

# Applicable Guidelines, Standards, and Regulations

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**T**HE Savannah River Site (SRS) environmental monitoring program is designed to meet state and federal regulatory requirements for radiological and nonradiological programs. These requirements are stated in U.S. Department of Energy (DOE) Order 5400.1, “General Environmental Protection Program,” and DOE Order 5400.5, “Radiation Protection of the Public and the Environment”; in the Clean Air Act [Standards of Performance for New Stationary Sources, also referred to as New Source Performance Standards (NSPS), and the National Emission Standards for Hazardous Air Pollutants (NESHAP)]; in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA—also known as the Superfund); in the Resource Conservation and Recovery Act (RCRA); in the Clean Water Act (i.e., National Pollutant Discharge Elimination System—NPDES); and in the National Environmental Policy Act (NEPA). Compliance with environmental requirements is assessed by DOE–Savannah River (DOE–SR), the South Carolina Department of Health and Environmental Control (SCDHEC), and the U.S. Environmental Protection Agency (EPA).

The SRS environmental monitoring program’s objectives incorporate recommendations of

- the International Commission on Radiological Protection (ICRP) in *Principles of Monitoring for the Radiation Protection of the Population*, ICRP Publication 43
- DOE orders 5400.1 and 5400.5
- DOE/EH–0173T, “Environmental Regulatory Guide for Radiological Effluent Monitoring and Environmental Surveillance”

Detailed information about the site’s environmental monitoring program is documented in section 1111 (SRS EM Program) of the *SRS Environmental Monitoring Section Plans and Procedures*, WSRC–3Q1–2, Volume 1. This document is reviewed annually and updated every 3 years.

In addition, SRS has implemented and adheres to the SRS Environmental Management System Policy. As a result, the site has obtained International Organization for Standardization (ISO) 14001 certification. The full text of the policy is included in this appendix and begins on page 150.

Drinking water standards (DWS) can be found at <http://www.epa.gov/safewater/mcl.html> on the Internet, and maximum allowable concentrations of toxic air pollutants can be found at <http://www.scdhec.net/baq>. More information about certain media is presented in this appendix.

## Air Effluent Discharges

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DOE Order 5400.5 establishes Derived Concentration Guides (DCGs) for radionuclides in air. DCGs, calculated by DOE using methodologies consistent with recommendations found in International Commission on Radiological Protection (ICRP) publications 26 (*Recommendations of the International Commission on Radiological Protection*) and 30 (*Limits for the Intake of Radionuclides by Workers*), are used as reference concentrations for conducting environmental protection programs at DOE sites. DCGs are not considered release limits. DCGs for radionuclides in air are discussed in more detail on page 146.

Radiological airborne releases also are subject to EPA regulations cited in 40 CFR 61, “National Emission Standards for Hazardous Air Pollutants,” Subpart H (“National Emission Standards for Emissions of Radionuclides Other Than Radon from Department of Energy Facilities”).

Regulation of radioactive and nonradioactive air emissions—both criteria pollutants and toxic air pollutants—has been delegated to SCDHEC. SCDHEC, therefore, must ensure that its air pollution regulations are at least as stringent as federal regulations required by the Clean Air Act. This is accomplished by SCDHEC

Regulation 61–62, “Air Pollution Control Regulations and Standards.” As with many regulations found in the Code of Federal Regulations (CFR), many of SCDHEC’s regulations and standards are source specific. Each source of air pollution at SRS is permitted or exempted by SCDHEC, with specific emission rate limitations or special conditions identified. The bases for the limitations and conditions are the applicable South Carolina air pollution control regulations and standards. In some cases, specific applicable CFRs are also cited in the permits issued by SCDHEC.

Two SCDHEC standards, which govern criteria and toxic air pollutants and ambient air quality, are applicable to all SRS sources. Regulation 61–62.5, Standard No. 2, “Ambient Air Quality Standards,” identifies eight criteria air pollutants commonly used as indices of air quality (e.g., sulfur dioxide, nitrogen dioxide, and lead) and provides allowable site boundary concentrations for each pollutant as well as the measuring intervals. Compliance with the various pollutant standards is determined by conducting air dispersion modeling for all sources of each pollutant using EPA-approved dispersion models and then comparing the results to the standard. The pollutants, measuring intervals, and allowable concentrations are given in table A–1. The standards are in micrograms per cubic meter unless noted otherwise.

