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Appendix F

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Identification of Potential Applicable or Relevant and Appropriate Requirements and To-Be-Considered Criteria for the 200-WA-1 and 200-BC-1 Operable Units

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Terms

ACM	asbestos-containing material
ALARA	as low as reasonably achievable
ARAR	applicable or relevant and appropriate requirement
BACT	best available control technology
CERCLA	<i>Comprehensive Environmental Response, Compensation, and Liability Act of 1980</i>
Eco-SSLs	ecological risk-based soil screening levels
EPA	U.S. Environmental Protection Agency
FEM	federal equivalent method
FRM	federal reference method
FS	feasibility study
IDW	investigation-derived waste
OU	operable unit
NPL	National Priorities List (40 CFR 300, “National Oil and Hazardous Substances Pollution Contingency Plan,” Appendix B, “National Priorities List”)
PCB	polychlorinated biphenyl
PM-10	particles less than 10 µm in diameter
PM ₁₀	particles less than 10 µm in diameter
ppm	parts per million
RCRA	<i>Resource Conservation and Recovery Act of 1976</i>
RI	remedial investigation
RTD	removal, treatment, and disposal
TBC	to-be-considered

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F1 Introduction

2 This appendix presents potential applicable or relevant and appropriate requirements (ARAR) that may
3 apply to 200-WA-1 and 200-BC-1 remediation activities. Table F-1 presents potential federal ARARs and
4 to-be-considered (TBC) criteria. Table F-2 presents potential State of Washington ARARs and
5 TBC criteria.

Table F-1. Identification of Potential Federal Applicable or Relevant and Appropriate Requirements and To-Be-Considered Criteria for the 200-WA-1 and 200-BC-1 OUs

Citation	Description of Requirement	Rationale for Use	Potential Relevancy	Possible Application
Chemical-Specific ARARs and TBCs—Vadose Zone Soil				
OSWER Directive 9285.7-55, <i>Guidance for Developing Ecological Soil Screening Levels (Eco-SSLs)</i>	Provides a set of risk-based soil screening levels (Eco-SSLs) for several soil contaminants that are of ecological concern for terrestrial plants and animals at hazardous waste sites. Also describes the process used to derive these levels and provides guidance for their use.	Target analytes detected in soil and vadose zone soil includes constituents that could pose ecological risks.	TBC	Assistance in the identification of areas, contaminants, and conditions that may require further RI.
“Regional Screening Levels for Chemical Contaminants at Superfund Sites” (EPA, 2010)	Provides a set of risk-based screening levels; the regional screening levels provide tables of human health risk-based screening levels calculated using the latest toxicity values, default exposure assumptions, and physical and chemical properties. Risk-based screening levels may help determine whether levels of contamination found at CERCLA hazardous waste sites may warrant further investigation or site cleanup, or whether no further investigation or action may be required.	Target analytes detected in soil and vadose zone soil includes constituents that could pose risks to human health.	TBC	Assistance in the identification of areas, contaminants, and conditions that may require further RI.
<i>Toxic Substances Control Act of 1976 (TSCA) (15 USC 2601, et seq.); “Polychlorinated Biphenyls (PCB) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions” (40 CFR 761)</i>				
“Applicability,” “PCB Waste” (40 CFR 761.50(b)1, 2, 3, 4, and 7) “Applicability,” “Storage for Disposal” (40 CFR 761.50(c))	Establishes general PCB disposal requirements for the storage and disposal of PCB wastes including liquid PCB wastes, PCB items, PCB remedial waste, PCB bulk product wastes, and PCB/radioactive wastes at concentrations greater than 50 ppm.	PCB wastes greater than 50 ppm may be encountered or generated during the RI and subsequent remediation.	ARAR	Soil and vadose zone excavation and RI; equipment and debris handling and disposal; IDW management.

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Table F-1. Identification of Potential Federal Applicable or Relevant and Appropriate Requirements and To-Be-Considered Criteria for the 200-WA-1 and 200-BC-1 OUs

