

**POTENTIAL REQUIREMENTS AND GUIDANCE DETAIL
FOR SRS HIGH-LEVEL WASTE TANK CLOSURE
(DRAFT REVISION 3, APRIL 15, 1996)**

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
SCPCA R.61-82, Section IV	<u>Proper Closeout of Waste Treatment Facilities Not Defined As Lagoons or Package Plants</u> - Waste treatment units shall be closed out in accordance with guidelines issued by SCDHEC on an individual basis. These guidelines shall be designed to prevent health hazards and to promote safety in and around the abandoned sites.	Applicable to SRS HLW tanks which are permitted by SCDHEC as industrial wastewater treatment facilities (FFA, Section IX.E.4). Made applicable to all SRS HLW tanks except Tank 16 by DOE's commitment in its 11/09/93 Waste Removal Plan and Schedule (FFA, Section IX.E.1,2). Applicability extended to all SRS HLW tank systems pursuant to discussions with SCDHEC and EPA.	A	CP
CWA R.61-68.E(7)	<u>Water Quality Criteria to Protect Aquatic Life</u> - Numeric criteria for all class surface waters are adopted for toxic pollutants for which the EPA has published national criteria to protect aquatic life pursuant to Section 304(a) for the Federal CWA and for ammonia and chlorine. No numeric criteria are listed in this regulation; however, the national numeric criteria developed and published by EPA are hereby adopted by reference. Compounds with national criteria to protect aquatic life listed in this regulation include: arsenic cadmium chromium (III and VI) copper lead mercury nickel selenium silver zinc	Generally applicable standards for maintaining quality of surface water and groundwater.	A	CP

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CWA R.61-68.E(8)(b)	<p><u>Water Quality Standards to Protect Human Health</u> - State ambient water quality standards to protect human health are listed in Appendix 2 of this regulation. These standards will be applicable to surface waters at average annual flow conditions or at average tidal dilution conditions, whichever is appropriate. The substances and their standards (g/l) are:</p> <table><tr><td>Antimony</td><td>4308</td></tr><tr><td>Arsenic</td><td>1.4</td></tr><tr><td>Beryllium</td><td>1.17</td></tr><tr><td>Cadmium</td><td>10</td></tr><tr><td>Chromium (III)</td><td>673077</td></tr><tr><td>Chromium (VI)</td><td>50</td></tr><tr><td>Lead</td><td>50</td></tr><tr><td>Mercury</td><td>0.153</td></tr><tr><td>Nickel</td><td>4584</td></tr><tr><td>Selenium</td><td>10</td></tr><tr><td>Silver</td><td>50</td></tr><tr><td>Thallium</td><td>48</td></tr></table>	Antimony	4308	Arsenic	1.4	Beryllium	1.17	Cadmium	10	Chromium (III)	673077	Chromium (VI)	50	Lead	50	Mercury	0.153	Nickel	4584	Selenium	10	Silver	50	Thallium	48	Generally applicable standards for maintaining quality of surface water and groundwater.	A	CP
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CWA R.61-68.E(8)(e)	<p><u>Water Quality Standards to Protect Human Health</u> - A list of water quality standards based organoleptic data (prevention of undesirable taste and odor) are adopted herein. For those substances which have both human health standards and organoleptic standards, the more stringent of the two will be used for the purpose of derivation of effluent limits. The substances and their standards (g/l) are:</p> <table><tr><td>Copper</td><td>1000</td></tr><tr><td>Zinc</td><td>5000</td></tr><tr><td>Chlorobenzene</td><td>20</td></tr><tr><td>2-Chlorophenol</td><td>0.1</td></tr><tr><td>2,4-Dichlorophenol</td><td>0.3</td></tr><tr><td>2,4-Dimethylphenol</td><td>400</td></tr><tr><td>3-Methyl-4-Chlorophenol</td><td>3000</td></tr><tr><td>Pentachlorophenol</td><td>30</td></tr></table>	Copper	1000	Zinc	5000	Chlorobenzene	20	2-Chlorophenol	0.1	2,4-Dichlorophenol	0.3	2,4-Dimethylphenol	400	3-Methyl-4-Chlorophenol	3000	Pentachlorophenol	30	Generally applicable standards for maintaining quality of surface water and groundwater.	A	CP								
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CWA R.61-68.F(3)(c)	<u>Class Descriptions and Specific Standards for Surface Waters</u> - Freshwaters shall meet standards for toxic pollutants listed in Section 307 of the Federal CWA and for which EPA has developed national criteria, and ammonia and chlorine. Standards for these substances are prescribed in Sections E(7) and E(8) of this regulation.	Generally applicable standards for maintaining quality of surface water.	A	CP
CWA R.61-68.G	<u>Class Descriptions and Specific Standards for Ground Waters</u> - All South Carolina groundwater is classified GB effective June 28, 1995. Quality standards for Class GB groundwaters are: <ul style="list-style-type: none"> • Inorganic chemicals shall meet standards set forth in the State Primary Drinking Water Regulations, R.61-58.5.B(2). • Organic chemicals shall meet standards set forth in the State Primary Drinking Water Regulations, R.61-58.5.D(2). • Man-made radionuclides shall not exceed concentrations or amounts such as to interfere with use, actual or intended, as determined by the Department. 	Generally applicable standards for maintaining quality of groundwater.	A	CP
SDWA 40 CFR 141.15 (Subpart B) R.61-58.5(J)(2)	<u>Maximum Contaminant Levels</u> - The following are the maximum contaminant levels for radium-226, radium-228, and gross alpha particle radioactivity: (a) Combined radium-226 and radium-228 - 5 pCi/L. (b) Gross alpha particle activity (including radium-226 but excluding radon and uranium) - 15 pCi/L.	EPA Federal regulation and corresponding SC regulation that is applicable to operators of public drinking water systems. These limits have been applied to groundwater beneath and adjacent to projects similar to the HLW tank closure and are well suited for use as indicators of groundwater protection.	A	CP
SDWA 40 CFR 141.16(a) (Subpart B) R.61-58.5(L)(2)(a)	<u>Maximum Contaminant Levels</u> - The average annual concentration of beta particle and photon radioactivity from man-made radionuclides in drinking water shall not produce an annual dose equivalent to the total body or any internal organ greater than 4 mrem/year.	EPA Federal regulation and corresponding SC regulation that is applicable to operators of public drinking water systems. These limits have been applied to groundwater beneath and adjacent to projects similar to the HLW tank closure and are well suited for use as indicators of groundwater protection.	A	CP

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SDWA 40 CFR 141.16(b) (Subpart B) R.61.58.5(L)(2)(b)	<p><u>Maximum Contaminant Levels</u> - Except for the radionuclides listed in Table A, the concentration of man-made radionuclides causing 4 mrem total body or organ dose equivalents shall be calculated on the basis of a 2 liter per day drinking water intake using the 168 hour data listed in "Maximum Permissible body Burdens and Maximum Permissible Concentration of Radionuclides in Air or Water for Occupational Exposure," NBS Handbook 69 as amended August 1963, U.S. Department of Commerce. If two or more radionuclides are present, the sum of their annual dose equivalent to the total body or the any organ shall not exceed 4 mrem/year.</p> <p>Table A - Average Annual Concentrations Assumed to Produce a Total Body or Organ Dose of 4 mrem/yr</p> <table><tr><td><u>Radionuclide</u></td><td><u>Critical Organ</u></td><td><u>pCi per liter</u></td></tr><tr><td>Tritium</td><td>Total body</td><td>20,000</td></tr><tr><td>Strontium-90</td><td>Bone Marrow</td><td>8</td></tr></table>	<u>Radionuclide</u>	<u>Critical Organ</u>	<u>pCi per liter</u>	Tritium	Total body	20,000	Strontium-90	Bone Marrow	8	EPA Federal regulation and corresponding SC regulation that is applicable to operators of public drinking water systems. These limits have been applied to groundwater beneath and adjacent to projects similar to the HLW tank closure and are well suited for use as indicators of groundwater protection.	A	CP																					
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SDWA 40 CFR 141.51 (Subpart F)	<p><u>Maximum Contaminant Levels Goals</u> - The MCLGs for inorganic constituents are:</p> <table><tr><td><u>Contaminant</u></td><td><u>Milligrams per liter</u></td></tr><tr><td>Antimony</td><td>0.006</td></tr><tr><td>Barium</td><td>2</td></tr><tr><td>Beryllium</td><td>0.004</td></tr><tr><td>Cadmium</td><td>0.005</td></tr><tr><td>Chromium</td><td>0.1</td></tr><tr><td>Copper</td><td>1.3</td></tr><tr><td>Fluoride</td><td>4</td></tr><tr><td>Lead</td><td>zero¹</td></tr><tr><td>Mercury</td><td>0.002</td></tr><tr><td>Nitrate</td><td>10 (as N)</td></tr><tr><td>Nitrite</td><td>1 (as N)</td></tr><tr><td>Total Nitrate & Nitrite</td><td>10 (as N)</td></tr><tr><td>Selenium</td><td>0.05</td></tr><tr><td>Thallium</td><td>0.0005</td></tr></table> <p>¹action level for lead is 0.015 mg/l</p>	<u>Contaminant</u>	<u>Milligrams per liter</u>	Antimony	0.006	Barium	2	Beryllium	0.004	Cadmium	0.005	Chromium	0.1	Copper	1.3	Fluoride	4	Lead	zero ¹	Mercury	0.002	Nitrate	10 (as N)	Nitrite	1 (as N)	Total Nitrate & Nitrite	10 (as N)	Selenium	0.05	Thallium	0.0005	EPA Federal regulation that is applicable to operators of public drinking water systems. These limits have been applied to groundwater beneath and adjacent to projects similar to the HLW tank closure and are well suited for use as indicators of groundwater protection.	A	CP
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SDWA R.61-58.5(O)	<p><u>Secondary Maximum Contaminant Levels</u> - The SMCLs are:</p> <table><tr><th>Contaminant</th><th>Level</th></tr><tr><td>Aluminum</td><td>0.05 to 0.2 mg/l</td></tr><tr><td>Chloride</td><td>250 mg/l</td></tr><tr><td>Color</td><td>15 color units</td></tr><tr><td>Copper</td><td>1 mg/l</td></tr><tr><td>Corrosivity</td><td>Noncorrosive</td></tr><tr><td>Fluoride</td><td>2.0 mg/l</td></tr><tr><td>Foaming agents</td><td>0.5 mg/l</td></tr><tr><td>Iron</td><td>0.3 mg/l</td></tr><tr><td>Manganese</td><td>0.05 mg/l</td></tr><tr><td>Odor</td><td>3 threshold odor number</td></tr><tr><td>pH</td><td>6.5 to 8.5 s.u.</td></tr><tr><td>Silver</td><td>0.1 mg/l</td></tr><tr><td>Sulfate</td><td>250 mg/l</td></tr><tr><td>Total Dissolved Solids (TDS)</td><td>500 mg/l</td></tr><tr><td>Zinc</td><td>5 mg/l</td></tr></table>	Contaminant	Level	Aluminum	0.05 to 0.2 mg/l	Chloride	250 mg/l	Color	15 color units	Copper	1 mg/l	Corrosivity	Noncorrosive	Fluoride	2.0 mg/l	Foaming agents	0.5 mg/l	Iron	0.3 mg/l	Manganese	0.05 mg/l	Odor	3 threshold odor number	pH	6.5 to 8.5 s.u.	Silver	0.1 mg/l	Sulfate	250 mg/l	Total Dissolved Solids (TDS)	500 mg/l	Zinc	5 mg/l	SC regulation that is applicable to operators of public drinking water systems. These limits have been applied to groundwater beneath and adjacent to projects similar to the HLW tank closure and are well suited for use as indicators of groundwater protection.	A	CP
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<p>CERCLA SRS FFA WSRC-05-94-42 - DOE, EPA & DHEC, 8/16/93</p>	<p>The agreement directs the comprehensive remediation of SRS and also delineates the relationship between its requirements and the requirements for corrective measures being conducted under RCRA Section 3004 (u) and (v) according to the conditions of the RCRA permit and SC hazardous waste permit.</p> <p><u>Section IX - High-Level Radioactive Waste Tank System(s)</u></p> <p><u>Section IX.E.1</u> - DOE has submitted a waste removal plan and schedule for the waste tank system. DOE shall remove the tanks from service according to the approved plan(s) and schedule(s). Waste tanks deemed unsuitable by DHEC shall not receive additional waste prior to schedule approval for such receipt and only if waste receipt is approved as part of the plan associated with such schedule.</p> <p><u>Section IX.E.2</u> - The DOE waste tank system(s) removal plan(s) shall provide for the removal or decontamination of all residues, contaminated containment systems components (liners, etc.), contaminated soils and structures and equipment contaminated with hazardous and/or radioactive substances. If DOE demonstrates that it cannot practicably remove or decontaminate soils or structures and equipment, then DOE shall conduct all necessary response actions under Section XI through XVI of this Agreement for those waste tank system(s).</p> <p><u>Section IX.E.3</u> - DOE will submit to EPA and DHEC an annual report on the status of the tanks being removed from service under Subsection E.1.</p> <p><u>Section IX.E.4</u> - For waste tank system(s) that DOE decides to remove from service that have been issued an industrial wastewater permit under the Pollution Control Act (PCA),.</p>	<p>Standards for SRS HLW tank systems set forth in Section IX and Appendix B of the FFA apply to tank operations, including closure activities.</p>	<p>A</p>	<p>CP</p>