Two-hundred fifty-six toxic air pollutants and their respective allowable site boundary concentrations are identified in Regulation 61–62.5, Standard No. 8, “Toxic Air Pollutants.” As with Standard No. 2, compliance is determined by air dispersion modeling. Toxic air pollutants can be found at <http://www.scdhec.net/baq>.

SCDHEC airborne emission standards for each SRS permitted source may differ, based on size and type of facility, type and amount of expected emissions, and the year the facility was placed into operation. For example, SRS powerhouse coal-fired boilers are regulated by Regulation 61–62.5, Standard No. 1, “Emissions From Fuel Burning Operations.” This standard specifies that for powerhouse stacks built before February 11, 1971, the opacity standard is 40 percent. For new sources constructed after this date, the opacity standard typically is 20 percent. The standards for particulate and sulfur dioxide emissions are shown in table A–2.

Regulation 61–62.5, Standard No. 4, “Emissions from Process Industries,” is applicable to all SRS sources except those regulated by a different source specific standard. For some SRS sources, particulate

**Table A–1**  
**Criteria Air Pollutants**

Pollutant	Interval	$\mu\text{g}/\text{m}^3$ <sup>a,b</sup>
Sulfur Dioxide	3 hours	1300 <sup>c</sup>
	24 hours	365 <sup>c</sup>
	annual	80
Total Suspended Particulates	Annual Geometric Mean	75
PM10	24 hours	150 <sup>d</sup>
	annual	50 <sup>d</sup>
Carbon Monoxide	1 hour	40 mg/m <sup>3</sup>
	8 hours	10 mg/m <sup>3</sup>
Ozone	1 hour	0.12 ppm <sup>d</sup>
Gaseous Fluorides (as HF)	12-hour avg.	3.7
	24-hour avg.	2.9
	1-week avg.	1.6
Nitrogen Dioxide	annual	100
Lead	Calendar Quarterly Mean	1.5

a Arithmetic average except in case of total suspended particulate matter (TSP)

b At 25 °C and 760 mm Hg

c Not to be exceeded more than once a year

d Attainment determinations will be made based on the criteria contained in appendices H and K, 40 CFR 50, July 1, 1987.

matter emission limits are dependent on the weight of the material being processed and are determined from a table in the regulation. For process and diesel engine stacks in existence on or before December 31, 1985, emissions shall not exhibit an opacity greater than 40 percent. For new sources, where construction was started after

**Table A–2**  
**Airborne Emission Standards for SRS Coal-Fired Boilers**

Sulfur Dioxide	3.6 lb/10 <sup>6</sup> BTU <sup>a</sup>
Total Suspended Particulates	0.6 b/10 <sup>6</sup> BTU
Opacity	40%

a British Thermal Unit

December 31, 1985, the opacity standard is 20 percent.

As previously mentioned, some SRS sources have both SCDHEC and CFRs applicable and identified in their permits. For the package steam generating boilers in K-Area and two portable package boilers, both SCDHEC and federal regulations are applicable. The standard for sulfur dioxide emissions is specified in 40 CFR 60, Subpart Dc, "Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units," while the standard for particulate matter is found in Regulation 61–62.5, Standard No. 1, "Emissions From Fuel Burning Operations." Because these units were constructed after applicability dates found in both regulations, the opacity limit for these units is the same in both regulations. The emissions standards for these boilers are presented in table A–3.

Another federal regulation, 40 CFR 60, Subpart Kb, "Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction, or Modification Commenced after

**Table A–3**  
**Airborne Emission Standards for SRS Fuel Oil-Fired Package Boilers**

Sulfur Dioxide	0.5 lb/10 <sup>6</sup> BTU
Total Suspended Particulates	0.6 b/10 <sup>6</sup> BTU
Opacity	20%

July 23, 1984," specifies types of emission controls that must be incorporated into the construction of a source. In this regulation, the type of control device required is dependent on the size of the tank and the vapor pressures of the material being stored. This regulation is applicable to several sources at SRS, such as the two 30,000-gallon No. 2 fuel oil storage tanks in K-Area or the four mixed solvent storage tanks in H-Area. However, because of the size of these tanks and vapor pressures of the materials being stored, these tanks are not required to have control devices installed. The only requirements applicable to SRS storage tanks are those for record keeping.