Citation	Description of Requirement	Rationale for Use	Potential Relevancy	Possible Application
“Disposal Requirements” (40 CFR 761.60(a), (b), and (c))	Establishes requirements applicable to the handling and disposal of PCB liquids, PCB articles, and PCB containers.	PCB liquids, articles, or containers may be encountered or generated during the RI and subsequent remediation.	ARAR	Equipment and debris handling, storage, and disposal; IDW management and disposal.
“PCB Remediation Waste” (40 CFR 761.61)	Provides cleanup and disposal options for PCB remediation waste based on the concentration at which the PCBs are found.	PCB remediation wastes may be encountered or generated during the remedial actions for the 200-WA-1 or 200-BC-1 OUs.	ARAR	Soil remediation; removal, treatment, and disposal (RTD); and IDW management and disposal.
<i>Clean Air Act of 1977 (42 USC 7401, et seq.); “National Emission Standards for Hazardous Air Pollutants” (40 CFR 61)</i>				
“Applicability” (40 CFR 61.140)	Defines regulated ACM and regulated removal and handling requirements.	Encountering ACM (e.g., on pipelines or buried asbestos) is possible during the RI or during remedial activities.	ARAR	Site investigation and remedial activities that include demolition or renovation and associated handling, packaging, and transportation of ACM including IDW management and disposal.
“Standard for Demolition and Renovation” (40 CFR 61.145)	Specifies sampling, inspection, handling, and disposal requirements for regulated sources having the potential to emit asbestos. Specifically, no visible emissions are allowed during handling, packaging, and transport of ACM.			
“Standard for Waste Disposal for Manufacturing, Fabricating, Demolition, Renovation, and Spraying Operations” (40 CFR 61.150)	Identifies requirements for the removal and disposal of asbestos from demolition and renovation activities.	Encountering ACM on pipelines or buried asbestos is possible during the RI or during remedial activities.	ARAR	Site investigation and remedial activities that include demolition or renovation and associated handling, packaging, and transportation of ACM, including IDW management and disposal.

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Table F-1. Identification of Potential Federal Applicable or Relevant and Appropriate Requirements and To-Be-Considered Criteria for the 200-WA-1 and 200-BC-1 OUs

Citation	Description of Requirement	Rationale for Use	Potential Relevancy	Possible Application
Radionuclide ARAR Dose Compliance Concentrations for Superfund				
<p>“Establishment of Cleanup Levels for CERCLA Sites with Radioactive Contamination” (Luftig and Weinstock, 1997) OSWER Directive 9200.4-31P, <i>Radiation Risk Assessment at CERCLA Sites: Q & A</i></p>	<p>This memorandum presents clarification for establishing protective cleanup levels in media for radioactive contamination at CERCLA sites. The EPA has determined that the dose limits established in the U.S. Nuclear Regulatory Commission 62 FR 39058, “Radiological Criteria for License Termination” (25 mrem/yr, which is equivalent to 5×10^{-4} increase lifetime risk), will not provide a protective basis for establishing preliminary remedial goals under CERCLA. Instead, EPA has identified a 15 mrem/yr effective dose (approximately equivalent to 3×10^{-4} increase lifetime risk), which is preferred as the maximum dose limit for humans. (However, depending upon the radionuclide involved, a 15 mrem/yr effective dose equivalent could represent a significantly higher or lower lifetime cancer risk than 3×10^{-4}.)</p> <p>In the Final Guidance, EPA further clarifies that 15 mrem/yr is not a presumptive cleanup level under CERCLA. Rather, site decision makers should continue to use the CERCLA risk range when ARARs are not used to set cleanup levels because using dose-based guidance would result in unnecessary inconsistency in how radiological and nonradiological (chemical) contaminants are addressed at CERCLA sites.</p>	<p>Target analytes detected in soil and vadose zone soil contain radioactive contaminants that may pose unacceptable risk to human health.</p>	<p>TBC</p>	<p>Development of media cleanup levels for remediation and verification.</p>

Table F-1. Identification of Potential Federal Applicable or Relevant and Appropriate Requirements and To-Be-Considered Criteria for the 200-WA-1 and 200-BC-1 OUs

Citation	Description of Requirement	Rationale for Use	Potential Relevancy	Possible Application
Location-Specific ARARs and TBCs				
<i>Archeological and Historic Preservation Act of 1974 (16 USC 469a-1 – 469a-2(d))</i>				
<i>Archeological and Historic Preservation Act of 1974</i> (16 USC 469a-1 – 469a-2(d))	Requires that the remedial actions do not cause the loss of any archaeological or historic data. This act mandates preservation of data; it does not require protection of the actual site or facility.	Archaeological and historic sites have been identified within the 200-WA-1 and 200-BC-1 OUs.	ARAR	Investigation and remedial activities that occur in or near archaeological or historic sites.
<i>National Historic Preservation Act of 1966 (16 USC 470, et seq.)</i>				
“Protection of Historic Properties” (36 CFR 800) “National Historic Landmarks Program” (36 CFR 65) “National Register of Historic Places” (36 CFR 60)	Requires federal agencies to consider the impacts of their undertaking on cultural properties through identification, evaluation, mitigation processes, and consultation with interested parties.	Cultural and historic sites have been identified within the 200-WA-1 and 200-BC-1 OUs.	ARAR	Investigation and remedial activities that affect cultural or historic sites. Regulations implementing Section 106 of the <i>National Historic Preservation Act</i> will be met as required.
<i>Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001, et seq.); “Native American Graves Protection and Repatriation Regulations” (43 CFR 10)</i>				
“Native American Graves Protection and Repatriation Regulations” (43 CFR 10)	Establishes federal agency responsibility for discovery of human remains, associated and unassociated funerary objects, sacred objects, and items of cultural patrimony. Requires Native American Tribal consultation in the event of discovery.	Native American archaeological, cultural, and historic sites have been identified within the 200-WA-1 and 200-BC-1 OUs; Native American remains and associated objects may be present.	ARAR	Investigation and remedial activities that affect Native American archaeological and cultural areas, and historic sites that contain associated remains and objects.

