- Toxic and Chemical Materials – Spill Prevention and Management
- Environmental Management Functions – Environmental Protection Program
- Environmental Management Functions – Program Evaluation, Corrective Action, and Continuous Improvement
- Groundwater Protection

During 2003, personnel from DOE–SR's Environmental Quality and Management Division 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 also performed external inspections of the SRS environmental program for regulatory compliance. Agency representatives performed several comprehensive compliance inspections in 2003, as follows:

- *RCRA Compliance Evaluation Inspection* – The annual compliance evaluation inspection is an unannounced audit by SCDHEC and/or EPA. SCDHEC conducted the 2003 inspection for compliance with solid and hazardous waste management regulations. No deficiencies were noted during the entire audit.
- *Annual Air Compliance Inspection* – SCDHEC conducted the annual air compliance inspection of operating SRS permitted sources. In general, the site was found to be in compliance with each source's respective permit condition and requirement.
- *Annual Underground Storage Tank Inspection* – SCDHEC inspected the site's 19 underground storage tanks. All were found to be in compliance with applicable regulations.
- *Annual NPDES 3560 Compliance Audit* – SCDHEC conducted the annual 3560 environmental audit of the site's NPDES-permitted outfalls. Overall, SRS received a rating of noncompliance from the regulators. The noncompliance rating stemmed from flow measurement discrepancies at one outfall, which resulted in that portion of the assessment being graded as unsatisfactory. Additionally, marginal ratings were received in the areas of operations and maintenance and stormwater. The issues raised in the inspection report have been addressed by site personnel, and corrective actions have been implemented.
- *Quarterly Inspections of SRS Bottled Water Facility* – SCDHEC conducted quarterly inspections of the SRS Bottled Water Facility. Overall, the results of these inspections were favorable.
- *SRS Domestic Water Laboratory Certification Audit* – SCDHEC conducted an evaluation of SRS's Domestic Water Laboratory for the purpose of renewing the 3-year certificate the laboratory holds to perform coliform analyses that are routinely reported to SCDHEC for compliance purposes. The certificate was reissued.
- *Burma Road C&D Landfill, Burma Road Structural Fill, 632–G C&D Landfill, and Saltstone Inspection* – SCDHEC conducted quarterly inspections, and all the sites were found to be satisfactory, with no observed deficiencies.
- *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.

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, Low-Level Waste Certification, Pollution Prevention and Waste Minimization, and the Environmental Compliance Authority course. More than 40 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.

Site Decommissioning and Demolition

Site D&D (decommissioning and demolition), formerly Facility Disposition Projects, assumed responsibility in 2003 for all decommissioning and demolition work at SRS. Personnel from Site D&D—also known as CH2SRC, a subsidiary of CH2M Hill—will continue to work toward reduction of the site "footprint." By the end of 2003, the organization had participated in the following accomplishments/activities:

- Fifty buildings had been demolished across the site.
- The 10th F-Area building was under demolition.
- Twenty-six of 28 buildings had been demolished in T-Area.
- The last "six-pack" building in M-Area was under demolition.
- Eleven buildings had been demolished in D-Area.
- Deactivation had begun in the site's main cafeteria building.
- Crews continued to deactivate Naval Fuels building areas ("zones") ahead of schedule.

Environmental Permits

SRS had 412 construction and operating permits in 2003 that specified operating levels for each permitted source. Table 2–4 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. It also should be noted that these numbers include some permits that were voided or closed some time during the calendar year (2003). The continued reduction in the number of environmental permits reflects site efforts to (1) close permits as facilities are deactivated or decommissioned and (2) consolidate and streamline facility permits to help improve operating and administrative efficiency.

Table 2–4 SRS Construction and Operating Permits, 1999–2003

Type of Permit	Number of Permits				
	1999	**2000**	**2001**	**2002**	**2003**
Air	200	199	172	150	2[b]
U.S. Army Corps of Engineers 404	0	0	0	0	0
Army Corps of Engineers Nationwide Permit	4	1	5	5	5
Domestic Water	203	203	203	203	202
Industrial Wastewater	86	77	70	66	60
NPDES Discharge	1	1	1	1	1
NPDES General Utility	1	1	0	0	0
NPDES No Discharge	1	1	1	1	1
NPDES Stormwater	2	2	2	2	2
RCRA	1	1	1	1	1
Sanitary Wastewater	141	133	133	133	109
SCDHEC 401	1	1	1	0	0
SCDHEC Navigable Waters	0	0	1	1	0
Solid Waste	5	5	4	2	3
Underground Injection Control	18	23	20	18	19
Underground Storage Tanks	20	7[a]	7	7	7
Totals	684	655	621	590	412

[a] This number was revised to reflect the actual number of permits that included requirements for 19 underground storage tanks.

[b] This number was revised to reflect the Title V Operating Permit, which includes all SRS air emission sources and one construction permit.

Editor's note: The "Environmental Compliance" chapter is unique in that the 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 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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