## (Process) Liquid Effluent Discharges

DOE Order 5400.5 establishes DCGs for radionuclides in process effluents. (DCGs for radionuclides in water are discussed in more detail on page 146.) DCGs were calculated by DOE using methodologies consistent with recommendations found in ICRP, 1987 and ICRP, 1979 and are used

- as reference concentrations for conducting environmental protection programs at DOE sites
- as screening values for considering best available technology for treatment of liquid effluents

DOE Order 5400.5 exempts aqueous tritium releases from best available technology requirements but not from ALARA (as low as reasonably achievable) considerations.

SRS discharges water into site streams and the Savannah River under four NPDES permits: one

industrial wastewater permit (SC0000175), one general utility water discharge permit (SCG250162), and two stormwater runoff permits (SCR000000 for industrial discharges and SCR100000 for construction discharges).

A fifth permit (ND0072125) is a no-discharge water pollution control land application permit that regulates sludge generated at onsite sanitary waste treatment plants.

Detailed requirements for each permitted discharge point—including parameters sampled for, permit limits for each parameter, sampling frequency, and method for collecting each sample—can be found in the individual permits, which are available to the public through SCDHEC's Freedom of Information Office at (803) 734–5376.

## Site Streams

SRS streams are classified as "Freshwaters" by the South Carolina Pollution Control Act. Freshwaters are defined as surface water suitable for

- primary- and secondary-contact recreation and as a drinking water source after conventional

treatment in accordance with SCDHEC requirements

- fishing and survival and propagation of a balanced indigenous aquatic community of fauna and flora

**Table A-4**  
**South Carolina Water Quality Standards for Freshwaters**

Note: This is a partial list only of water quality standards for freshwaters.

Parameters	Standards
<b>a. Fecal coliform</b>	Not to exceed a geometric mean of 200/100 mL, based on five consecutive samples during any 30-day period; nor shall more than 10 percent of the total samples during any 30-day period exceed 400/100 mL.
<b>b. pH</b>	Range between 6.0 and 8.5.
<b>c. Temperature</b>	Generally, shall not be increased more than 5 °F (2.8 °C) above natural temperature conditions or be permitted to exceed a maximum of 90 °F (32.2 °C) as a result of the discharge of heated liquids. For exceptions, see E-9.A, Regulation 61-68, "Water Classifications and Standards" (June 26, 1998).
<b>d. Dissolved oxygen</b>	Daily average not less than 5.0 mg/L, with a low of 4.0 mg/L.
<b>e. Garbage, cinders, ashes, sludge, or other refuse</b>	None allowed.
<b>f. Treated wastes, toxic wastes, deleterious substances, colored or other wastes, except those in (e) above.</b>	None alone or in combination with other substances or wastes in sufficient amounts to make the waters unsafe or unsuitable for primary-contact recreation or to impair the waters for any other best usage as determined for the specific waters assigned to this class.
<b>g. Ammonia, chlorine, and toxic pollutants listed in the federal Clean Water Act (307) and for which EPA has developed national criteria (to protect aquatic life).</b>	See E-10 (list of water quality standards based on organoleptic data) and E-12 (water quality criteria for protection of human health), Regulation 61-68, "Water Classifications and Standards" (June 26, 1998).

SOURCE: [SCDHEC, 1998]

- industrial and agricultural uses
- Table A-4 provides some of the specific guides used in water quality surveillance, but because some of these guides are not quantifiable, they are not tracked in response form (i.e., amount of garbage found).

## Savannah River

Because the Savannah River is defined under the South Carolina Pollution Control Act as a Freshwater system, the river is regulated in the same manner as are site streams (table A-4).

## Drinking Water

The federal Safe Drinking Water Act (SDWA)—enacted in 1974 to protect public drinking water supplies—was amended in 1980, 1986, and 1996. Regulations, R61-58, and EPA National Primary Drinking Water Regulations, 40 CFR 141.