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	<p>the DOE shall remove such waste tank system(s) from service in accordance with the PCA and all applicable regulations promulgated pursuant to the PCA. For any waste tank systems(s) for which closure or removal from service is or has been conducted under the PCA, the DOE shall conduct Site Evaluation in accordance with Section X of the FFA.</p>			

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<p>CERCLA Waste Removal Plan and Schedule for the HLW Tank Farms, WSRC-RP- 93-1477, Rev. 0, 11/9/93</p>	<p>Waste removal plan and schedule for the HLW tank system(s) and/or component(s) that do not meet secondary containment standards or that leak or have leaked required by Section IX.E of the SRS FFA.</p> <p><u>III. HLW Facility Descriptions and Operating Plans - Tank Farm Waste Tanks & Waste Removal Operations:</u> (1) Type III tanks will be reused while the Type I, II, and IV tanks will be removed from service. (2) The tanks to be removed will undergo a water washing operation in the primary vessel and an annulus cleaning if waste is present in the annulus. (3) Salt will be removed from the new style tanks first, and these tanks will be reused to support Tank Farm evaporator operations and processing of DWPF recycle. (4) The first sludge tanks to be emptied will be old-style tanks, which will be removed from service.</p> <p><u>Operating Plans:</u> Each waste tank will be fitted with special waste removal equipment. (1) Tanks containing sludge will have four slurry pumps and one transfer pump installed to suspend the settled sludge into a pumpable slurry for transfer to ESP. (2) Tanks containing salt will have three slurry pumps and one transfer jet installed to dissolve the salt and transfer it to ITP.</p> <p><u>IV. Assumptions - Waste Removal:</u> (1) Each tank's waste removal schedule is based upon a typical construction-through-startup authorization task duration of 22-30 months. (2) As waste removal and water washing/annulus cleaning operations are completed for each old-style tank, that tank will be transitioned to SRS's Environmental Restoration Division for decommissioning and closure in accordance with applicable permits and other regulatory requirements.</p>	<p>Applicable to the removal of SRS HLW tanks from service in accordance with Section IX.E.1 of the FFA. To the extent that the proposed closure activities differ from those described in the Waste Removal Plan and Schedule, modifications to the plan may be required.</p>	<p>A</p>	<p>CP</p>

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	<p><u>VI. Waste Removal Description/Definition:</u> For the purposes of this plan, "removal from service" is defined as: (1) As much high level waste (salt, sludge and/or supernate) as practical is removed from the tank primaries and any annulus that had received waste via mechanical agitation (slurry pumps and eductor jets). (2) All tanks primaries and any annulus that received waste will be washed with inhibited water and as much waste as practical removed via installed systems (eductor jets and pumps).</p> <p>(1) Upon further evaluation, it may be decided that an additional chemical cleaning step may occur on some tanks as necessary. (2) A closure plan will be developed per SC Regulation R.61-82, Proper Closeout of Wastewater Treatment Facilities and submitted to DHEC for review and approval. (3) Upon approval, it is anticipated that the tank system/component will be turned over to the RCRA/CERCLA Program for decommissioning. (4) It may also be necessary to maintain a heel of inhibited water in some of the tanks to prevent structural damage to the tank bottom caused by upward groundwater pressure.</p>			
National Environmental Policy Act 42 USC 4321 et seq.), 10 CFR 1021	Requirements of NEPA to evaluate SRS HLW tank closure options would be fulfilled in accordance with DOE implementing regulations (10 CFR 1021). NEPA evaluation will address impacts, including occupational exposure to site personnel, associated with various closure alternatives.	Environmental assessment requirements of NEPA are applicable to all SRS operations, including HLW tank closure.	A	CP
Endangered Species Act of 1973 (16 USC 1531 et seq); 50 CFR 402 and related statutes (Anadromous Fish Conservation Act, Bald Eagle Protection Act, South Carolina Nongame and Endangered Species Conservation Act)	Prohibits federally-authorized actions that would likely jeopardize the existence of any threatened or endangered or otherwise protected species or result in the destruction or adverse modification of critical habitat.	Applicable if threatened or endangered or otherwise protected species exist on or near the site, or may potentially be affected by the proposed action.	A	CP

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Migratory Bird Treaty Act (16 USC 703-711)	Proposed action shall not kill migratory birds or destroy their nests and eggs.	Applicable in the presence of protected migratory birds or their nests.	A	CP
Fish and Wildlife Coordination Act (16 USC 661 <i>et seq</i>)	Proposed action will include measures to prevent, mitigate, or compensate for actions resulting in losses of fish or wildlife resources.	Applicable if a natural stream or body of water will be modified by discharges, diversions, etc.	A	CP
National Historic Preservation Act, 16 U.S.C. 470 <i>et seq.</i> and related legislation (e.g., Antiquities Act, Historic Sites Act, Archeological and Historic Preservation Act, Archaeological Resources Protection Act, American Indian Religious Freedom Act).	Impact potential on cultural resources for HLW tank closure options, if any, would be formally evaluated in the context of NEPA.	Requirements to evaluate potential impact to cultural resources is applicable to all SRS projects.	A	CP
Executive Orders 11990 "Protection of Wetlands" and 11988 "Floodplain Management" as implemented by 10 CFR 1022	Includes requirements to avoid adverse impacts to wetlands when practicable alternative exists.	Applicable to the extent that water quality of riparian wetlands and surface streams (e.g., Four Mile Branch) could be potentially affected by HLW tank closure options. No tank closure operations are anticipated to occur in wetlands or floodplains.	TBC	CP

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<p>CERCLA 42 U.S.C. 9621 Section 121(d) (Cleanup Standards)</p>	<p><u>Degree of Cleanup</u> - Remedial actions shall attain a degree of cleanup of hazardous substances, pollutants, or contaminants released into the environment and of control of future releases which assures protection of human health and the environment.</p> <p>Section 121(d) of CERCLA requires that remedial action attain a level or standard of control for any hazardous constituent, pollutant, or contaminant which at least attains:</p> <ul style="list-style-type: none"> • any legally applicable or relevant and appropriate standard, requirement, criterion, or limitation under Federal environmental law, and • any promulgated standard, requirement, criteria, or limitation under a State environmental or facility siting law that is more stringent than any Federal standard, requirement, or limitation and that has been identified by the State in a timely manner. <p>Such remedial action shall require a level or standard of control which attains MCL goals established under the SDWA and water quality criteria under section 304 or 303 of the CWA, where such goals are relevant and appropriate under the circumstances of the release or threatened release.</p>	<p>Potentially relevant and appropriate to ensure that HLW tank closure activities are consistent with final remedial action for the F&H tank farms area/site pursuant to the FFA.</p>	<p>RA</p>	<p>CP</p>