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Table F-1. Identification of Potential Federal Applicable or Relevant and Appropriate Requirements and To-Be-Considered Criteria for the 200-WA-1 and 200-BC-1 OUs

Citation	Description of Requirement	Rationale for Use	Potential Relevancy	Possible Application
<i>Endangered Species Act of 1973 (16 USC 1531, et seq., Subsection 16 USC 1536(c))</i>				
“Interagency Cooperation—Endangered Species Act of 1973, as Amended” (50 CFR 402)	Prohibits actions by federal agencies that are likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of habitat critical to them. Mitigation measures must be applied to actions that occur within critical habitats or surrounding buffer zones of listed species, in order to protect the resource.	Federal endangered and/or threatened species including plants and animals are found within the 200-WA-1 and 200-BC-1 OUs.	ARAR	Remedial actions and investigation activities that occur within critical habitats or designated buffer zones of federally listed species.
<i>Migratory Bird Treaty Act of 1918 (16 USC 703-712)</i>				
<i>Migratory Bird Treaty Act of 1918 (16 USC 703-712)</i>	Protects all migratory bird species and prevents “take” of protected migratory birds, their young, or their eggs.”	Migratory birds occur within the 200-WA-1 and 200-BC-1 OUs.	ARAR	Investigation and remediation activities that have the potential to kill migratory birds or destroy their eggs or nests.
Land Use and Exposure Scenarios				
<i>Final Hanford Comprehensive Land-Use Plan Environmental Impact Statement (DOE/EIS-0222-F) and Supplement Analysis: Hanford Comprehensive Land-Use Plan Environmental Impact Statement (DOE/EIS-0222-SA-01)</i>	Establishes the future land use projections for the Inner Area.	Land use as stated in the Hanford Comprehensive Land Use Plan for the Inner Area of the Central Plateau is industrial exclusive.	TBC	

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Table F-1. Identification of Potential Federal Applicable or Relevant and Appropriate Requirements and To-Be-Considered Criteria for the 200-WA-1 and 200-BC-1 OUs

Citation	Description of Requirement	Rationale for Use	Potential Relevancy	Possible Application
ACM	= asbestos-containing materials			
ARAR	= applicable or relevant and appropriate requirement			
CERCLA	= <i>Comprehensive Environmental Response, Compensation, and Liability Act of 1980</i>			
DOE	= U.S. Department of Energy			
Eco-SSL	= ecological risk-based soil screening levels			
EPA	= U.S. Environmental Protection Agency			
IDW	= investigation-derived waste			
OU	= operable unit			
PCB	= polychlorinated biphenyl			
ppm	= parts per million			
RI	= remedial investigation			
RTD	= removal, treatment, and disposal			
TBC	= to-be-considered			

Table F-2. Identification of Potential State of Washington Applicable and Relevant or Appropriate Requirements To-Be-Considered Criteria for the 200-WA-1 and 200-BC-1 OUs

Citation	Description of Requirement	Rationale for Use	Relevancy	Possible Action(s)
Chemical-Specific ARAR				
<p>“Model Toxics Control Act – Cleanup,” “Soil Cleanup Standards for Industrial Properties” (WAC 173-340-745(5)) “Soil Cleanup Standards for Industrial Properties, Adjustments” (WAC 173-340-745(6))</p>	<p>Establishes soil chemical cleanup levels where industrial land use represents the reasonable maximum exposure under both current and future site use conditions. Cleanup standards require specification of the following: hazardous chemical substance concentrations that protect human health and the environment (cleanup levels), the location of the site where cleanup levels must be attained (points of compliance), and other regulatory requirements that apply to the cleanup action because of the type of action or location of the site. These requirements are specified in the applicable state and federal laws and are generally established in conjunction with the selection of a specific cleanup action.</p>	<p>Soil in the 200-WA-1 and 200-BC-1 OUs contains chemical contaminants that require remediation. The human health conceptual exposure model for these areas is considered industrial land use.</p>	<p>ARAR</p>	<p>Soil chemical cleanup actions where concentrations of hazardous substances in the soil exceed Method A cleanup levels.</p>
<p>“Model Toxics Control Act—Cleanup,” “Deriving Soil Concentrations for Groundwater Protection” (WAC 173-340-747(3) through (8))</p>	<p>Establishes soil chemical concentrations that will not cause contamination of groundwater at levels that exceed the groundwater cleanup levels established under “Groundwater Cleanup Standards” (WAC 173-340-720).</p>	<p>Soil in the 200-WA-1 and 200-BC-1 OUs contain chemical contaminants that require remediation to protect groundwater. The requirements corresponding to soil cleanup levels may be used to calculate cleanup levels to ensure protection of groundwater. Although groundwater is not currently used for drinking water, it is a potential drinking water source.</p>	<p>ARAR</p>	<p>Soil cleanup actions where concentrations of hazardous chemical substances in the soil exceed soil concentrations for protection of groundwater. As allowed, WAC 173-340-747(8), Alternative fate and transport models, one of the seven allowable methods under WAC 173-340-747, will be used to determine appropriate cleanup levels.</p>