SRS drinking water is supplied by 18 separate systems, all of which utilize groundwater sources. The three larger consolidated systems (A-Area, D-Area, and K-Area) are actively regulated by SCDHEC and are classified as

SRS drinking water systems are tested routinely by SRS and SCDHEC to ensure compliance with SCDHEC State Primary Drinking Water

nontransient/noncommunity systems because each serves more than 25 people. The remaining 15 site water systems, each of which serves fewer than 25 people, receive a lesser degree of regulatory oversight.

Under the SCDHEC-approved, ultra-reduced monitoring plan, lead and copper sampling will not be required again for the A-Area consolidated system until 2004. The D-Area and K-Area consolidated water systems qualified in 1997 for an ultra-reduced monitoring plan. Both D-Area and K-Area will be sampled in 2003 for lead and copper.

The B-Area Bottled Water Facility, which was approved for operation in 1998, is listed as a public water system by SCDHEC and is required to be sampled for bacteriological analysis on a quarterly basis. Unlike the D-Area and K-Area consolidated water systems, lead and copper monitoring are not required.

DWS for specific radionuclides and contaminants can be found on the Internet at <http://www.epa.gov/safewater/mcl.html>.

## Groundwater

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The analytical results of samples taken from SRS monitoring wells that exceed various standards are discussed in this report. Constituents discussed are compared to final federal primary DWS, or other standards if DWS do not exist, because groundwater aquifers are defined as potential drinking water sources by the South Carolina Pollution Control Act. The DWS can be found at <http://www.epa.gov/safewater/mcl.html> on the Internet. DWS are not always the standards applied by regulatory agencies to the SRS waste units under their jurisdiction. For instance, standards under RCRA are DWS, groundwater protection standards, background levels, and alternate concentration limits.

Two constituents having DWS—dichloromethane and bis(2-ethylhexyl) phthalate—are not discussed in this report. Both are common laboratory contaminants and are reported in groundwater samples with little or no reproducibility. Both are reported, with appropriate flags and qualifiers, in the data tables of the quarterly reports cited in chapter 8, “Groundwater.”

The standard used for lead, 50 µg/L, is the SCDHEC DWS. The federal standard of 15 µg/L is a treatment standard for drinking water at the consumer’s tap; thus, it is inappropriate for use as a groundwater standard.

Of the radionuclides discussed, only gross alpha, strontium-90, and tritium are compared to true primary DWS. The regulatory standards for radionuclide discharges from industrial and governmental facilities are set under the Clean Water Act, RCRA, and Nuclear Regulatory Commission and DOE regulations. The proposed drinking water maximum contaminant levels discussed in this report are only an adjunct to these release restrictions and are not used to regulate SRS groundwater.

The standard used for gross beta is a screening standard; when public drinking water exceeds this standard, the supplier is expected to analyze for individual beta and gamma emitters. A gross beta result above the standard is an indication that one or more radioisotopes are present in quantities that would exceed the EPA annual dose equivalent for persons consuming 2 liters daily. Thus, for the individual beta and gamma radioisotopes (other than strontium-90 and tritium), the standard discussed in this report is the activity per liter that would, if only that isotope were present, exceed the dose equivalent. Similarly, the standards for alpha emitters discussed in this report are calculated to present the same risk at the same rate of ingestion.

Although radium has a DWS of 5 pCi/L for the sum of radium-226 and radium-228, the standards discussed in this report are the proposed standards of 20 pCi/L for each isotope separately. Radium-226, an alpha emitter, and radium-228, a beta emitter, cannot be analyzed by a single method. Analyses for total alpha-emitting radium, which consists of radium-223, radium-224, and radium-226, are compared to the standard for radium-226.

Four other constituents without DWS are discussed in this report when their values exceed specified levels. These constituents are specific conductance at values equal to or greater than 100 µS/cm, alkalinity (as CaCO<sub>3</sub>) at values equal to or greater than 100 mg/L, total dissolved solids (TDS) at values equal to or greater than 200 mg/L, and pH at values equal to or less than 4.0 or equal to or greater than 8.5. The selection of these values as standards for comparison is somewhat arbitrary; however, these values exceed levels usually found in background wells at SRS. The occurrence of elevated alkalinity (as CaCO<sub>3</sub>), specific conductance, pH, and TDS within a single well may indicate leaching of the grouting material used in well construction, rather than degradation of the groundwater.