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CERCLA 40 CFR 300.400(g)	<p><u>Identification of applicable or relevant and appropriate requirements</u> - The lead and support agencies shall identify requirements applicable to the release or remedial action contemplated based upon an objective determination of whether the requirement specifically addresses a hazardous substance, pollutant, or contaminant, remedial action, location, or other circumstance found at a CERCLA site.</p> <p>If it is determined that a requirement is not applicable to a specific release, the requirement may still be relevant and appropriate to the circumstances of the release. In evaluating relevance and appropriateness, the factors in paragraphs (g)(2)(i) through (viii) of this section shall be examined, where pertinent, to determine whether a requirement addresses problems or situations sufficiently similar to the circumstances of the release or remedial action contemplated, and whether the requirement is well suited to the site, and is therefore both relevant and appropriate.</p>	Potentially relevant and appropriate to ensure that HLW tank closure activities are consistent with final remedial action for the F&H tank farms area/site pursuant to the FFA.	RA	CP
CERCLA 40 CFR 300.430(e)(2)(i)	<p>The remediation goals establish acceptable exposure levels that are protective of human health and the environment and are developed by considering ARARs (e.g., chemical-specific ARARs) under Federal or state environmental or facility siting laws, if available, and the following factors:</p> <p>For systemic toxicants, acceptable exposure levels represent concentration levels to which the human population, including sensitive subgroups, may be exposed without adverse effect, during a lifetime or part of a lifetime, incorporating an adequate margin of safety.</p> <p>For known or suspected carcinogens, acceptable exposure levels are generally concentration levels that represent an excess upper bound lifetime cancer risk to an individual of between 10^{-4} and 10^{-6}. The 10^{-6} risk level is the point of departure for determining remediation goals for alternatives where ARARs are not available or are not sufficiently protective because of the presence of multiple contaminants at a site or multiple exposure pathways.</p>	Potentially relevant and appropriate to ensure that HLW tank closure activities are consistent with final remedial action for the F&H tank farms area/site pursuant to the FFA.	RA	CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
CERCLA 40 CFR 300.430(e)(9)	<p><u>Nine Criteria for Evaluation</u> - The analysis of remedial alternatives under CERCLA shall consider nine criteria:</p> <ol style="list-style-type: none"> (1) Overall protection of human health and the environment (2) Compliance with applicable, or relevant and appropriate requirements (ARARs) (3) Long-term effectiveness and permanence including the magnitude of the residual risk remaining from untreated waste or treatment residuals remaining at the conclusion of the remedial activities and the adequacy and reliability of controls such as containment systems and institutional controls that are necessary to manage treatment residuals and untreated waste (4) Reduction of toxicity, mobility, or volume through treatment (5) Short-term effectiveness (6) Implementability including technical feasibility, administrative feasibility, and availability of services and materials (e.g., treatment, storage, or disposal capacity, prospective technologies) (7) Cost (8) State acceptance (9) Community acceptance <p>The first two, overall protection of human health and the environment and compliance with ARARs, are threshold requirements that must be met by each alternative to be eligible for selection. The next five are the primary balancing criteria and state and community acceptance are the modifying criteria to be considered in remedy selection.</p>	Potentially relevant and appropriate to ensure that HLW tank closure activities are consistent with final remedial action for the F&H tank farms area/site pursuant to the FFA.	RA	CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
CERCLA 40 CFR 300.430(f)(1)(ii)(C)	<p>An alternative may be selected that does not meet an ARAR under Federal environmental of State environment or facility siting laws under the following circumstances:</p> <ol style="list-style-type: none"> (1) the alternative selected is an interim measure and will become part of a total remedial action that will attain the applicable or relevant and appropriate federal or state requirement (2) compliance with such requirement will result in greater risk to human health and the environment than alternative options, (3) compliance with the requirements is technically impracticable from an engineering perspective, (4) the alternative will attain a standard of performance that is equivalent to that required under the otherwise applicable standard, requirement, or limitation, through use of another method or approach, (5) with respect to a state requirement, the state has not consistently applied, or demonstrated the intention to consistently apply, the promulgated requirement in similar circumstances at other remedial actions within the state. 	Potentially relevant and appropriate to ensure that HLW tank closure activities are consistent with final remedial action for the F&H tank farms area/site pursuant to the FFA.	RA	CP
RCRA 40 CFR 265, (Subpart G) R.61-79.265 (Subpart G)	<u>Closure and Postclosure</u> - Includes closure standards applicable to all HWMFs (§265.111-115) and postclosure standards (§265.116-120) applicable to postclosure care of tank systems required under §265.197 to meet the requirement for landfills.	<p>Substantive closure requirements of Subpart G are generally considered relevant and appropriate to closure of HLW tank systems, since these tank systems contain or have contained RCRA hazardous waste.</p> <p>Administrative closure and post-closure requirements of Subpart G are not considered as ARARs, since applicable administrative requirements are provided by R.61-82.</p> <p>Postclosure requirements of Subpart G are considered to be relevant and appropriate in the interim until any long-term maintenance and monitoring requirements are established. HLW tank closure activities must be consistent with a reasonable postclosure program.</p>	RA	CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
RCRA 40 CFR 265.111 (Subpart G) R.61-79.265.111 (Subpart G)	<u>Closure Performance Standard for HWMFs</u> - The owner/operator must close the facility in a manner that: (1) minimizes the need for further maintenance; (2) controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, postclosure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere; and (3) complies with the closure requirements of Part 265 (e.g., §265.197 for tank systems)	Provides relevant and appropriate general performance standard for closure of tank systems that have been used to manage RCRA hazardous waste.	RA	CP
RCRA 40 CFR 265.114 (Subpart G) R.61-79.265.114 (Subpart G)	<u>Closure of HWMFs: Disposal or Decontamination of Equipment, Structures, and Soils</u> - During partial and final closure periods, all contaminated equipment, structures, and soils must be properly disposed of or decontaminated, unless otherwise specified (e.g., under §265.197 for tank systems). By removing any hazardous wastes or hazardous constituents during partial or final closure, the owner/operator may become a generator of hazardous waste and must handle that waste in accordance with all applicable requirements of 40 CFR 262.	Provides relevant and appropriate standards for the disposition of structures or environmental media contaminated with hazardous waste or hazardous constituents.	RA	CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
RCRA 40 CFR 265.197 (Subpart J) R.61-79.265.197 (Subpart J)	<u>Tank System Closure and Postclosure Care</u> - At closure of a tank system, the owner/operator must remove or decontaminate all waste residues, contaminated containment system components, contaminated soils, and structures or equipment contaminated with waste, and manage them as hazardous waste (unless they no longer meet the definition of hazardous waste). If the owner/operator demonstrates that not all contaminated soils can be practicably removed or decontaminated, he must close the tank system and perform postclosure care in accordance with the closure and postclosure care requirements that apply to landfills (§265.310). Such a tank system is considered to be a landfill and must meet the requirements for landfills in §265, Subpart G.	Provides relevant and appropriate standards for the disposition of structures or environmental media contaminated with hazardous waste or hazardous constituents.	RA	CP
RCRA 40 CFR 265.310(a) (Subpart N) R.61-79.265.310(a) (Subpart N)	<u>Landfill Closure</u> - At final closure of the landfill or upon closure of any cell, the owner/operator must cover the landfill or cell with a final cover designed to: <ol style="list-style-type: none"> (1) provide long-term minimization of migration of liquids through the closed landfill, (2) function with minimal maintenance, (3) promote drainage and minimize erosion or abrasion of the cover, (4) accommodate settling and subsidence so that the cover's integrity is maintained, and (5) have permeability less than or equal to the permeability of any bottom liner system or natural subsoils present. 	Provides relevant and appropriate standards for the closure of HWMFs from which hazardous waste or hazardous constituents cannot be removed at the time of closure.	RA	CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
RCRA 40 CFR 265.310(b) (Subpart N) R.61-79.265.310(b) (Subpart N)	<p><u>Landfill Postclosure Care</u> - After final closure, the owner/operator is also required to comply with postclosure care requirements in §265.117-120 and:</p> <ol style="list-style-type: none"> (1) maintain the integrity and effectiveness of the final cover (2) continue to operate the leachate collection and removal system until leachate is no longer detected (3) maintain and monitor the leak detection system (4) maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of §265 Subpart F (5) prevent and runoff from eroding or otherwise damaging the final cover (6) protect and maintain surveyed benchmarks. 	Provides relevant and appropriate standards for the postclosure care and monitoring of HWMFs from which hazardous waste or hazardous constituents cannot be removed at the time of closure.	RA	CP
RCRA 40 CFR 264 (Subpart F) R.61-79.264 (Subpart F)	<p><u>Releases from Solid Waste Management Units</u> - Subpart F requires: (a) for all solid waste management units at facilities seeking a RCRA permit, corrective action as necessary to protect human health and the environment for all releases of hazardous waste or hazardous constituents, and (b) for surface impoundments, waste piles, land treatment units, and landfills that have received hazardous waste after July 26, 1982, establishment of a groundwater protection standard, monitoring with respect to the standard, and corrective action program if the standard is exceeded.</p>	Potentially relevant and appropriate only with respect to establishing a performance objective for groundwater protection.	RA	CP
RCRA 40 CFR 264.92 (Subpart F)	<p><u>Groundwater Protection Standard</u> - The owner/operator must comply with conditions specified in the facility's permit that are designed to ensure that hazardous constituents under §264.93 detected in the groundwater from a regulated unit do not exceed the concentration limits under §264.94 in the uppermost aquifer underlying the waste management area beyond the point of compliance under §264.95 during the compliance period under §264.96. SCDHEC will establish the groundwater protection standard in the facility permit when hazardous constituents have been detected in the groundwater.</p>	Potentially relevant and appropriate only with respect to establishing a performance objective for groundwater protection.	RA	CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
RCRA 40 CFR 264.93 (Subpart F) R.61-79.264.93 (Subpart F)	<p><u>Hazardous Constituents</u> - Hazardous constituents are those constituents identified in Appendix VIII of R.61-79.261 that have been detected in groundwater in the uppermost aquifer underlying a regulated unit and that are reasonably expected to be in or derived from waste contained in a regulated unit, unless SCDHEC has granted an exclusion of a constituent or constituents under paragraph (b) of this section.</p> <p>Paragraph (b) allows for the exclusion of an Appendix VIII constituent from the groundwater protection standard if the owner/operator can demonstrate that the constituent is not capable of posing a substantial present or potential hazard to human health or the environment. Criteria to be considered in such demonstrations or set forth in paragraph (b) and include assessing potential adverse effects on groundwater quality and hydraulically connected surface waters.</p>	Potentially relevant and appropriate only with respect to establishing a performance objective for groundwater protection.	RA	CP
RCRA 40 CFR 264.94 (Subpart F) R.61-79.264.94 (Subpart F)	<p><u>Concentration Limits</u> - The concentration of a hazardous constituent must not exceed:</p> <ol style="list-style-type: none"> (1) the background level of that constituent in the groundwater at the time the limit is specified in the permit; or (2) must not exceed the respective MCL value for that constituent if the background level is below the MCL level; or (3) must not exceed an ACL established by the SCDHEC under paragraph (b). <p>Paragraph (b) establishes criteria for establishing an ACL. The owner operator must demonstrate that the constituent will not pose a substantial threat to human health or the environment as long as the ACL is not exceeded.</p>	Potentially relevant and appropriate only with respect to establishing a performance objective for groundwater protection.	RA	CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
RCRA 40 CFR 264.95 (Subpart F) R.61-79.264.95 (Subpart F)	<p><u>Point of Compliance</u> - The owner/operator must specify the point of compliance at which the groundwater protection standard of §264.92 applies and at which groundwater monitoring must be performed. The point of compliance is a vertical surface located at the hydraulically downgradient limit of the waste management area that extends down into the uppermost aquifer underlying the regulated unit(s).</p> <p>The waste management area is the limit, projected in the horizontal plane, of the area on which waste will be placed during the active life of the regulated unit, including horizontal space taken up by any liner, dike, or other barrier to contain waste in a regulated unit. If the facility contains more than one regulated unit, the waste management area is described by an imaginary line circumscribing the several regulated units.</p>	Potentially relevant and appropriate only with respect to establishing a performance objective for groundwater protection.	RA	CP