Table F-2. Identification of Potential State of Washington Applicable and Relevant or Appropriate Requirements To-Be-Considered Criteria for the 200-WA-1 and 200-BC-1 OUs

Citation	Description of Requirement	Rationale for Use	Relevancy	Possible Action(s)
<p>“Model Toxics Control Act—Cleanup,” “Terrestrial Ecological Evaluation Procedures” (WAC 173-340-7490(2))</p> <p>“Site-Specific Terrestrial Ecological Evaluation Procedures” (WAC 173-340-7493(3))</p> <p>“Priority Contaminants of Ecological Concern” (WAC 173-340-7494)</p>	<p>Defines goals and procedures for determining whether a release of hazardous substances to soil and vadose zone soil may pose a threat to the terrestrial environment; characterizes existing or potential threats to terrestrial plants or animals exposed to hazardous substances in soil and vadose zone soil; and establishes site-specific cleanup standards for the protection of terrestrial plants and animals.</p> <p>Section 173-340-7494 provides for numeric concentrations of hazardous substances determined to persist, bioaccumulate, or be highly toxic to terrestrial ecological receptors.</p>	<p>Soil and vadose zone soil in the 200-WA-1 and 200-BC-1 OUs contain contaminants that require evaluation to determine whether ecological exposures have the potential to cause significant adverse effects.</p>	TBC	<p>Soil and vadose zone soil remedial activities (e.g., containment or RTD) that may pose risks to terrestrial ecological plants and animals.</p>
Action-Specific ARAR				
“Hazardous Waste Management” (RCW 70.105); “Dangerous Waste Regulations” (WAC 173-303)				
<p>“Identifying Solid Waste” (WAC 173-303-016)</p> <p>“Recycling Processes Involving Solid Waste” (WAC 173-303-017)</p>	<p>Establishes criteria for solid and recycled solid wastes.</p>	<p>Solid wastes and/or recycled solid wastes may be generated during the RI/FS.</p>	ARAR	<p>Investigative and remedial activities that generate solid wastes, (e.g., drums, barrels, tanks, containers, bulk wastes, debris, contaminated soil, and vadose zone soil).</p>
<p>“Designation of Dangerous Waste” (WAC 173-303-070)</p>	<p>Establishes the method for determining whether a solid waste is a dangerous waste (or an extremely hazardous waste).</p>	<p>Dangerous/hazardous waste may be generated during the RI/FS.</p>	ARAR	<p>Investigative and remedial (including waste treatment) activities that generate solid wastes that may be dangerous waste.</p>

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Table F-2. Identification of Potential State of Washington Applicable and Relevant or Appropriate Requirements To-Be-Considered Criteria for the 200-WA-1 and 200-BC-1 OUs

Citation	Description of Requirement	Rationale for Use	Relevancy	Possible Action(s)
"Requirements for Universal Waste" (WAC 173-303-077)	Identifies those wastes exempted from regulation under WAC 173-303-140, "Land Disposal Restrictions," and WAC 173-303-170, "Requirements for Generators of Dangerous Waste" through 173-303-9907, "Reserved" (excluding WAC 173-303-960, "Special Powers and Authorities of the Department"). These wastes are subject to regulation under WAC 173-303-573, "Standards for Universal Waste Management."	Universal wastes may be generated during the RI/FS.	ARAR	Investigative and remedial activities (disposal, storage, recycling, and onsite treatment) that manage universal wastes consistent with the requirements of the <i>Washington Administrative Code</i> .
"Recycled, Reclaimed, and Recovered Wastes" (WAC 173-303-120; WAC 173-303-120(3); and WAC 173-303-120(5))	These regulations define the requirements for the recycling of materials that are solid and dangerous waste. Specifically, WAC 173-303-120(3) provides for the management of certain recyclable materials, including spent refrigerants, antifreeze, and lead acid batteries. WAC 173-303-120(5) provides for the recycling of used oil.	Recycled, reclaimed, and recovered wastes may be generated during the RI/FS.	ARAR	RI/FS recycling activities consistent with the requirements of the <i>Washington Administrative Code</i> and are not otherwise subject to CERCLA as hazardous substances.
"Land Disposal Restrictions" (WAC 173-303-140)	This regulation establishes treatment requirements and disposal prohibitions for land disposal of dangerous waste and incorporates, by reference, (in WAC 173-303-140(2)(a)) the federal land disposal restrictions of 40 CFR 268, "Land Disposal Restrictions," that are applicable to solid waste that is designated as dangerous or mixed waste in accordance with WAC 173-303-070(3).	Onsite land disposal may be a selected remedy for dangerous waste and debris.	ARAR	Investigative and remedial wastes destined for onsite land disposal.