## Potential Dose

The radiation protection standards followed by SRS are outlined in DOE Order 5400.5 and include EPA regulations on the potential doses from airborne releases and treated drinking water.

The following radiation dose standards for protection of the public in the SRS vicinity are specified in DOE Order 5400.5.

Drinking Water Pathway . . . . 4 mrem per year  
Airborne Pathway . . . . . 10 mrem per year  
All Pathways . . . . . 100 mrem per year

The EPA annual dose standard of 10 mrem (0.1 mSv) for the atmospheric pathway, which is contained in 40 CFR 61, Subpart H, is adopted in DOE Order 5400.5.

These dose standards are based on recommendations of the ICRP and the National Council on Radiation Protection and Measurements (NCRP).

The DOE dose standard enforced at SRS for drinking water is consistent with the criteria contained in “National Interim Primary Drinking Water Regulations, 40 CFR Part 141.” Under these

regulations, persons consuming drinking water shall not receive an annual whole body dose—DOE Order 5400.5 interprets this dose as committed effective dose equivalent —of more than 4 mrem (0.04 mSv).

In 2000, EPA promulgated 40 CFR, Parts 9, 141, and 142, “National Primary Drinking Water Regulations; Radionuclides; Final Rule.” This rule, which is applicable only to community drinking water systems, finalized maximum contaminant levels (MCLs) for radionuclides, including uranium. In essence, it reestablishes the MCLs from EPA’s original 1976 rule. Most of these MCLs are derived from dose conversion factors that are based on early ICRP–2 methods.

However, when calculating dose, SRS must use the more current ICRP–30-based dose conversion factors provided by DOE. Because they are based on different methods, most EPA and DOE radionuclide dose conversion factors differ. Therefore, a direct comparison of the drinking water doses calculated for showing compliance with DOE Order 5400.5 to the EPA drinking water MCLs cannot be made.

### Comparison of Average Concentrations in Airborne Emissions to DOE Derived Concentration Guides

Average concentrations of radionuclides in airborne emissions are calculated by dividing the yearly release total of each radionuclide from each stack by the yearly stack flow quantities. These average concentrations then can be compared to the DOE DCGs, which are found in DOE Order 5400.5 for each radionuclide.

DCGs are used as reference concentrations for conducting environmental protection programs at all DOE sites. DCGs, which are based on a 100-mrem exposure, are applicable at the point of discharge (prior to dilution or dispersion) under conditions of continuous exposure (assumed to be an average

inhalation rate of 8,400 cubic meters per year). This means that the DOE DCGs are based on the highly conservative assumption that a member of the public has direct access to and continuously breathes (or is immersed in) the actual air effluent 24 hours a day, 365 days a year. However, because of the large distance between most SRS operating facilities and the site boundary, this scenario is improbable.

Average annual radionuclide concentrations in SRS air effluent can be referenced to DOE DCGs as a screening method to determine if existing effluent treatment systems are proper and effective.

### Comparison of Average Concentrations in Liquid Releases to DOE Derived Concentration Guides

In addition to dose standards, DOE Order 5400.5 imposes other control considerations on liquid releases. These considerations are applicable to direct discharges but not to seepage basin and Solid Waste Disposal Facility (SWDF) migration discharges. The DOE order lists DCG values for most radionuclides. DCGs are used as reference concentrations for conducting environmental protection programs at all DOE sites. These DCG

values are not release limits but screening values for best available technology investigations and for determining whether existing effluent treatment systems are proper and effective.

Per DOE Order 5400.5, exceedance of the DCGs at any discharge point may require an investigation of best available technology waste treatment for the liquid effluents. Tritium in liquid effluents is

specifically excluded from best available technology requirements; however, it is not excluded from other ALARA considerations. DOE DCG compliance is demonstrated when the sum of the fractional DCG values for all radionuclides detectable in the effluent is less than 1.00, based on consecutive 12-month average concentrations.