RCRA 40 CFR 264.96 (Subpart F) R.61-79.264.96 (Subpart F)	<p><u>Compliance Period</u> - The owner/operator will specify the compliance period during which the groundwater protection standard of §264.92 applies. The compliance period is the number of years equal to the active life of the waste management area (including any waste management activity prior to permitting, and the closure period). If the owner/operator is engaged in a corrective action program at the end of the compliance period, the period is extended until the owner/operator can demonstrate that the groundwater protection standard of §264.92 has not been exceeded for a period of three consecutive years.</p>	Potentially relevant and appropriate only with respect to establishing a performance objective for groundwater protection.	RA	CP
RCRA Section 3004(c)	<p><u>Liquids in Landfills</u> - The placement of bulk or noncontainerized liquid hazardous waste or free liquids contained in hazardous waste (whether or not absorbents have been added) in any landfill is prohibited. Disposal in landfills of liquids that have been absorbed in materials that biodegrade or that release liquids when compressed as might occur during routine landfill operations is also prohibited.</p>	Relevant and appropriate to determining stabilization requirements for any free liquids that are disposed in the course of the HLW tank closure activities.	RA	CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
RCRA Section 3004(o)	<u>Minimum Technology Requirements</u> - The design of any new or replacement landfill or surface impoundment unit, or lateral expansion to a landfill or surface impoundment unit shall include two or more liners and a leachate collection system (for landfills) between such liners.	May be relevant and appropriate to hazardous waste disposal that occurs outside the boundaries of an existing unit.	RA	CP
AEA Regulation 61-63, RHA 7.14	<u>Postclosure Observation and Maintenance</u> - The licensee shall observe, monitor, and carry out necessary maintenance and repairs at the disposal site until the site closure is complete and the license is transferred by the Department in accordance with 7.15. Responsibility for the disposal site must be maintained by the licensee for 5 years. A shorter or longer time period for postclosure observation and maintenance may be established and approved as part of the site closure plan, based on site-specific conditions.	SC state regulation that, while not directly applicable to HLW tank closure, would be relevant and appropriate because they are well suited for use as indicators of protection of human health and the environment.	RA	CP
AEA Regulation 61-63, RHA 7.18	<u>Protection of the General Population from Releases of Radioactivity</u> - Concentration of radioactive material which may be released to the general environment in groundwater, surface water, air, soil, plant, or animals shall not result in an annual dose exceeding an equivalent of 25 millirem (0.25 mSv) to the whole body, 75 millirem (0.75 mSv) to the thyroid, and 25 millirem (0.25 mSv) to any other organ of any member of the public. Reasonable effort should be made to maintain releases of radioactivity in effluent to the general environment as low as is reasonably achievable.		RA	CP
AEA Regulation 61-63, RHA 7.19	<u>Protection of Individuals from Inadvertent Intrusion</u> - Design, operation, and closure of the land disposal facility shall ensure protection of any individual inadvertently intruding into the disposal site and occupying the site or contacting the waste at any time after active institutional controls over the disposal site are removed.		RA	CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
AEA Regulation 61-63, RHA 7.21	<u>Stability of the Disposal Site After Closure</u> - The disposal facility shall be sited, designed, used, operated, and closed to achieve long-term stability of the disposal site and to eliminate, to the extent practicable, the need for ongoing active maintenance of the disposal site following closure so that only surveillance, monitoring, or minor custodial care are required.		RA	CP
AEA 40 CFR 191.3(a)	<u>Dose Limits</u> - Management and storage of spent nuclear fuel or high-level or transuranic radioactive wastes at all facilities regulated by the Nuclear Regulatory Commission or by Agreement States shall be conducted in such a manner as to provide reasonable assurance that the combined annual dose equivalent to any member of the public in the general environment resulting from: discharges of radioactive material and direct radiation from such management and storage and all operations covered by Part 190; shall not exceed 25 mrem to the whole body, 75 mrem to the thyroid, and 25 mrem to any other critical organ.	EPA Federal regulations that would be applicable to any waste associated with HLW tank closure that is considered high-level waste. For waste that is not considered high-level waste, these requirements, while not directly applicable, would be relevant and appropriate because they are well suited for use as indicators of protection of human health and the environment.	RA	CP
AEA 40 CFR 191.3(b)	<u>Dose Limits</u> - Management and storage of spent nuclear fuel or high-level or transuranic radioactive wastes at all facilities for the disposal of such fuel or waste that are operated by the Department of Energy and that are not regulated by the Nuclear Regulatory Commission or Agreement States shall be conducted in such a manner as to provide reasonable assurance that the combined annual dose equivalent to any member of the public in the general environment resulting from discharges of radioactive material and direct radiation from such management and storage shall not exceed 25 mrem to the whole body and 75 mrem to any critical organ.		RA	CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
AEA 40 CFR 191.13(a)	<u>Containment Requirements</u> - Disposal systems for spent nuclear fuel or high-level or transuranic radioactive wastes shall be designed to provide a reasonable expectation, based upon performance assessments, that the cumulative releases of radionuclides to the accessible environment for 10,000 years after disposal from all significant processes and events that may affect the disposal system shall have a likelihood of less than one chance in 10 of exceeding the quantities calculated according to Table 1 (Appendix A); and have a likelihood of less than one chance in 1,000 of exceeding ten times the quantities calculated according to Table 1 (Appendix A).		RA	CP
AEA 40 CFR 191.15	<u>Dose Limits</u> - (a) Disposal systems for waste and any associated radioactive material shall be designed to provide a reasonable expectation that, for 10,000 years after disposal, undisturbed performance of the disposal system shall not cause the annual committed effective dose, received through all potential pathways from the disposal system, to any member of the public in the accessible environment, to exceed 15 mrem. (b) Annual committed effective dose shall be calculated in accordance with Appendix B of this part.		RA	CP
AEA 40 CFR 191.24	<u>Disposal Standards</u> - Disposal systems for waste and any associated radioactive material shall be designed to provide a reasonable expectation that 10,000 years of undisturbed performance after disposal shall not cause the levels of radioactivity in any underground source of drinking water, in the accessible environment, to exceed the limits specified in 40 CFR part 141 as they exist on January 19, 1994.		RA	CP
AEA 10 CFR 61.40 (Subpart C)	Land disposal facilities must be sited, designed, operated, closed, and controlled after closure so that reasonable assurance exists that exposures to humans are within limits established in the performance objectives in §§61.41 through 61.44.	NRC Federal regulations that, while not directly applicable to HLW tank closure, would be relevant and appropriate because they are well suited for use as indicators of protection of human health and the environment.	RA	CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
AEA 10 CFR 61.41 (Subpart C)	<p><u>Protection of the general population from releases of radioactivity</u> - Concentrations of radioactive material which may be released to the general environment in groundwater, surface water, air, soil, plants, or animals must not result in an annual effective dose exceeding an equivalent of :</p> <p>25 mrem whole body 75 mrem thyroid 25 mrem any other organ</p> <p>Reasonable effort should be made to maintain releases of radioactivity in effluents to the general environment as low as is reasonable achievable.</p>		RA	CP
AEA 10 CFR 61.42 (Subpart C)	<p><u>Protection of individuals from inadvertent intrusion</u> - Design, operation, and closure of the land disposal facility must ensure protection of any individual inadvertently intruding into the disposal site and occupying the site or contacting the waste at any time after active institutional controls over the disposal site are removed.</p>		RA	CP
AEA 10 CFR 61.43 (Subpart C)	<p><u>Protection of individuals during operations</u> - Operations at the land disposal facility must be conducted in compliance with the standards for radiation protection set out in Part 20 of this chapter, except for releases of radioactivity in effluents from the land disposal facility, which shall be governed by §61.41 of this part. Every reasonable effort shall be made to maintain radiation exposures as low as reasonably achievable.</p>		RA	CP
AEA 10 CFR 61.44 (Subpart C)	<p><u>Stability of the disposal site after closure</u> - The disposal facility must be sited, designed, used, operated and closed to achieve long-term stability of the disposal site and to eliminate to the extent practicable the need for ongoing active maintenance of the disposal site following closure so that only surveillance, monitoring, or minor custodial care are required.</p>		RA	CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
AEA 10 CFR 61.52(a)(6)	<u>Near surface disposal facility operation and disposal site closure</u> - Wastes must be placed and covered in a manner that limits the radiation dose rate at the surface of the cover to levels that at a minimum will permit the licensee to comply with all provisions of §20.105 of this chapter at the time the license is transferred pursuant to §61.30 of this part.		RA	CP
AEA 10 CFR 61.55(a)(2)(iv)	<u>Classification of waste for near surface disposal</u> - Waste that is not generally acceptable for near-surface disposal is waste for which waste form and disposal methods must be different, and in general more stringent, than those specified for Class C waste. In the absence of specific requirements in this part, proposals for disposal of this waste may be submitted to the Commission for approval, pursuant to §61.58 of this part.		RA	CP
AEA 61 10 CFR 61.58	<u>Alternative requirements for waste classification and characteristics</u> - The Commission may, upon request or on its own initiative, authorize other provisions for the classification and characteristics of waste on a special basis if after evaluation of the specific characteristics of the waste, disposal site, and method of disposal, it finds reasonable assurance of compliance with the performance objectives in Subpart C of this part.		RA	CP
CERCLA "Risk Assessment Guidance for Superfund (RAGS): Volume I - Human Health Evaluation Manual (HHEM) (Part A)", Interim Final, Dec. 1989, EPA/540/1-89/002		To be considered as guidance for risk assessments conducted at hazardous waste sites.	TBC	CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
CERCLA "RAGS/HHEM (Part B), Development of Risk- Based Preliminary Remediation Goals", Interim, Dec, 1991, EPA/540/R-92/003		To be considered as guidance for risk assessments conducted at hazardous waste sites.	TBC	CP
CERCLA "RAGS/HHEM (Part C), Risk Evaluation of Remedial Alternatives", Interim, Dec. 1991, EPA/540/R- 92/004		To be considered as guidance for risk assessments conducted at hazardous waste sites.	TBC	CP
CERCLA RAGS: Volume II - Environmental Evaluation Manual, Interim Final, March 1989, EPA/540/1-89/001		To be considered as guidance for risk assessments conducted at hazardous waste sites.	TBC	CP
CERCLA "Supplemental Guidance to RAGS: Region 4 Bulletins", Human Health Risk Assessment, Bulletins 1-5 November 1995	Region 4 clarifications and interpretations supplementing EPA-wide guidance (RAGS) for risk assessments at hazardous waste sites.	EPA Region 4 bulletins intended as guidance to all risk assessors preparing human health assessments for CERCLA NPL sites and federal sites in the region. To be considered as guidance for risk assessments conducted for other non-CERCLA remedial actions, such as the HLW tank closures.	TBC	CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
<p>CERCLA Policy on Decommissioning of Department of Energy Facilities under the Comprehensive Environmental Response, Compensation, and Liability Act</p>	<p>The Policy, dated May 22, 1995, establishes a decommissioning framework which presumes that DOE's decommissioning projects will be conducted as non-time critical removal actions under CERCLA. Non-time critical removal actions are defined in the NCP as removals with a planning horizon of 6 months or more. The Policy concludes that non-time critical removals are the appropriate CERCLA action for decommissioning projects for the following reasons:</p> <ol style="list-style-type: none"> (1) The alternative approaches available to conduct decommissioning projects typically are clear and very limited, a situation that usually will eliminate the need for more detailed analysis of alternatives required for remedial action. (2) The requirements for non-time critical removal actions provide greater flexibility to develop decommissioning plans that are appropriate for the circumstances presented. (3) Non-time critical removal actions usually will provide benefits to worker safety, public health, and the environment more rapidly and cost-effectively than remedial action. <p>Under §300.415(b)(1), the lead agency (DOE is the lead agency at SRS) shall determine if there is a threat to public health or welfare or the environment, and if so take any appropriate removal action to abate, prevent, minimize, stabilize, mitigate, or eliminate the release or threat of release. §300.415(b)(2) of the NCP sets forth criteria for determining the appropriateness of a removal action which include: "(iii) Hazardous substances of pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release."</p>	<p>Appropriate to the extent activities associated with HLW tank closure constitute final decommissioning of the subject facilities.</p>	<p>TBC</p>	<p>CP</p>