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Table F-2. Identification of Potential State of Washington Applicable and Relevant or Appropriate Requirements To-Be-Considered Criteria for the 200-WA-1 and 200-BC-1 OUs

Citation	Description of Requirement	Rationale for Use	Relevancy	Possible Action(s)
“Requirements for Generators of Dangerous Waste” (WAC 173-303-170)	Establishes the requirements for dangerous waste generators. WAC 173-303-170(3) includes the substantive provisions of WAC 173-303-200, “Accumulating Dangerous Waste Onsite,” by reference. WAC 173-303-200 further includes certain substantive standards from WAC 173-303-630, “Use and Management of Containers,” and WAC 173-303-640, “Tank Systems,” by reference. Specifically, the substantive standards for management of dangerous or mixed waste are relevant and appropriate to the management of dangerous waste that will be generated during the remedial action.	Dangerous wastes may be generated from the RI/FS.	ARAR	IDW and remedial wastes (e.g., contaminated soil, vadose zone soil, groundwater, IDW, treatment chemicals).
“Accumulating Dangerous Waste Onsite” (WAC 173-303-200)	Establishes the requirements for accumulating wastes onsite. WAC 173-303-200 further includes certain substantive standards from WAC 173-303-630 and WAC 173-303-640, by reference.	Dangerous waste may be generated from the RI/FS.	ARAR	Management of dangerous waste during remedial and investigative actions.
“Water Well Construction” (RCW 18.104); “Minimum Standards for Construction and Maintenance of Wells” (WAC 173-160)				
“What Is the Decommissioning Process for Resource Protection Wells?” (WAC 173-160-460)	Identifies the decommissioning process for resource protection wells.	Groundwater monitoring and treatment wells and borings may occur in the 200-WA-1 or 200-BC-1 OUs.	ARAR	Investigative and remedial activities that require siting, installation, construction, operation, maintenance, and decommissioning of wells and borings.

Table F-2. Identification of Potential State of Washington Applicable and Relevant or Appropriate Requirements To-Be-Considered Criteria for the 200-WA-1 and 200-BC-1 OUs

Citation	Description of Requirement	Rationale for Use	Relevancy	Possible Action(s)
“Solid Waste Management—Reduction and Recycling” (RCW 70.95); “Solid Waste Handling Standards” (WAC 173-350)				
“Owner Responsibilities for Solid Waste” (WAC 173-350-025) “Performance Standards” (WAC 173-350-040) “On-Site Storage, Collection and Transportation Standards” (WAC 173-350-300) “Remedial Action” (WAC 173-350-900)	Establishes minimum functional performance standards for the proper handling and disposal of solid waste materials originating from residences; commercial, agricultural, and industrial operations; and other sources, and identifies those functions necessary to assure effective solid waste handling programs at the state and local level.	Solid, nondangerous waste will be generated during the implementation of the RI/FS.	ARAR	Investigative and remedial actions that generate solid, nondangerous waste.
“Washington Clean Air Act” (RCW 70.94); “General Regulations for Air Pollution Sources” (WAC 173-400)				
“General Regulations for Air Pollution Sources” (WAC 173-400)	Defines methods of control to be employed to minimize the release of air pollutants associated with fugitive emissions resulting from materials handling, construction, demolition, or other operations. Emissions are to be minimized through application of BACT.	Soil and vadose zone soil remedial actions implemented in the 200-WA-1 or 200-BC-1 OUs have the potential to emit air pollutants because contaminants detected in the 200-WA-1 or 200-BC-1 OUs include regulated pollutants subject to these standards.	ARAR	Actions performed such as decontamination, demolition, and excavation activities that have the potential to emit visible, particulate, fugitive, or gaseous forms of hazardous criteria, and toxic or nuisance air pollutants.
“General Regulations for Air Pollution Sources,” “General Standards for Maximum Emissions” (WAC 173-400-040)	All sources and emissions units are required to meet the general emission standards unless a specific source standard is available. General standards apply to visible emissions, particulate fallout, fugitive emissions, odors, emissions detrimental to health and property, sulfur dioxide, and fugitive dust.	Soil and vadose zone soil remedial actions implemented have the potential to emit air pollutants because contaminants detected in the 200-WA-1 or 200-BC-1 OUs include regulated pollutants subject to these standards.	ARAR	Remedial actions that have the potential to release air pollutants subject to these regulations.