DCGs, based on a 100-mrem exposure, are applicable at the point of discharge from the effluent conduit to the environment (prior to dilution or dispersion). They are based on the highly conservative assumption that a member of the public

has continuous direct access to the actual liquid effluents and consumes 2 liters of the effluents every day, 365 days a year. However, because of security controls and the large distance between most SRS operating facilities and the site boundary, this scenario is highly improbable, if not impossible.

For each site facility that releases radioactivity, the site's Environmental Monitoring Section (EMS) compares the monthly liquid effluent concentrations and 12-month average concentrations against the DOE DCGs.

## Environmental Management

SRS began its cleanup program in 1981. Two major federal statutes provide guidance for the site's environmental restoration and waste management activities—RCRA and CERCLA. RCRA addresses the management of hazardous waste and requires that permits be obtained for facilities that treat, store, or dispose of hazardous or mixed waste. It also requires that DOE facilities perform appropriate corrective action to address contaminants in the environment. CERCLA (also known as Superfund) addresses the uncontrolled release of hazardous substances and the cleanup of inactive waste sites. This act establishes a National Priority List of sites targeted for assessment and, if necessary, corrective/remedial action. SRS was placed on this list December 21, 1989 [Fact Sheet, 2000]. In August 1993, SRS entered into the Federal Facility Agreement (FFA) with EPA Region IV and SCDHEC. This agreement governs the corrective/remedial action process from site investigation through site remediation. It also describes procedures for setting annual work priorities, including schedules and deadlines, for that

process [FFA under section 120 of CERCLA and sections 3008(h) and 6001 of RCRA].

Additionally, DOE is complying with Federal Facility Compliance Act requirements for mixed waste management—including high-level waste, most transuranic waste, and low-level waste with hazardous constituents. This act requires that DOE develop and submit site treatment plans to the EPA or state regulators for approval.

The disposition of facilities after they are declared excess to the government's mission is managed by the Facilities Disposition Division. The facility disposition process is conducted in accordance with DOE Order 430.1A, "Life Cycle Asset Management," and its associated guidance documents. The major emphases are (1) to reduce the risks to workers, the public, and the environment, and (2) to reduce the costs required to maintain the facilities in a safe condition through a comprehensive surveillance and maintenance program.

## Quality Assurance/Quality Control

DOE Order 414.1, "Quality Assurance," sets requirements and guidelines for departmental quality assurance (QA) practices. To ensure compliance with regulations and to provide overall quality requirements for site programs, Westinghouse Savannah River Company (WSRC) developed its *Quality Assurance Management Plan, Rev. 8* (WSRC-RP-92-225). The requirements of WSRC-RP-92-225 are implemented by the *Westinghouse Savannah River Company Quality Assurance Manual* (WSRC 1Q).

The *Savannah River Site Environmental Monitoring Section Quality Assurance Plan*, WSRC-3Q1-2, Volume 3, Section 8000, was written to apply the

QA requirements of WSRC 1Q to the environmental monitoring and surveillance program. The EMS WSRC-3Q1 procedure series includes procedures on sampling, radiochemistry, and water quality that emphasize the quality control requirements for EMS.

QA requirements for monitoring radiological air emissions are specified in 40 CFR 61, "National Emission Standards for Hazardous Air Pollutants." For radiological air emissions at SRS, the responsibilities and lines of communication are detailed in *National Emission Standards for Hazardous Air Pollutants Quality Assurance Project Plan (U)* (WSRC-IM-91-60).

To ensure valid and defensible monitoring data, the records and data generated by the monitoring program are maintained according to the requirements of DOE Guide 1324.5B, “Implementation Guide for Use with 36 CFR Chapter XII – Subchapter B Records Management,” and of WSRC 1Q. QA records include sampling and analytical procedure manuals, logbooks, chain-of-custody forms, calibration and training records, analytical notebooks, control charts, validated laboratory data, and environmental reports. These records are maintained and stored per the requirements of *WSRC Sitewide Records Inventory and Disposition Schedule* (WSRC-1M-93-0060).

## Reporting

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DOE Order 231.1, “Environment, Safety and Health Reporting,” requires that SRS submit an annual environmental report.