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
Decommissioning Handbook, DOE/EM-0142P U.S. Department of Energy Office of Environmental Restoration March 1994	Technical guidance for the decommissioning of nuclear facilities, including removal of radioactive and hazardous materials to levels protective of human health and the environment. Chapter 13 identifies standards for air, surface water, and groundwater quality during decommissioning including the National Ambient Air Water Quality Standards, DOE Order 5400.5, National Emissions Standards for Hazardous Air Pollutants, and Safe Drinking Water Act maximum contaminant levels.	Appropriate to the extent activities associated with HLW tank closure constitute final decommissioning of the subject facilities.	TBC	CP
Ambient Water Quality Criteria (AWQC)	EPA's AWQC for protection of freshwater organisms will be preferentially used to judge ecological impacts to aquatic resources. Other resources will be used for chemicals without AWQC.	AWQC provides the most appropriate criteria for judging ecological impacts.	TBC	CP
AEA 40 CFR 193.13(a) (Proposed)	<u>Standards for Disposal</u> - Disposal systems for low-level radioactive waste shall be designed to provide a reasonable expectation that [OPTION 1. "within 1,000 years of disposal, no member of the public shall receive,"] or [OPTION 2. "the highest projected dose following disposal and received through all pathways from the disposal system will not exceed,"] or [OPTION 3. "no member of the public shall receive, through all pathways from the disposal system, during a period following disposal as determined by the implementing agency,"] an annual committed effective dose of more than 150 microsieverts (15 mrem).	Proposed EPA Federal regulation that, when promulgated, will be applicable to activities involving disposal of low-level radioactive waste. While not directly applicable to HLW tank closure, these requirements would be relevant and appropriate because they are well suited for use as indicators of protection of human health and the environment.	TBC	CP
AEA 40 CFR 193.24(a) (Proposed)	<u>Standards for Protection of Underground Sources of Drinking Water</u> - Disposal systems for low-level radioactive waste shall be designed to provide a reasonable expectation that the levels of radioactivity from the disposal system in any underground source of drinking water will not exceed [OPTION 1. "the MCLs, as they exist on the effective date of this subpart, regardless of pre-existing contamination"] or [OPTION 2. "up to the MCLs, as they exist on the effective date of this subpart, if the pre-existing contamination is below the MCLs and permit up to one additional MCL if the pre-existing contamination is above the MCLs.]"		TBC	CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
AEA 10 CFR 834.301(a) (Proposed)	<p><u>Release of Property Containing Residual Radioactive Material</u> - DOE property or personal property containing residual radioactive material shall not be released from DOE control unless: (1) the release of property is in compliance with <u>Authorized Limits</u> (§834.301(b)) and <u>Supplemental Limits</u> (§834.301(d)) for concentrations of residual radioactive material on property surfaces or interior; (2) the property is evaluated and appropriately surveyed to identify and characterize contamination within the property and removable radioactive material and total radioactive material on property surfaces (including contamination present on and under any coating); and (3) documentation, in a Department-approved format, is completed that:</p> <p>(i) describes the property, (ii) describes the radiological history of the property, (iii) states the criteria for release of the property and the bases for the criteria which have been approved by the Department and coordinated with appropriate State and Federal organizations, (iv) describes any restrictions on use or disposition of the property and how the implementation of the restrictions will be ensured, (v) describes the survey of the property, including the date, the identity of the surveyor, the types and identification numbers of the instruments used, and the results of the survey, (vi) indicates the quantity and disposition of the waste resulting from any decontamination effort, and (vii) identifies the recipient of the property, its destination, or its disposition; and (4) appropriately notifies the recipient or owner of the property of the results of the survey of the property, including the availability of documentation required by §834.301(a)(3).</p>	Proposed DOE Federal regulation that, when promulgated, will be applicable to SRS HLW tank operations, including closure. (When promulgated, this rule will replace DOE Order 5400.5.)	TBC	CP
AEA 10 CFR 834.301(b) (Proposed)	<p><u>Release of Property Containing Residual Radioactive Material</u> - The Authorized Limits shall be derived in accordance with the ALARA process requirements, documented, approved by the Department, and made part of the public record.</p>	Proposed DOE Federal regulation that, when promulgated, will be applicable to SRS HLW tank operations, including closure. (When promulgated, this rule will replace DOE Order 5400.5.)	TBC	CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
AEA 10 CFR 834.302(a) (Proposed)	<u>Soil</u> - Authorized Limits and Supplemental Limits for all radionuclides in soil shall be derived using approved models in accordance with the requirements of this subpart and selected on the basis of the ALARA process.	Proposed DOE Federal regulation that, when promulgated, will be applicable to SRS HLW tank operations, including closure. (When promulgated, this rule will replace DOE Order 5400.5.)	TBC	CP
AEA 10 CFR 834.302(b) (Proposed)	<u>Soil</u> - Authorized Limits for radon-226 and radon-228 shall be selected consistent with §834.302(a) and shall not exceed 5 pCi/gram (0.2 Bq/gram) in excess of background levels, averaged over 100 m ² , in the first 15 cm depth of the surface layer of soil; and 15 pCi/gram (0.56 Bq/gram) in excess of background levels, averaged over any subsequent 15 cm subsurface layer of soil.	Proposed DOE Federal regulation that, when promulgated, will be applicable to SRS HLW tank operations, including closure. (When promulgated, this rule will replace DOE Order 5400.5.)	TBC	CP
AEA 10 CFR 834.303(a) (Proposed)	<u>Radon</u> - Remedial actions shall be conducted on habitable and occupied structures with the objective of reducing residual radioactive material levels such that the annual average radon-222 decay product concentration will not exceed 0.02 WL (or 4 pCi/L radon, when 0.02 WL is approximately equivalent to 4 pCi/L assuming that the radon decay products are at 50 percent of equilibrium), including background, in the structure.	Proposed DOE Federal regulation that, when promulgated, will be applicable to SRS HLW tank operations, including closure. (When promulgated, this rule will replace DOE Order 5400.5.)	TBC	CP
AEA 10 CFR 834.303(b) (Proposed)	<u>Radon</u> - If residual radioactive material cannot be reduced, practicably, to levels that reduce radon decay product concentration in a habitable structure to 0.02 WL, remedial measures, including active controls, shall be employed to reduce concentrations to 0.03 WL, or less. In any case, the radon decay product concentration shall not exceed 0.03 WL, including background, in such structures as a result of residual radioactive material.	Proposed DOE Federal regulation that, when promulgated, will be applicable to SRS HLW tank operations, including closure. (When promulgated, this rule will replace DOE Order 5400.5.)	TBC	CP
AEA 10 CFR 834.304 (Proposed)	<u>Structures</u> - Authorized Limits and Supplemental Limits for residual radionuclides in or on structures at specific DOE properties shall be (a) established in accordance with the requirements of this subpart, (b) consistent with Department guidelines or derived using DOE-approved models, and (c) selected on the basis of the ALARA process.	Proposed DOE Federal regulation that, when promulgated, will be applicable to SRS HLW tank operations, including closure. (When promulgated, this rule will replace DOE Order 5400.5.)	TBC	CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
AEA 10 CFR 834.306(c) (Proposed)	<u>Control and Disposition of Residual Radioactive Material</u> - A property may be maintained under an interim management arrangement when the residual radioactive material exceeds authorized limits developed for unrestricted release if: (1) the residual radioactive material is in locations which are not readily accessible to members of the public; (2) the residual contamination would be unreasonably costly to remove; and (3) when needed, administrative controls are instituted by the operating organization to protect members of the public.	Proposed DOE Federal regulation that, when promulgated, will be applicable to SRS HLW tank operations, including closure. (When promulgated, this rule will replace DOE Order 5400.5.)	TBC	CP
AEA 10 CFR 834.306(d) (Proposed)	<u>Control and Disposition of Residual Radioactive Material</u> - (1) Appropriate administrative and physical controls for the management of storage or disposal activities shall be developed, documented, and implemented to limit access, use, and removal of material contaminated with residual radioactive material. (2) Controls shall be designed such that concentrations of radionuclides in the groundwater and residual radioactive material will not cause the requirements of this part to be exceeded. (3) Control and stabilization features for the interim management and storage of residual radioactive material shall be designed to meet the applicable dose limits and dose constraints selected through application of the ALARA process for 25 years at a minimum, and 50 years if practicable to do so. (4) The controls shall be designed to limit radon concentrations in the atmosphere above facilities to levels that will not exceed: (i) an annual average radon-220 and radon-222 concentration of 0.5 pCi (0.02 Bq)/L, above background, at any offsite location where persons are likely to reside or work; (ii) flux rates from the storage of radon-producing wastes of 20 pCi (0.7 Bq)/(m ² sec), averaged over the area containing the radon-generating material.	Proposed DOE Federal regulation that, when promulgated, will be applicable to SRS HLW tank operations, including closure. (When promulgated, this rule will replace DOE Order 5400.5.)	TBC	CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
AEA 10 CFR 834.306(e) (Proposed)	<p><u>Control and Disposition of Residual Radioactive Material</u> -</p> <p>(1) Long-term management of residual radioactive material in residue and waste from a DOE activity shall be in accordance with this section and DOE approved plans.</p> <p>(2) Long-term management of the residue and waste shall be conducted in a manner that will: (i) comply with dose limits (§834.201, §834.214, and §834.221); (ii) comply with the ALARA requirements of this part (§834.104); (iii) comply with the Ground-Water Protection Management Plan (§834.215); (iv) limit radon-222 emanation to the atmosphere from radon-222 generating waste to less than an annual average release rate of 20 pCi (0.7 Bq)/(m² sec) averaged over the surface area overlying the waste, including the covering or other confinement structures; (v) limit radon-220 emanation to the atmosphere from waste to an annual average release rate of 20 pCi (0.7 Bq)/(m² sec), and (vi) limit increases in the annual average radon-222 or radon-220 concentration at or above any location outside the boundary of the controlled area to 0.5 pCi (0.02 Bq)/L. (3) Control and stabilization features shall be designed to: (i) be effective for 1,000 years, to the extent reasonably achievable, and, in any case, for at least 200 years; (ii) minimize unauthorized public access or use that might breach containment of waste; and (iii) provide for proper conditioning or barriers to control the generation and escape of biogenic gases from potentially biodegradable contaminated waste or residue to ensure that this material will not cause the emission limits or dose limits to be exceeded and biodegradation within the facility will not result in premature structural failure. (4) In the development of controls and waste management plans, where appropriate, the impacts of alternative disposal modes shall be evaluated beyond the 1,000-year design requirement, to 10,000 years. (5) For wastes containing a high specific activity (e.g., ≥1 nCi/g) of radium or thorium, alternative disposal methods, such as deep land disposal, protective covers (e.g., riprap), concrete vaults, or geologic repositories that provide additional protection from possible inadvertent intrusion shall be evaluated and employed if justified by potential risk considerations.</p>	Proposed DOE Federal regulation that, when promulgated, will be applicable to SRS HLW tank operations, including closure. (When promulgated, this rule will replace DOE Order 5400.5.)	TBC	CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
AEA 10 CFR 20.1404(a) (Proposed)	<u>Radiological Criteria for Unrestricted Release:</u> A site will be considered acceptable for unrestricted use if: The residual radioactivity that is distinguishable from background radiation results in a TEDE to the average member of the critical group that does not exceed 15 mrem (0.15 mSv) per year; and	Proposed NRC Federal regulation that, when promulgated, will provide requirements for NRC licensee activities resulting in residual radioactive material, similar to SRS HLW tank closure.	TBC	CP
AEA 10 CFR 20.1404(b) (Proposed)	<u>Radiological Criteria for Unrestricted Release:</u> A site will be considered acceptable for unrestricted use if: The residual radioactivity has been reduced to levels that are as low as reasonable achievable.		TBC	CP
AEA 10 CFR 20.1405(a) (Proposed)	<u>Criteria for License Termination Under Restricted Conditions:</u> A site will be considered acceptable for license termination under restricted conditions if: The licensee can demonstrate that further reduction in residual radioactivity necessary to comply with the provisions of §20.1404 are not technically achievable, would be prohibitively expensive, or would result in net public or environmental harm.		TBC	CP
AEA 10 CFR 20.1405(b) (Proposed)	<u>Criteria for License Termination Under Restricted Conditions:</u> A site will be considered acceptable for license termination under restricted conditions if: The licensee has made provisions for institutional controls that provide reasonable assurances that the TEDE from residual radioactivity distinguishable from background to the average member of the critical group will not exceed 15 mrem (0.15 mSv) TEDE per year. Institutional controls must be enforceable by a responsible government entity or in a court of law in response to suits by affected parties.		TBC	CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
AEA 10 CFR 20.1405(d) (Proposed)	<u>Criteria for License Termination Under Restricted Conditions:</u> A site will be considered acceptable for license termination under restricted conditions if: Residual radioactivity at the site has been reduced so that if the institutional controls were no longer in effect, there is reasonable assurance that the TEDE from residual radioactivity distinguishable from background to the average member of the critical group would not exceed 100 mrem (1 mSv) per year, and is as low as reasonably achievable. Calculations used to show compliance with this provision may not assume any benefit from earthen cover or other earthen barriers unless specifically authorized by the Commission.		TBC	CP
AEA 40 CFR 196.04(a) (Proposed)	<u>Environmental Standards for Site Remediation -</u> Remediation of sites shall be conducted to provide a reasonable expectation that, for 10,000 years after completion of the remedial action, radionuclide concentrations in excess of natural background levels shall not exceed those amounts that could cause any member of the public to receive, through all potential pathways under a residential land use scenario, an annual committed effective dose of 15 mrem/yr (0.15 mSv/yr).	Proposed EPA Federal regulation that, when promulgated, will be applicable to activities resulting in residual radioactive material, including SRS HLW tank closure.	TBC	CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
AEA 40 CFR 196.04(c) (Proposed)	<u>Environmental Standards for Site Remediation</u> - In the event that remediation of a site will not meet the conditions of §196.04(a), the implementing agency shall: (1) remediate the site to provide a reasonable expectation that, for 10,000 years after completion of the remedial action, radionuclide concentrations in excess of natural background levels shall not exceed those concentrations that could cause any member of the public to receive, through all potential pathways under the conditions of the selected active control measures, an annual committed effective dose of 15 mrem/yr (0.015 mSv/yr); and (2) remediate the site to provide a reasonable expectation that, for 10,000 years after completion of the remedial action in the absence of active control measures, radionuclide concentrations in excess of natural background levels on the site shall not exceed those amounts that could cause any member of the public to receive, through all potential pathways under the conditions of residential land use, an annual committed effective dose that is less than 75 mrem/yr (0.075 mSv/yr).		TBC	CP
AEA 40 CFR 196.04(d) (Proposed)	<u>Environmental Standards for Site Remediation</u> - All existing and future structures on sites shall meet the guidelines of the EPA Radon Program.		TBC	CP
AEA 40 CFR 196.04(e) (Proposed)	<u>Environmental Standards for Site Remediation</u> - The implementing agency shall perform compliance assessments. Compliance assessments need not provide complete assurance that the requirements of §196.04 of this subpart will be met. Because of the long time period involved and the nature of the processes and events of interest, there may be substantial uncertainties in projective remedial action performance. Proof of the future annual committed effective dose from radioactive concentrations is not to be had in the ordinary sense of the word in situations that deal with much shorter time frames. Instead, what is required is a reasonable expectation, on the basis of the record before the implementing agency, that compliance with §196.04 will be achieved.		TBC	CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
AEA 40 CFR 196.23(a) (Proposed)	<u>Environmental Standards for Groundwater Protection</u> - Remediation of sites shall be conducted so as to provide a reasonable expectation that 10,000 years after completion of the remedial action, onsite radioactive material shall not cause the levels of radioactivity in any groundwater that is a current or potential source of drinking water, in the accessible environment, to exceed the limits specified in 40 CFR part 141.		TBC	CP
AEA 40 CFR 196.23(b) (Proposed)	<u>Environmental Standards for Groundwater Protection</u> - Compliance assessments need not provide complete assurance that the requirements of §196.23 of this subpart will be met. Because of the long time period involved and the nature of the processes and events of interest, there will inevitable be substantial uncertainties in projecting remedial action performance. Proof of the future levels of radioactivity in any groundwater that is a current or potential source of drinking water, in the accessible environment, is not to be had in the ordinary sense of the word in situations that deal with much shorter time frames. Instead, what is required is a reasonable expectation, on the basis of the record before the implementing agency, that compliance with §196.23 will be achieved.		TBC	CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
AEA 40 CFR 196.23(c) (Proposed)	<u>Environmental Standards for Groundwater Protection</u> - Compliance with §196.23(a) of this subpart will not be required, if the implementing agency determines compliance to be technically impracticable from an engineering perspective. In this situation, the implementing agencies shall: (1) select active control measures that ensure members of the public will not be exposed to groundwater that is drinking water, in which the levels of radioactivity exceed the limits specified in 40 CFR part 141; (2) select and perform remedial actions that limit to the greatest extent, contamination of groundwater that is not already contaminated, as is reasonable under the circumstances; (3) select and perform remedial actions that restore to the greatest extent, groundwater that is already contaminated, as is reasonable under the circumstances; (4) comply with the public notice and comment requirements of §196.03(a) of subpart A; and (5) comply with the periodic verification requirements of §196.24 of this subpart.		TBC	CP
AEA EPA Proposed Federal Guidance for Protection of the Public from Radiation, December 23, 1994	<u>Recommendation 1</u> - There should be no exposure of the general public to ionizing radiation unless it is justified by the expectation of an overall benefit from the activity causing the exposure. Justified activities may be allowed, provided exposure of the general public is limited in accordance with these recommendations.	Proposed EPA Federal guidance that, when finalized, will apply to activities involving potential radiation exposure of members of the public, including SRS HLW tank closure.	TBC	CP
AEA EPA Proposed Federal Guidance for Protection of the Public from Radiation	<u>Recommendation 2</u> - A sustained effort should be made to ensure that doses to individuals and to populations are maintained as low as reasonable achievable.		TBC	CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
<p>AEA EPA Proposed Federal Guidance for Protection of the Public from Radiation</p>	<p><u>Recommendation 3</u> - The combined radiation doses incurred in any single year from all sources of exposure covered by these recommendations should not normally exceed a Radiation Protection Guide of 1 mSv (100 mrem) effective dose equivalent to an individual. The Radiation Protection Guide applies to the sum of the effective dose equivalent resulting from exposure to external sources of radiation during a year and the committed effective dose equivalent incurred from the intake of radionuclides during that year.</p> <p>The Radiation Protection Guide may not be reasonably achievable in some unusual situations. It may be exceeded temporarily in situations that are not activated to recur chronically and when Recommendations 1 and 2 are satisfied, provided that the radiation dose incurred in any year does not exceed 5 mSv (500 mrem) effective dose equivalent.</p> <p>Continued exposure of an individual over substantial portions of a lifetime at or near the level of the Radiation Protection Guide should be avoided.</p>		TBC	CP
<p>RCRA "Design and Construction of RCRA/CERCLA Final Covers", EPA/625/4-91/025, May 1991</p>	<p>EPA recommendations to be considered in the design of low hydraulic conductivity cover systems.</p>	<p>Relevant and appropriate to the design of a cover system if capping is performed as part of the HLW tank closure activities.</p>	TBC	CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
F & H-Area HLW Tank Farms Permit To Construct No. 17424-IW, 1/25/93	<p>Industrial Wastewater Permit to Construct the HLW Tank Farms as designed.</p> <ol style="list-style-type: none"> (1) The wastewater generated at this facility will be sent to the F/H ETF, precipitate slurry and sludge will be sent to the DWPF, and decontaminated salt solution will be sent to the Z-Area Saltstone Manufacturing and Disposal Facility. (2) There will be no discharge from this facility. (3) The effluent concentrations of those constituents the wastewater treatment system is designed to remove or reduce are as required by the receiving facilities. (4) The special conditions are identical to those listed above in the Permit To Operate the HLW Tank Farms 	Applicable to SRS HLW tank operations, including tank closure.	A	O