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Table F-2. Identification of Potential State of Washington Applicable and Relevant or Appropriate Requirements To-Be-Considered Criteria for the 200-WA-1 and 200-BC-1 OUs

Citation	Description of Requirement	Rationale for Use	Relevancy	Possible Action(s)
“General Regulations for Air Pollution Sources,” “Emission Standards for Sources Emitting Hazardous Air Pollutants” (WAC 173-400-075)	Establishes national emission standards for hazardous air pollutants. Adopts, by reference, 40 CFR 61 and appendices.	Soil and vadose zone soil remedial actions implemented have the potential to emit air pollutants because contaminants detected in the 200-WA-1 or 200-BC-1 OUs include regulated pollutants subject to these standards.	ARAR	Actions performed that could result in the emission of hazardous air pollutants, including decontamination, demolition, and excavation activities implemented during the RI/FS that have the potential to release air pollutants subject to these regulations.
“Washington Clean Air Act” (RCW 70.94); “Controls for New Sources of Toxic Air Pollutants” (WAC 173-460)				
“Purpose” (WAC 173-460-010) “Applicability” (WAC 173-460-030) “Control Technology Requirements” (WAC 173-460-060) “Ambient Impact Requirement” (WAC 173-460-070) “First Tier Review” (WAC 173-460-080) “Table of ASIL, SQER and de Minimis Emission Values” (WAC 173-460-150)	Establishes control of new sources emitting toxic air pollutants to prevent air pollution, reduce emissions to the extent reasonably possible, and maintain such levels of air quality as will protect human health and safety. Toxic air pollutants include carcinogens and noncarcinogens listed in WAC 173-460-150, “Table of ASIL, SQER and de Minimis Emission Values.” Three major requirements of this regulation include implementation of BACT for toxics, quantification of toxic air pollutant emissions, and health and safety protection demonstration.	Hazardous contaminants detected in soil and groundwater in the 200-WA-1 or 200-BC-1 OUs include constituents that would constitute toxic air pollutants if released to the air.	ARAR	Groundwater and soil remediation activities such as treatment systems that have the potential to emit toxic air emissions and would be considered a new source.

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Table F-2. Identification of Potential State of Washington Applicable and Relevant or Appropriate Requirements To-Be-Considered Criteria for the 200-WA-1 and 200-BC-1 OUs

Citation	Description of Requirement	Rationale for Use	Relevancy	Possible Action(s)
“Washington Clean Air Act” (RCW 70.94); “Ambient Air Quality Standards and Emission Limits for Radionuclides” (WAC 173-480)				
“Ambient Standard” (WAC 173-480-040)	Requires that emissions of radionuclides in the air will not cause a maximum effective dose equivalent of more than 10 mrem/yr to the whole body to any member of the public.	Hazardous contaminants detected in soil and groundwater in the 200-WA-1 or 200-BC-1 OUs include radionuclides that could be emitted to ambient air during remedial actions.	ARAR	Investigative and remediation activities (e.g., excavation, RTD, demolition, ventilation, vacuuming/exhaust) that have the potential to emit radionuclides above maximum acceptable levels.
“General Standards for Maximum Permissible Emissions” (WAC 173-480-050)	At a minimum, all emission units will make every reasonable effort to maintain radioactive materials in effluents to unrestricted areas, ALARA.* Control equipment of sites operating under ALARA will be defined as reasonably available control technology and ALARA control technology.	The potential for fugitive and diffuse emissions resulting from demolition, excavation, and related activities will require efforts to minimize those emissions. This requirement is action specific.	ARAR	Investigative and remediation activities (e.g., excavation, RTD, demolition, ventilation, vacuuming/exhaust) that have the potential to emit radionuclides above maximum acceptable levels.
“Emission Monitoring and Compliance Procedures” (WAC 173-480-070)	Requires that procedures specified in WAC 246-247, “Radiation Protection—Air Emissions,” or approved specifically by the regulatory agency will be used to determine emissions compliance with the 10 mrem/yr standard for dose to any member of the public. Compliance is determined by calculating the dose to members of the public at the point of maximum annual air concentration in an unrestricted area where any member of the public may be.	Hazardous contaminants detected in soil and groundwater in the 200-WA-1 or 200-BC-1 OUs include radionuclides that could be emitted to unrestricted areas during remedial actions and, therefore, could require monitoring.	ARAR	Investigative and remediation activities (e.g., excavation, RTD, demolition, ventilation, and vacuuming/exhaust) that have the potential to emit radionuclides to the ambient air.