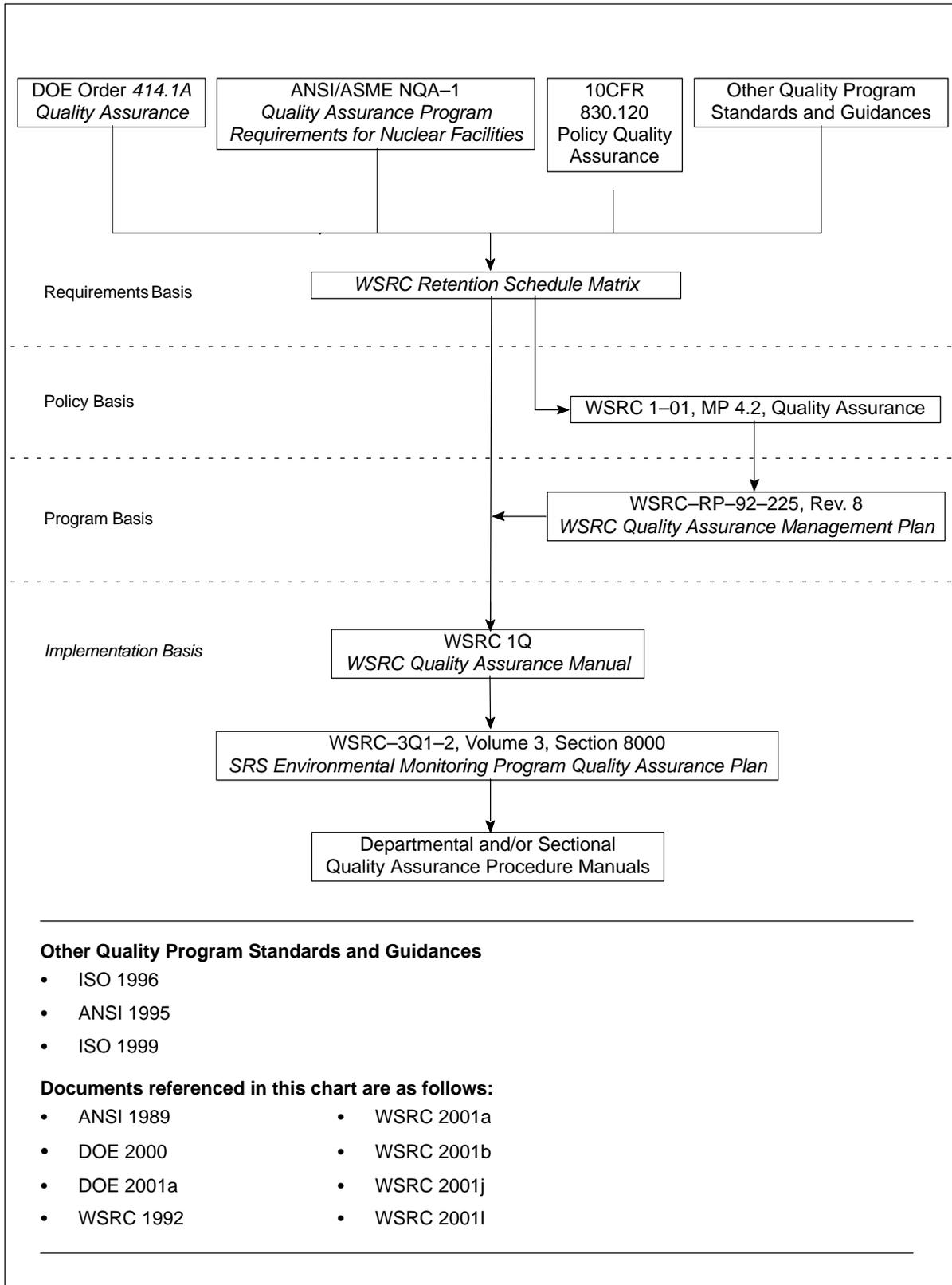
This report, the *Savannah River Site Environmental*

EMS assessments are implemented according to the following documents:

- WSRC 12Q, *Assessment Manual*
- WSRC 1Q
- DOE Order 414.1, “Quality Assurance”
- DOE/EM-0159P, “Analytical Laboratory Quality Assurance Guidance”
- DOE/EM-0157P, “Laboratory Assessment Plates”
- DOE/EH-0173T

Figure A-1 illustrates the hierarchy of relevant guidance documents that support the EMS QA/QC program.