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
F & H-Area HLW Tank Farms Permit To Operate No. 17424-IW, 3/3/93	<p>Industrial Wastewater Permit to operate the HLW tank farms. Special conditions under this permit include the following:</p> <ol style="list-style-type: none"> (1) Develop and implement a Best Management Practices Plan. (2) No chemicals shall be added to the waste tanks which will alter the composition of the F/H ETF effluent from that which was evaluated for the NPDES permit. (3) The addition of new piping and chemical feed systems, even though related to the F/H Tanks Farm process, shall not be considered normal operation if the piping and/or feed systems are to be located outside the tank farm boundary. (4) Once waste removal begins on a tank with a leak or crack and the waste is removed to a level below the lowest known leak or crack, that level shall become the maximum operating level of the tank and shall not be exceeded unless the exceedance is a temporary result of the waste removal process. (5) Maintain a contingency plan or emergency procedures in place to respond to any known emergency situation with the potential to negatively impact human health and the environment. The plans and/or procedures shall be updated as necessary to include new information or changing conditions. 	Applicable to SRS HLW tanks operations, including tank closure.	A	O

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
RCRA SRS Approved Site Treatment Plan (STP) Consent Order 95-22-HW - DOE & DHEC, 8/5/95	<p>The Consent Order implements the SRS Site Treatment Plan to meet the DOE's mixed waste treatment requirements under the Federal Facility Compliance Act (FFCA).</p> <ol style="list-style-type: none"> (1) Annual update of inventory of all untreated mixed waste, the status of residuals for the treatment of mixed waste, an updated implementation schedule, projection of new mixed waste streams generated or to be generated onsite and proposed changes to future implementation schedules. (2) SRS shall submit, for DHEC approval, a request for a modification or revision to Volume I, of the Approved STP for any change unless the change requires notification only. (3) SRS shall submit requests for current federal fiscal year schedule modifications or revisions separate from the submission of the Annual Update. (4) Within 30 days of discovery, SRS shall notify DHEC in writing of new on-site generated mixed waste streams. Except as provided in Chapter 2 of Volume I of the Approved STP, within twelve (12) months of notification to DHEC of a new on-site mixed waste stream to be generated, SRS shall submit a treatment strategy in either a modification or revision request or an Annual Update. <p>The STP/CO includes requirements for the management of high level liquid waste (SR-W016 and SR-W017) and various low-level mixed wastes resulting from tank farm operations (e.g., SR-W072, supernate or sludge contaminated debris from High-Level Waste Operations).</p>	Applicable to LDR prohibited mixed waste management activities at SRS. Requirements applicable to newly generated wastes resulting from HLW tank closure or changes in the treatment method or schedule from existing mixed waste streams subject to the STP/CO.	A	O
FFCA NESHAP - DOE & EPA, 8/31/93	Agreement allows SRS to continue operations and at the same time upgrade facilities to come into compliance with the monitoring requirements of 40 CFR Part 61, Subpart H.	Applicable to SRS HLW tanks which may be evaluated as a NESHAP emission source.	A	O

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
CAA 40 CFR 61.92 (NESHAP)	<u>Standard</u> - Emissions of radionuclides to the ambient air from Department of Energy facilities shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 10 mrem/yr.	EPA Federal regulation that is applicable to all SRS operations, including HLW tank closure.	A	O

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b																																									
CAA SC R.61-62.5 Air Pollution Control Standard No. 2	<p><u>Ambient Air Quality Standard</u> - The following table constitutes the ambient air quality standards for the State of South Carolina. The analytical methods to be used will be those applicable Federal Reference Methods published in 40 CFR 50, Appendices A-H as revised July 1, 1986. In the case of fluorides either the double paper tape sampler methods (ASTM D-3266-79) or the sodium bicarbonate-coated glass tube and particulate filter method (ASTM D3268-78) may be used.</p> <table><tr><th>Pollutant</th><th>Measuring Interval</th><th>Standard (1)(2)</th></tr><tr><td rowspan="3">Sulfur Dioxide</td><td>3 hour</td><td>1300 g/m³ (4)</td></tr><tr><td>24 hours</td><td>365 g/m³ (4)</td></tr><tr><td>annual</td><td>80 g/m³</td></tr><tr><td>Total Suspended Particulates</td><td>Annual Geometric Mean</td><td>75 g/m³</td></tr><tr><td rowspan="2">PM₁₀</td><td>24 hours</td><td>150 g/m³ (3)</td></tr><tr><td>annual</td><td>50 g/m³ (3)</td></tr><tr><td rowspan="2">Carbon Monoxide</td><td>1 hour</td><td>40 mg/m³</td></tr><tr><td>8 hour</td><td>10 mg/m³</td></tr><tr><td>Ozone</td><td>1 hour</td><td>0.12 ppm (3)</td></tr><tr><td rowspan="4">Gaseous Fluorides (as HF)</td><td>12 hr. avg.</td><td>3.7 g/m³</td></tr><tr><td>24 hr. avg.</td><td>2.9 g/m³</td></tr><tr><td>1 wk. avg.</td><td>1.6 g/m³</td></tr><tr><td>1 mo. avg.</td><td>0.8 g/m³</td></tr><tr><td>Nitrogen Dioxide</td><td>annual</td><td>100 g/m³</td></tr><tr><td>Lead</td><td>Calendar Quarterly Mean</td><td>1.5 g/m³</td></tr></table>	Pollutant	Measuring Interval	Standard (1)(2)	Sulfur Dioxide	3 hour	1300 g/m ³ (4)	24 hours	365 g/m ³ (4)	annual	80 g/m ³	Total Suspended Particulates	Annual Geometric Mean	75 g/m ³	PM ₁₀	24 hours	150 g/m ³ (3)	annual	50 g/m ³ (3)	Carbon Monoxide	1 hour	40 mg/m ³	8 hour	10 mg/m ³	Ozone	1 hour	0.12 ppm (3)	Gaseous Fluorides (as HF)	12 hr. avg.	3.7 g/m ³	24 hr. avg.	2.9 g/m ³	1 wk. avg.	1.6 g/m ³	1 mo. avg.	0.8 g/m ³	Nitrogen Dioxide	annual	100 g/m ³	Lead	Calendar Quarterly Mean	1.5 g/m ³	SC standards which implement national primary and secondary ambient air quality standards. Standards are applicable to all SRS operations, including HLW tank closure, and provide standards for evaluation of criteria pollutant emissions and impacts.	A	O
Pollutant	Measuring Interval	Standard (1)(2)																																											
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Citation	Requirement/Guidance Summary	Rationale for Use	Require- ments/ Guidance Category ^a	Type ^b																																	
	(1) Arithmetic Average except in case of total suspended particulate matter. (2) At 25°C and 760 mm Hg. (3) Attainment determinations will be made based on the criteria contained in Appendices H and K, 40 CFR 50, July 1, 1987. (4) Not to be exceeded more than once a year.																																				
CAA SC R.61-62.5 Air Pollution Control Standard No. 8, Toxic Air Pollutants	<p><u>II. Toxic Air Emissions</u> - B. The allowable ambient air concentrations of a toxic air pollutant at the plant property line as determined by modeling under Part A shall be limited to the value listed in the following table.</p> <table><thead><tr><th>Chemical Name</th><th>Cas No.</th><th>Maximum Allowable Concentration (g/m³)*</th></tr></thead><tbody><tr><td colspan="3"><u>Category I: Low Toxicity</u></td></tr><tr><td colspan="3">None</td></tr><tr><td colspan="3"><u>Category II: Moderate Toxicity</u></td></tr><tr><td>Oxalic Acid</td><td>144627</td><td>10.00</td></tr><tr><td colspan="3"><u>Category III: High Toxicity</u></td></tr><tr><td>Chromium(+6) Compounds</td><td>None</td><td>2.50</td></tr><tr><td>Manganese Compounds</td><td>None</td><td>25.00</td></tr><tr><td>Mercury</td><td>7439976</td><td>0.25</td></tr><tr><td>Nickel</td><td>7440020</td><td>0.50</td></tr><tr><td>Selenium Compounds</td><td>None</td><td>1.00</td></tr></tbody></table> <p>*For the purpose of this standard, these values shall be rounded to the nearest hundredth of a g/m³. For example, a test or modeled value of 0.005 through 0.01 would be rounded to 0.01 but values less than 0.005 would be rounded to 0.00.</p>	Chemical Name	Cas No.	Maximum Allowable Concentration (g/m ³)*	<u>Category I: Low Toxicity</u>			None			<u>Category II: Moderate Toxicity</u>			Oxalic Acid	144627	10.00	<u>Category III: High Toxicity</u>			Chromium(+6) Compounds	None	2.50	Manganese Compounds	None	25.00	Mercury	7439976	0.25	Nickel	7440020	0.50	Selenium Compounds	None	1.00	SC Standards which implement Federal air toxics control program requirements. Standards are applicable to all SRS operations, including HLW tank closure, and provide standards for evaluation of toxic pollutant emissions and impact.	A	O
Chemical Name	Cas No.	Maximum Allowable Concentration (g/m ³)*																																			
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Selenium Compounds	None	1.00																																			

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
RCRA 40 CFR 262	<p><u>Standards Applicable to Generators of Hazardous Waste</u> - Generators of hazardous waste are required to do the following:</p> <ul style="list-style-type: none"> • Determine if the waste is hazardous waste and; identify requirements for management of hazardous waste as set forth in §§264, 265, and 268; obtain an EPA identification number (Subpart A) • Comply with manifest requirements for transport of hazardous waste offsite (Subpart B) • Comply with pre-transport requirements for hazardous waste packaging, labeling, marking, placarding, and accumulation; comply with storage facility requirements of §§264/265 and 270 if hazardous waste is stored for more than 90 days (Subpart C) • Comply with recordkeeping and reporting requirements for hazardous waste generation, offsite transport, treatment, storage, and disposal (Subpart D) 	Applicable to any hazardous waste generated as a result of SRS HLW tank closure activities. Hazardous wastes that are managed in wastewater treatment units (e.g., wastes transferred to other HLW tank systems) may be excluded from RCRA permitting and operating standards.	A	O
RCRA 40 CFR 268	<p><u>Land Disposal Restrictions</u> - Specifies standards to which hazardous waste must be treated prior to land disposal and prohibits storage of untreated hazardous waste except under specified conditions.</p>	<p>LDR applicable to land disposal of hazardous wastes:</p> <ul style="list-style-type: none"> • removed from HLW tanks as part of tank closure activities • generated as a result of tank closure activities • remaining in the HLW tanks above the "empty" tank limits 	A	O

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
<p>RCRA 40 CFR 268.40</p>	<p><u>Applicability of Treatment Standards</u> - A waste identified in the table "Treatment Standards for Hazardous Wastes" in this section may be land disposed only if it meets the requirements found in the table. For each waste, the table identifies one of three types of treatment requirements:</p> <ol style="list-style-type: none"> (1) all hazardous constituents in the waste or in the treatment residues must be at or below the levels found in the table ("total waste standards"); (2) the hazardous constituents in the extract of the wastes or the treatment residue must be at or below the levels found in the table ("waste extract standards"); or (3) the waste must be treated using the technology specified in the table ("technology standard"). <p>These standards are established for two types of waste: "wastewaters" which are generally wastes containing less than 1% by weight TOC and less than 1% by weight TSS and "nonwastewaters" (§268.2(d) and (f)).</p> <p>The table includes entries specific to certain mixed wastes:</p> <p>"Radioactive high level wastes generated during the reprocessing of fuel rods" (nonwastewaters only) that are D002 or D004-D011 hazardous wastes are subject to the HL VIT standard.</p> <p>"Radioactive lead solids" (nonwastewaters only) that are D008 hazardous wastes are subject to the MACRO standard.</p> <p>"Elemental mercury contaminated with radioactive materials" (nonwastewaters only) that are D009 hazardous wastes are subject to the AMLGM standard.</p>	<p>Applicable to land disposal of hazardous wastes which occurs as a result of HLW tank closure activities.</p>	<p>A</p>	<p>O</p>