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Table F-2. Identification of Potential State of Washington Applicable and Relevant or Appropriate Requirements To-Be-Considered Criteria for the 200-WA-1 and 200-BC-1 OUs

Citation	Description of Requirement	Rationale for Use	Relevancy	Possible Action(s)
<p>“Emission Standards for New and Modified Emission Units” (WAC 173-480-060)</p>	<p>Requires that construction, installation, or establishment of a new air emission control units will use best available retrofit control technology.</p>	<p>Hazardous contaminants detected in soil and groundwater in the 200-WA-1 or 200-BC-1 OUs include radionuclides that could be emitted to the ambient air during remedial actions.</p>	<p>ARAR</p>	<p>Investigative and remediation activities (e.g., excavation, RTD, demolition, ventilation, and vacuuming/exhaust) that require air pollution control equipment or other methods to best control emissions and have the potential to emit airborne radionuclides.</p>
<p>“Nuclear Energy and Radiation” (RCW 70.98); “Radiation Protection—Air Emissions” (WAC 246-247)</p>				
<p>“National Standards Adopted by Reference for Sources of Radionuclide Emissions”(WAC 246-247-035(1)(a)(i) [adopts by reference 40 CFR 61.05, “Prohibited Activities”])</p>	<p>Requires the owner or operator of each stationary source of hazardous air pollutants subject to a national emission standard for a hazardous air pollutant to determine compliance with numerical emission limits in accordance with emission tests established in NESHAP, “Emission Tests and Waiver of Emission Tests” (40 CFR 61.13), or as otherwise specified in an individual subpart. Compliance with design, equipment, work practice, or operational standards shall be determined as specified in the individual subpart. Also, maintain and operate the source, including associated equipment for air pollution control, in a manner consistent with good air pollution control practice for minimizing emissions.</p>	<p>Substantive requirements of this standard are applicable because the remedial actions in the 200-WA-1 and 200-BC-1 OUs would be subject to NESHAP Radionuclides Air Pollutant Standards and resultant requirements. The radionuclide hazardous air pollutants have the potential to be detected in and emitted from structures, components, debris, soil, or groundwater involved in the remedial action.</p>	<p>ARAR</p>	<p>Radionuclides are present and may be disturbed during investigative and remedial actions.</p>

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Table F-2. Identification of Potential State of Washington Applicable and Relevant or Appropriate Requirements To-Be-Considered Criteria for the 200-WA-1 and 200-BC-1 OUs

Citation	Description of Requirement	Rationale for Use	Relevancy	Possible Action(s)
(WAC 246-247-035(1)(a)(i) [adopts by reference 40 CFR 61.12, “Compliance with Standards and Maintenance Requirements”])	Requires the owner or operator of each stationary source of hazardous air pollutants subject to a national emission standard for a hazardous air pollutant to determine compliance with numerical emission limits in accordance with emission tests established in NESHAP, “Emission Tests and Waiver of Emission Tests” (40 CFR 61.13), or as otherwise specified in an individual subpart. Compliance with design, equipment, work practice, or operational standards shall be determined as specified in the individual subpart. Also, maintain and operate the source, including associated equipment for air pollution control, in a manner consistent with good air pollution control practice for minimizing emissions.	Hazardous radionuclide contaminants that would be subject to NESHAP’s Air Pollutant Standards and resultant requirements have the potential to be detected in and emitted from structures, components, debris, soil, or groundwater involved in the remedial actions in the 300 Area NPL Site. Associated design, equipment, work practice, or equipment for radionuclide air pollution control may also be maintained and operated.	ARAR	Investigative and remedial actions involve stationary sources that provide a potential to emit regulated hazardous air pollutants (e.g., vapor extraction systems, decontamination stations, deactivation, demolition, or waste removal or storage activities). Associated design, equipment, work practice, or air emissions controls may be maintained and operated.
(WAC 246-247-035(1)(a)(i) [adopts by reference 40 CFR 61.14, “Monitoring Requirements”])	Requires the owner or operator to maintain and operate each monitoring system as specified in the applicable subpart, and in a manner consistent with good air pollution control practice for minimizing emissions. Approvals of alternatives to any monitoring requirements or procedures are obtained from the regulatory agency.	Hazardous radionuclide contaminants that would be subject to NESHAP’s Air Pollutant Standards and resultant requirements have the potential to be detected in and emitted from structures, components, debris, soil, or groundwater involved in the remedial actions in the 300 Area NPL Site. The hazardous contaminants will be monitored as identified under each applicable NESHAP subpart.	ARAR	Investigative and remedial soil, air, and groundwater monitoring systems, and decontamination and stabilization of contaminated structures, treatment of sludge, and operation of exhausters and vacuums, that may produce airborne emissions of hazardous pollutants to residential areas.

Table F-2. Identification of Potential State of Washington Applicable and Relevant or Appropriate Requirements To-Be-Considered Criteria for the 200-WA-1 and 200-BC-1 OUs