*Report for 2001*, is an overview of effluent monitoring and environmental surveillance activities conducted on and in the vicinity of SRS from January 1 through December 31, 2001.



**Figure A-1 SRS EM Program QA/QC Document Hierarchy**

This diagram depicts the hierarchy of relevant guidance and supporting documents for the QA/QC program.

## ISO 14001 Environmental Management System

ISO 14001 is the Environmental Management System Standard within the ISO 14000 series of standards, a family of voluntary environmental management standards and guidelines. SRS first achieved ISO 14001 certification in 1997 by demonstrating adherence to and programmatic implementation of the SRS Environmental

Management System Policy. Annual audits are conducted to maintain certification, and a recertification audit is conducted every 3 years. The site was recertified in 2000 following the recertification audit. The full text of the policy (without the names of the signatories) follows.

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### Savannah River Site (SRS) Environmental Management System Policy November 1, 1999

#### OBJECTIVE:

The objective of this policy is to ensure every employee of the DOE Savannah River Operations Office (SR), all contractors, subcontractors, and other entities performing work at the Savannah River Site (SRS) do so in accordance with the requirements of ISO 14001, DOE Order 5400.1 and the mission, the vision, the core values, and the environmental goals and objectives of the Savannah River Site Strategic Plan.

#### DIRECTIVE:

Recognizing that all aspects of operations carried out at the SRS may impact the environment, the DOE-SR policy is that all employees, contractors, subcontractors, and other entities performing work at the SRS shall abide by the directives in this document. Westinghouse Savannah River Company (WSRC), Wackenhut Services, Inc. – Savannah River Site (WSI), Savannah River Ecology Laboratory (SREL), General Services Administration – Savannah River Site (GSA), and the Savannah River Natural Resources Management and Research Institute (SRI) shall, by virtue of their signature, endorse the principles stated in this policy.

- This document describes the SRS Environmental Management System Policy. It shall serve as the primary documentation for the environmental goals and objectives of the SRS and shall be available to the public. It shall be centrally maintained and updated as necessary to reflect the changing needs, missions, and goals of the SRS.
- The Environmental Management System shall pursue and measure continual improvement in performance by establishing and maintaining documented environmental objectives and targets that correspond to SRS's mission, vision, and core values. The environmental objectives and targets shall be established for each relevant function and level within DOE-SR and all contractors, subcontractors, and other entities performing work at the SRS for all activities having actual or potentially significant environmental impacts.
- DOE-SR and all contractors, subcontractors, and other entities performing work at SRS shall:
  - 1 Manage the SRS environment, natural resources, products, waste, and contaminated materials so as to eliminate or mitigate any threat to human health or the environment at the earliest opportunity and implement process improvements as appropriate to ensure continued improvement of performance in environmental management.
  - 2 Implement a pollution prevention program to reduce waste generation, releases of pollutants, future waste management/pollution control costs; and to minimize environmental impacts as well as promote increased energy efficiency.
  - 3 Conduct operations in compliance with the letter and spirit of all applicable federal, state, and local laws, regulations, statutes, executive orders, DOE directives and standards/requirements identification documents.
  - 4 Work cooperatively and openly with appropriate local, state, federal agencies, public stakeholders, and site employees to prevent pollution, achieve environmental compliance, conduct cleanup/restoration activities, enhance environmental quality, and ensure the protection of workers and the public health.

- 5 Design, develop, construct, operate, maintain, decommission and deactivate facilities and operations in a manner that shall be resource efficient and will protect and improve the quality of the environment for future generations and continue to maintain the SRS as a unique national environmental asset.
- 6 Recognize that the responsibility for quality communications rests with each individual employee and that it shall be the responsibility of all employees to identify and communicate ideas for improving environmental protection activities and programs at the site.

Adherence to and programmatic implementation of this policy shall be monitored by the DOE–SR Assistant Manager for Environmental Programs in coordination with the contractors, subcontractors, and other entities performing work on the SRS. An annual evaluation of the Environmental Management System, with recommendations for improvement, shall be provided to the undersigned managers. *[Editors' note: The names of the signatories that appeared at the end of the full text of the policy have not been included here.]*