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
	<p>In the Third Third rule, EPA indicated that the HL VIT standard would apply to the "high-level fraction of the mixed waste generated during the reprocessing of fuel rods" exhibiting the characteristics of corrosivity and toxicity for metals (see 55 FR 22627). Incidental wastes associated with HLW tank closure which are also mixed wastes would not require treatment by vitrification, but may nevertheless require treatment in accordance with the applicable LDR treatment standards for any hazardous characteristics, including standards for any underlying hazardous constituents.</p> <p>In addition to a specified technology or waste-specific concentration standard, wastes may also be subject to LDR treatment standards for underlying hazardous constituents set forth in §268.48. For example, a corrosive characteristic waste (D002) would need to be deactivated (i.e., rendered no longer corrosive) and treated to achieve the UTS concentration limits for any underlying hazardous constituents.</p>			
RCRA 40 CFR 268.45	<p><u>Treatment Standards for Hazardous Debris</u> - Hazardous debris may be treated in accordance with the waste-specific standards or, alternatively, the debris may be treated in accordance with the standards set forth in Table 1 of this section. The alternative standards for hazardous debris include extraction, destruction, and immobilization technologies. Debris that is treated using one of the specified extraction or destruction technologies, and which does not exhibit a hazardous waste characteristic, is no longer subject to regulation as hazardous waste. Debris that is treated using one of the specified immobilization technologies may be excluded (e.g., debris that, after immobilization, no longer exhibits the characteristic for which the debris was hazardous waste).</p>	Applicable to land disposal of hazardous wastes which occurs as a result of HLW tank closure activities.	A	O

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
RCRA 40 CFR 268.48	<u>Universal Treatment Standards</u> - Table UTS in this section identifies the hazardous constituents and their nonwastewater and wastewater treatment standard levels. For determining compliance with the treatment standards for underlying hazardous constituents as defined in §268.2(i), these constituent-specific treatment standards may not be exceeded.	Applicable to land disposal of hazardous wastes which occurs as a result of HLW tank closure activities.	A	O
RCRA 40 CFR 268.50	<u>Prohibitions on storage of restricted wastes</u> - Storage of hazardous wastes restricted from land disposal is prohibited unless such storage is in tanks, containers, or containment buildings solely for the purpose of accumulating such quantities of hazardous waste as necessary to facilitate proper recovery, treatment, or disposal.	Applicable to management of hazardous wastes generated as a result of SRS HLW tank closure activities.	A	O
RCRA Federal Facility Compliance Act of 1992 (FFCA Act) Pub. L. 102-386	Establishes requirements for the management of DOE mixed wastes subject to the RCRA land disposal restrictions prohibitions.	Applicable to management of mixed wastes generated as a result of SRS HLW tank closure activities.	A	O
AEA 10 CFR 834.101(a) (Proposed)	<u>Dose Limits</u> - A DOE activity shall be conducted in a manner such that the exposure of members of the public to ionizing radiation will: (1) comply with the ALARA program requirements in §834.104; and (2) not cause a TEDE greater than 100 mrem (1 mSv) in a year from all sources of ionizing radiation and exposure pathways, excepting: (i) dose from radon and its decay products (which is regulated separately); (ii) dose received by patients from medical sources of radiation used for diagnostic or therapeutic purposes, and by volunteers in medical research programs; (iii) dose from background radiation; and (iv) dose to workers which arise from DOE activities during the performance of work duties and which are regulated under 10 CFR part 835.	Proposed DOE Federal regulation that, when promulgated, will be applicable to SRS HLW tank operations, including closure. (When promulgated, this rule will replace DOE Order 5400.5.)	TBC	O

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
AEA 10 CFR 834.101(b) (Proposed)	<u>Dose Limits</u> - Upon request, the Department may authorize temporary dose limits for members of the public in excess of 100 mrem (1 mSv) in a year, but not in excess of 500 mrem (5 mSv). A request for an authorization for a temporary operation which could result in a higher dose level shall: (1) be submitted as soon as practicable when the need is recognized and, where possible, before the 100-mrem dose limit is exceeded; (2) contain: (i) a justification for the higher dose limit; (ii) a discussion of the alternatives considered; (iii) an ALARA evaluation; (iv) an estimate of how long the higher limit will be necessary; and (v) a description of what is being done to return to normal operations and to minimize doses to members of the public; and (3) be made promptly a matter of public record delineating the nature of the unusual operating condition, and the basis for the variance as documented per §834.101(b)(2).	Proposed DOE Federal regulation that, when promulgated, will be applicable to SRS HLW tank operations, including closure. (When promulgated, this rule will replace DOE Order 5400.5.)	TBC	O
AEA 10 CFR 834.201(a) (Proposed)	<u>Dose Limits</u> - A DOE activity shall be conducted in a manner such that the release of radioactive material to the atmosphere shall: (1) be evaluated using the ALARA process; (2) not cause any member of the public to receive a TEDE in excess of 10 mrem (0.1 mSv) in a year, excluding doses from radon-220 and radon-222 and their decay products and from background sources; (3) not cause annual radon-222 flux rates to exceed 20 pCi (0.7 Bq) (m ² sec) averaged over the surface area overlaying the waste, including the covering or other confinement structures, wherever radium-226 residues are accepted for storage or disposal; (4) not cause outdoor annual concentrations of radon-220 or radon-222 resulting from a facility where sources of radon are handled or processed to exceed 3 pCi (0.1 Bq)/L above background at the facility or at any location beyond the facility boundary which is accessible to the public; and (5) not cause an annual radon-220 or radon-222 average concentration to exceed 0.5 pCi (0.02 Bq)/L above background at any offsite location where people reside or work.	Proposed DOE Federal regulation that, when promulgated, will be applicable to SRS HLW tank operations, including closure. (When promulgated, this rule will replace DOE Order 5400.5.)	TBC	O

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
AEA 10 CFR 834.214(a) (Proposed)	<u>Dose Limits</u> - The drinking water system for a DOE activity shall be managed in a manner that complies with the provisions of 40 CFR Part 141 -- National Primary Drinking Water Regulations Pursuant to Section 1412 of the Safe Drinking Water Act.	Proposed DOE Federal regulation that, when promulgated, will be applicable to SRS HLW tank operations, including closure. (When promulgated, this rule will replace DOE Order 5400.5.)	TBC	O
AEA 10 CFR 834.214(b) (Proposed)	<u>Dose Limits</u> - Discharges from DOE activities shall be managed in a manner that will not cause private or public drinking water systems downstream or down-gradient of the facility discharge to exceed the drinking water maximum contamination levels in 40 CFR Part 141.	Proposed DOE Federal regulation that, when promulgated, will be applicable to SRS HLW tank operations, including closure. (When promulgated, this rule will replace DOE Order 5400.5.)	TBC	O
AEA 10 CFR 834.221(a) (Proposed)	<u>Dose Limits</u> - A DOE activity shall be conducted in a manner such that exposure of members of the public to radiation from radioactive waste: (1) complies with ALARA process requirements; and (2) does not exceed a TEDE of 25 mrem (0.25 mSv) in a year from all exposure pathways and radiation sources, except radon and its daughters.	Proposed DOE Federal regulation that, when promulgated, will be applicable to SRS HLW tank operations, including closure. (When promulgated, this rule will replace DOE Order 5400.5.)	TBC	O
AEA 10 CFR 834.231 (Proposed)	<u>Dose Limits for aquatic organisms</u> - A DOE activity shall be conducted in a manner such that the absorbed dose to aquatic animal organisms (e.g., fish, crustaceans, mollusks, and benthic invertebrates) will not exceed 1 rad (0.01 gray) per day from exposure to radiation or radioactive material discharged in liquid waste to natural waterways.	Proposed DOE Federal regulation that, when promulgated, will be applicable to SRS HLW tank operations, including closure. (When promulgated, this rule will replace DOE Order 5400.5.)	TBC	O
AEA DOE 5400.5 Chapter IV, 4.c	<u>Residual Radioactivity</u> - The average level of gamma radiation inside a building or habitable structure on a site to be released without restrictions shall not exceed the background level by more than 20 µR/h and shall comply with the basic dose limit when an "appropriate-use" scenario is considered. This requirement shall not necessarily apply to structures scheduled for demolition or to buried foundations. External gamma radiation levels on open lands shall also comply with the basic limit and the ALARA process, considering appropriate-use scenarios for the area.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
AEA DOE 5400.5 Chapter IV, 4.d	<u>Residual Radioactivity</u> - The generic surface contamination guidelines provided in Figure IV-1 are applicable to existing structures and equipment. These limits apply to both interior equipment and building components that are potentially salvageable or recoverable scrap. If a building is demolished, the guidelines in paragraph IV.6a are applicable to the resulting contamination in the ground.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/CP
AEA DOE 5400.5 Chapter IV, 5.a	<u>Residual Radioactivity</u> - The authorized limits for each property shall be set equal to the generic or derived guidelines unless it can be established, on the basis of specific property data (including health, safety, practical, programmatic and socioeconomic considerations), that the guidelines are not appropriate for use at the specific property. The authorized limits shall be established to (1) provide that, at a minimum, the basic dose limits in paragraph IV.3, will not be exceeded under the "worst-case" or "plausible-use" scenarios, consistent with the procedures and guidance provided in DOE/CH-8901, or (2) be consistent with applicable generic guidelines. The authorized limits shall be consistent with limits and guidelines established by other applicable Federal and State laws. The authorized limits are developed through the project offices in the field and are approved by the Headquarters Program Office.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/CP
AEA DOE 5400.5 Chapter IV, 5.b	<u>Residual Radioactivity</u> - Remedial action shall not be considered complete until the residual radioactive material levels comply with the authorized limits, except as authorized pursuant to paragraph IV.7 for special situations where the supplemental limits and exceptions should be considered and it is demonstrated that it is not appropriate to decontaminate the area to the authorized limit or guideline value.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/CP
AEA DOE 5400.5 Chapter IV, 6.b(1)	<u>Residual Radioactivity</u> - Control and stabilization features shall be designed to provide, to the extent reasonably achievable, an effective life of 50 years with a minimum life of at least 25 years.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
AEA DOE 5400.5 Chapter IV, 6.b(2)	<u>Residual Radioactivity</u> - Controls shall be designed such that Rn-222 concentrations in the atmosphere above facility surfaces or openings in addition to background levels, will not exceed: (a) 100 pCi/L at any given point; (b) An annual average concentration of 30 pCi/L over the facility site; and (c) An annual average concentration of 3 pCi/L at or above any location outside the facility site. (d) Flux rates from the storage of radon producing wastes shall not exceed 20 pCi/(m ² sec), as required by 40 CFR Part 61.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/CP
AEA DOE 5400.5 Chapter IV, 6.b(3)	<u>Residual Radioactivity</u> - Controls shall be designed such that concentrations of radionuclides in the groundwater and quantities of residual radioactive material will not exceed applicable Federal or State standards.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/CP
AEA DOE 5400.5 Chapter IV, 6.b(4)	<u>Residual Radioactivity</u> - Access to a property and use of onsite material contaminated by residual radioactive material should be controlled through appropriate administrative and physical controls such as those described in 40 CFR Part 192. These control features should be designed to provide, to the extent reasonable, an effective life of at least 25 years.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
AEA DOE 5400.5 Chapter IV, 6.d(1)	<u>Residual Radioactivity</u> - For Uranium, Thorium, and Their Decay Products: (a) Control and stabilization features shall be designed to provide, to the extent reasonably achievable, an effective life of 1,000 years with a minimum life of at least 200 years. (b) Control and stabilization features shall be designed to limit Rn-222 emanation to the atmosphere from the wastes to less than an annual average release rate of 20 pCi/(m ² sec) and prevent increases in the annual average Rn-222 concentration at or above any location outside the boundary of the contaminated area by more than 0.5 pCi/L. Field verification of emanation rates shall be in accordance with the requirements of 40 CFR Part 61. (c) Before any potentially biodegradable contaminated wastes are placed in a long-term management facility, such wastes shall be properly conditioned so that the generation and escape of biogenic gases will not cause the requirement in paragraph IV.6d(1)(b) to be exceeded and that biodegradation within the facility will not result in premature structural failure in violation of the requirements in paragraph IV.6d(1)(a). (d) Groundwater shall be protected in accordance with legally applicable Federal and State standards. (e) Access to a property and use of onsite material contaminated by residual radioactive material should be controlled through appropriate administrative and physical controls such as those described in 40 CFR Part 192. These controls should be designed to be effective to the extent reasonable for at least 200 years	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/CP
AEA DOE 5820.2A Chapter III, 2.a	<u>Low-Level Waste Management</u> - DOE LLW operations shall be managed to protect the health and safety of the public, preserve the environment of the waste management facilities, and ensure that no legacy requiring remedial action remains after operations have been terminated.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/CP
AEA DOE 5820.2A Chapter III, 2.b	<u>Low-Level Waste Management</u> - DOE LLW shall be managed on a systematic basis using the most appropriate combination of waste generation reduction, segregation, treatment, and disposal practices so that the radioactive components are contained and the overall system cost effectiveness is maximized.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
AEA DOE 5820.2A Chapter III, 2.c	<u>Low-Level Waste Management</u> - DOE LLW shall be disposed of on the site at which it is generated, if practical, or if on-site disposal capability is not available, at another DOE disposal facility.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/CP
AEA DOE 5820.2A Chapter III, 3.a(1-2)	<u>Low-Level Waste Management</u> - DOE LLW that has not been disposed of prior to issuance of this Order shall be managed on the schedule developed in the Implementation Plan to protect public health and safety in accordance with standards specified in applicable EH Orders and other DOE Orders, and to assure that external exposure to the waste and concentrations of radioactive material which may be released into surface water, ground water, soil, plants and animals results in an effective dose equivalent that does not exceed 25 mrem/yr to any member of the public. Releases to the atmosphere shall meet the requirements of 40 CFR 61. Reasonable effort should be made to maintain releases of radioactivity in effluents to the general environment as low as is reasonably achievable (ALARA).	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/CP
AEA DOE 5820.2A Chapter III, 3.i(2)	<u>Low-Level Waste Management</u> - Engineered modifications (stabilization, packaging, burial depth, barriers) for specific waste types and for specific waste compositions (fission products, induced radioactivity, uranium, thorium, radium) for each disposal site shall be developed through the performance assessment model. In the course of this process, site specific waste classification limits may be developed if operationally useful in determining how specific wastes should be stabilized and packaged for disposal.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/CP
AEA DOE 5820.2A Chapter III, 3.i(4)	<u>Low-Level Waste Management</u> - Disposition of waste designated as greater-than-class C (GTCC), as defined in 10 CFR 61.55, must be handled as special cases. Disposal systems for such waste must be justified by a specific performance assessment through the National Environmental Policy Act process and with the concurrence of DP-12 for all DP-1 disposal facilities and of NE-20 for those disposal facilities under the cognizance of NE-1.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
AEA DOE 5820.2A Chapter III, 3.i(5)(a-c)	<u>Low-Level Waste Management</u> - The following disposal requirements are intended either to improve stability of the disposal site or to facilitate handling and provide protection of the health and safety of personnel at the disposal site. Waste must not be packaged for disposal in cardboard or fiberboard boxes, unless such boxes meet DOT requirements and contain stabilized waste with a minimum of void space. For all types of containers, void spaces within the waste and between the waste and its packaging shall be reduced as much as practical. Liquid wastes, or wastes containing free liquid, must be converted into a form that contains as little freestanding and noncorrosive liquid as is reasonably achievable, but, in no case, shall the liquid exceed 1 percent of the volume of the waste when the waste is in a disposal container, or 0.5 percent of the volume of the waste processed to a stable form. Additionally, waste must not be readily capable of detonation or of explosive decomposition or reaction at normal pressures and temperatures, or of explosive reaction with water.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/CP
AEA DOE 5820.2A Chapter III, 3.i(5)(d-e)	<u>Low-Level Waste Management</u> - Waste must not contain, or be capable of generating, quantities of toxic gases, vapors, or fumes harmful to persons transporting, handling, or disposing of the waste. This does not apply to radioactive gaseous waste packaged at a pressure that does not exceed 1.5 atmospheres at 20 degrees centigrade.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/CP
AEA DOE 5820.2A Chapter III, 3.i(5)(f)	<u>Low-Level Waste Management</u> - Waste must not be pyrophoric. Pyrophoric materials contained in waste shall be treated, prepared, and packaged to be nonflammable.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/CP
AEA DOE 5820.2A Chapter III, 3.i(8)(b)	<u>Low-Level Waste Management</u> - Disposal units shall be designed consistent with disposal site hydrology, geology, and waste characteristics and in accordance with the NEPA process.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/CP
AEA DOE 5820.2A Chapter III, 3.i(9)(b)	<u>Low-Level Waste Management</u> - Permanent identification markers for disposal excavations and monitoring wells shall be emplaced.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
AEA DOE 5820.2A Chapter III, 3.i(9)(d)	<u>Low-Level Waste Management</u> - Waste placement into disposal units should minimize voids between containers.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/CP
AEA DOE 5820.2A Chapter III, 3.j(2)	<u>Low-Level Waste Management</u> - During closure and post closure, residual radioactivity levels for surface soils shall comply with existing DOE decommissioning guidelines.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/CP
AEA DOE 5820.2A Chapter III, 3.j(4)	<u>Low-Level Waste Management</u> - Inactive disposal facilities, disposal sites, and disposal units shall be managed in conformance with RCRA, CERCLA, and SARA, or, if mixed waste is involved, may be included in permit applications for operation of contiguous disposal facilities.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/CP
AEA DOE Order 5820.2A, Chapter V, 3.c(2)	<u>Decommissioning of Radioactively Contaminated Facilities</u> - All HLW and stored hazardous materials should be removed by the operator as part of the last operational activities prior to entering the decommissioning phase.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	RA	DOE/CP
AEA DOE Order 5820.2A, Chapter V, 3.d(1)(d)	<u>Decommissioning of Radioactively Contaminated Facilities</u> - Baseline data for project activities shall include information on factors that could influence the selection of decommissioning alternatives (safe storage, entombment, dismantlement) such as potential future use, long-range site plans required by DOE Order 4300.1B, facility condition, and potential health, safety, and environmental hazards.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	RA	DOE/CP
AEA DOE Order 5820.2A, Chapter V, 3.d(2)	<u>Decommissioning of Radioactively Contaminated Facilities</u> - The CERCLA, SARA, and/or RCRA status of each project shall be identified and an RI/FS performed, if required. Based on the results of the RI/FS and any additional data deemed necessary, an appropriate environmental review shall be performed according to the requirements of NEPA, CERCLA, RCRA, and SARA. Candidate decommissioning alternatives shall be identified, assessed, and evaluated, and a preferred alternative selected based on the results of the environmental review.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	RA	DOE/CP