Citation	Description of Requirement	Rationale for Use	Relevancy	Possible Action(s)
(WAC 246-247-035(1)(a)(ii) [adopts by reference 40 CFR 61.92, “Standard”])	Establishes emission standards for radionuclides equivalent to NESHAP, “National Emission Standards for Emissions of Radionuclides Other than Radon from Department of Energy Facilities” (40 CFR 61, Subpart H), by reference. DOE Hanford Site radionuclide airborne emissions shall be controlled so as not to exceed amounts that would cause an exposure to any member of the public of greater than 10 mrem/yr effective dose equivalent.	Hazardous radionuclide contaminants that would be subject to NESHAP; Radionuclide Air Pollutant Standards and resultant requirements have the potential to be detected in and emitted from, structures, components, debris, soil or groundwater involved in the remedial actions in the 300 Area NPL Site.	ARAR	Investigative and remedial soil, air, groundwater monitoring systems and decontamination and stabilization of contaminated structures, treatment of sludge, and operation of exhausters and vacuums, that may produce airborne emissions of hazardous radionuclide pollutants to residential areas.
(WAC 246-247-035(1)(a)(ii) [adopts by reference 40 CFR 61.93, “Emission Monitoring and Test Procedures”])	Specifies that radionuclide emissions shall be determined and effective dose equivalent values to members of the public calculated to determine compliance with the 10 mrem/yr effective dose equivalent standard. Radionuclide emissions shall be collected and measured using approved methods. A quality assurance program shall be conducted that meets the performance requirements described in Appendix B, Method 114. Measurement by methods specified in the paragraph (b) shall be made at all release points that have the potential to discharge radionuclides to the air in quantities that cause an effective dose equivalent in excess of 1 percent of the 10 mrem/yr standard. For other release points that have a potential to release radionuclides into the air,	Hazardous radionuclide contaminants that would be subject to NESHAP; Radionuclide Air Pollutant Standards and resultant requirements have the potential to be detected in and emitted from structures, components, debris, soil, or groundwater involved in the remedial actions in the 300 Area NPL Site. The hazardous contaminants will be monitored as identified under each applicable NESHAP subpart.	ARAR	Investigative and remedial soil, air, and groundwater monitoring systems, and decontamination and stabilization of contaminated structures, treatment of sludge, and operation of exhausters and vacuums, that may produce airborne emissions of hazardous radionuclide pollutants to residential areas.

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Table F-2. Identification of Potential State of Washington Applicable and Relevant or Appropriate Requirements To-Be-Considered Criteria for the 200-WA-1 and 200-BC-1 OUs

Citation	Description of Requirement	Rationale for Use	Relevancy	Possible Action(s)
	periodic confirmatory measurements shall be made to verify the low emissions.			
“General Standards”(WAC 246-247-040(3) and (4))	Requires that emissions be controlled to ensure ALARA-based and Best Available Controls standards are not exceeded.	Hazardous contaminants that would be subject to radionuclide air emission standards and resultant requirements have the potential to be detected in and emitted from structures, components, debris, soil, or groundwater involved in the remedial actions in the 300 Area NPL Site.	ARAR	Investigative and remedial soil, air, and groundwater monitoring systems, and decontamination and stabilization of contaminated structures, treatment of sludge, and operation of exhausters and vacuums that may produce airborne emissions of hazardous radionuclide pollutants to residential areas.
“Monitoring, Testing and Quality Assurance”(WAC 246-247-075)	Establishes the monitoring, testing, and quality assurance requirements for radioactive air emissions. Requires that emissions from nonpoint and fugitive sources of airborne radioactive material be measured. Measurement techniques may include but are not limited to sampling, calculations, smears, or other reasonable method for identifying emissions as determined by the lead agency.	Hazardous contaminants in the 300 Area NPL Site waste sites that would be subject to radionuclide air emission standards and resultant requirements have the potential to be detected in and emitted from structures, components, debris, soil, or groundwater involved in the remedial actions.	ARAR	Investigative and remedial soil, air, and groundwater monitoring systems, and decontamination and stabilization of contaminated structures, treatment of sludge, and operation of exhausters and vacuums that may produce airborne emissions of hazardous radionuclide pollutants to residential areas.

Table F-2. Identification of Potential State of Washington Applicable and Relevant or Appropriate Requirements To-Be-Considered
Criteria for the 200-WA-1 and 200-BC-1 OUs

Citation	Description of Requirement	Rationale for Use	Relevancy	Possible Action(s)
ALARA	= as low as reasonably achievable			
ARAR	= applicable or relevant and appropriate requirement			
BACT	= best available control technology			
CERCLA	= <i>Comprehensive Environmental Response, Compensation, and Liability Act of 1980</i>			
DOE	= U.S. Department of Energy			
IDW	= investigation-derived waste			
NPL	= National Priorities List (40 CFR 300, "National Oil and Hazardous Substances Pollution Contingency Plan," Appendix B, "National Priorities List")			
OU	= operable unit			
RI/FS	= remedial investigation/feasibility study			
RTD	= removal, treatment, and disposal			
<p>* ALARA means as low as reasonably achievable making every reasonable effort to maintain exposures to radiation as far below the 10 mrem/yr dose standard as practical, consistent with which the activity is undertaken, taking into account the state of technology, the economics of improvements in relation to the state of technology, the economics of improvements in relation to benefits to the public health and safety, and other socioeconomic considerations, and in relation to the use of nuclear energy, ionizing radiation, and radioactive materials in the public interest.</p>				

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