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
AEA DOE 5400.5 Chapter II, 1.a	<u>Dose Limits</u> - Except as provided by II.1a(4), the exposure of members of the public to radiation sources as a consequence of all routine DOE activities shall not cause, in a year, an effective dose equivalent greater than 100 mrem (1 mSv).	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/O
AEA DOE 5400.5 Chapter II, 1.a(3)(a)	<u>Dose Limits</u> - DOE operators shall make a reasonable effort to be aware of the existence of other than DOE man-made sources of radiation which, combined with the DOE sources, might present a potential for exceeding contributions of 10 mrem (0.1 mSv) effective dose equivalent in a year. Reasonable efforts shall be made to limit dose to members of the public, from multiple sources of radiation, to 100 mrem (1 mSv) EDE, or less, in a year.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/O
AEA DOE 5400.5 Chapter II, 1.a(4)(a)	<u>Dose Limits</u> - Operations Office may request from EH-1, specific authorization for a temporary public dose limit higher than 100 mrem (1 mSv), but not to exceed 500 mrem (5 mSv), for the year.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/O
AEA DOE 5400.5 Chapter II, 1.b	<u>Dose Limits</u> - The exposure of members of the public to radioactive materials released to the atmosphere as a consequence of routine DOE activities shall not cause members of the public to receive, in a year, an effective dose equivalent greater than 10 mrem (0.1 mSv).	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/O
AEA DOE 5400.5 Chapter II, 1.c	<u>Dose Limits</u> - The exposure of members of the public to direct radiation or radioactive materials released from DOE management and storage activities at a disposal facility for spent nuclear material or for high-level or transuranic radioactive wastes that are not regulated by the NRC shall not cause members of the public to receive, in a year, a dose equivalent greater than 25 mrem (0.25 mSv) to the whole body or a committed dose equivalent greater than 75 mrem (0.75 mSv) to any organ.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/O

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
AEA DOE 5400.5 Chapter II, 1.d	<u>Dose Limits</u> - The level of protection provided to the public for drinking water must be equivalent to the drinking water standards of 40 CFR 141. These systems shall not cause persons consuming the water to receive an effective dose equivalent greater than 4 mrem (0.04 mSv) in a year. Combined radium-226 and radium-228 shall not exceed 5×10^{-9} $\mu\text{Ci/ml}$ and gross alpha activity (including radium-226 but excluding radon and uranium) shall not exceed 1.5×10^{-8} $\mu\text{Ci/ml}$.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/O
AEA DOE 5400.5 Chapter II, 1.d(3)	<u>Dose Limits</u> - The liquid effluents from DOE activities shall not cause private or public drinking water systems downstream of the facility discharge to exceed the drinking water radiological limits in 40 CFR 141.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/O
AEA DOE 5400.5 Chapter II, 3.a(5)	<u>Dose Limits for Aquatic Organisms</u> - To protect native animal aquatic organisms, the absorbed dose to these organisms shall not exceed 1 rad per day from exposure to the radioactive material in liquid wastes discharged to natural waterways.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/O
AEA DOE 5400.5 Chapter II, 5.a	<u>Residual Radioactivity</u> - Release of real property (land and structures) shall be in accordance with the guidelines and requirements for residual radioactive material presented in Chapter IV. These guidelines and requirements apply to both DOE-owned facilities and to private properties that are being prepared by DOE for release. Real properties owned by DOE that are being sold to the public are subject to the requirements of Section 120(h) of CERCLA, as amended, concerning hazardous substances, and to any other applicable Federal, State, and local requirements. The requirements of 40 CFR 192 are applicable to properties remediated by DOE under Title I of the UMTRA.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/O

Citation	Requirement/Guidance Summary	Rationale for Use	Requirements/ Guidance Category ^a	Type ^b
AEA DOE 5820.2A Chapter I, 2	<u>High-Level Waste Management</u> - All high-level waste generated by DOE operations shall be safely stored, treated, and disposed of according to requirements set forth in this Order. Storage operations shall comply with applicable EPA standards and EPA/State regulations. Geologic disposal shall comply with both Nuclear Regulatory Commission regulations and EPA standards.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure. This section would only be applicable to those waste residues considered to be high-level waste.	A	DOE/O
AEA DOE 5820.2A Chapter III, 3.a(3-4)	<u>Low-Level Waste Management</u> - DOE LLW that has not been disposed of prior to issuance of this Order shall be managed on the schedule developed in the Implementation Plan to assure that the committed effective dose equivalents received by individuals who inadvertently may intrude into the facility after the loss of active institutional control (100 years) will not exceed 100 mrem/yr for continuous exposure or 500 mrem for a single acute exposure. LLW shall also be managed to protect ground water resources, consistent with Federal, State and local requirements.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/CP
AEA DOE 5820.2A Chapter III, 3.i(1)	<u>Low-Level Waste Management</u> - LLW shall be disposed of by methods appropriate to achieve the performance objectives stated in paragraph 3a, consistent with the disposal site radiological performance assessment in paragraph 3b.	DOE Orders implement AEA requirements pertinent to SRS HLW tank operations, including closure.	A	DOE/CP

^aCategories are defined as follows: A = Applicable (Substantive Federal and State environmental protection requirements, criteria, or limits that directly apply to SRS high-level waste tank closure operations.) RA = Relevant and Appropriate (Substantive Federal and State environmental protection requirements, criteria, or limits which, while not directly applicable, are judged to be well suited for use for SRS high-level waste closure operations based on their applicability to similar operations.) TBC = To-be-Considered Materials (Advisories, guidance, proposed rules and the like issued by Federal or State government that are not legally binding, but which are judged to be useful in establishing environmental protection protocols and performance objectives or in evaluating closure options with respect to protectiveness of human health and the environment.)

^bTypes are defined as follows: CP = Closure/Post-Closure (Environmental requirements/guidance that primarily address HLW tank closure/post-closure operations.) O = Operational (Environmental requirements/guidance that primarily address operations incidental to HLW tank closure/post-closure operations per se; e.g., management of waste removed from HLW tanks or generated as a result of HLW tank closure operations. DOE/CP = DOE Order Requirements that primarily address HLW tank closure/post-closure operations, per se. DOE/O = DOE Requirements that primarily address operations incidental to HLW tank closure/post-closure operations per se.