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POTENTIAL ARARS ENGINEERED DISPOSAL FACILITY

12/18/90

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REPORT

FEED MATERIALS PRODUCTION CENTER
FERNALD, OHIO
POTENTIAL ARARs
ENGINEERED DISPOSAL FACILITY

Chemical Specific

Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Radionuclide Emissions (Except Airborne Radon-222)	40 CFR 61, Subpart H Emissions of radionuclides to the ambient air from DOE 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 per year.	Applicable	Radioactive materials stored in the EDF could contribute to the dose to members of the public from the air pathway.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Radon-222 Emissions	40 CFR 61, Subpart Q No source at a DOE facility shall emit more than 20 pCi/m^2-s of radon-222 as an average for the entire source during periods of storage and disposal.	Applicable	Radium-226 may be present in the materials stored in the EDF and could contribute to radon-222 emissions from the EDF.	N/A

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Chemical Specific

Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Radioactive Materials in Ohio River and in Receiving Waters Outside the Mixing Zone	OAC 3745-1-32 Gross alpha particle activity (including radium-226, but excluding radon and uranium) shall not exceed 15 pCi/l and combined radium-226 and radium-228 shall not exceed 5 pCi/l in receiving waters of the Ohio River. The concentration of gross total beta particle activity shall not exceed 50 pCi/l; the concentration of total strontium-90 shall not exceed 8 pCi/l in receiving waters of the Ohio River.	Applicable	Radioactive materials stored within the EDF could be released such that they could contribute to radioactivity in receiving waters of the Ohio River.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Prevention of Air Pollution Nuisance	OAC 3745-15-07 The emission or escape into open air from any source whatsoever in such a manner or in such amounts as to endanger the health, safety, or welfare of the public or to cause unreasonable injury or damage to property shall be declared a public nuisance and is prohibited.	Applicable	During the construction and operation of the EDF, air emissions must be controlled to avoid danger to individuals or damage to property.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Control of Fugitive Dust	OAC 3745-17-08 Requires the minimization or elimination of visible emissions of fugitive dust generated during grading, loading, or construction operations, and other practices which emit fugitive dust.	Applicable	The construction of the EDF will require the movement of dirt and other material likely to result in fugitive dust emissions.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Chemicals in Drinking Water (Hazardous Waste Disposal Facility)	40 CFR 264, Subpart F OAC 3745-54-92 to 94 A facility shall not contaminate the uppermost aquifer underlying the waste management area beyond the point of compliance, which 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 area. The concentration of chemicals shall not exceed background levels or MCLs, whichever is higher.	Applicable	The listed chemicals which may be contained in the EDF may migrate into the underlying aquifer and potentially contaminate drinking water systems as a consequence of remedial actions.	N/A

Inorganic Chemicals	MCLs mg/l
Arsenic	0.05
Barium	1.00
Cadmium	0.01
Chromium	0.05
Lead	0.05
Mercury	0.002
Nitrate	10.0
Selenium	0.01
Silver	0.05

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Chemicals in Drinking Water (Hazardous Waste Disposal Facility) (continued)	Organic Chemicals	mg/l		
	Endrin	0.0002		
	Lindane	0.004		
	Methoxychlor	0.1		
	Toxaphene	0.005		
	2, 4-D	0.1		
	2, 4, 5-TP Silvex	0.01		

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Radiation Doses, Levels, and Concentrations in Restricted Areas	10 CFR 20.101-104 OAC 3701-38 Radiation doses, levels, and concentrations for restricted areas shall not exceed specified limits. • Radiation dose standards for individuals in restricted areas • Airborne concentration levels for radionuclides in restricted areas • Radiation exposure limits for minors	Relevant and Appropriate	Radioactive materials in the EDF can contribute radiation doses, levels, and concentrations to individuals in restricted areas, which could exceed the specified limits.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Radiation Dose Limit (All Pathways) for a Land Disposal Facility	10 CFR 61.41 Annual dose equivalent limit of 25 mrem (whole body), 75 mrem (thyroid) and 25 mrem (any other organ) for any member of the public due to radioactive materials which may be released from a land disposal facility.	Relevant and Appropriate	The requirement is not applicable since the facility is exempt from NRC licensing requirements. The requirement is relevant and appropriate in that it provides a level of protection for the public which is consistent with the requirements for commercial low-level waste disposal facilities.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Inorganic Chemicals in Drinking Water	40 CFR 141.11 OAC 3745-81-11 The following maximum contaminant levels (MCLs) for inorganic chemicals are the maximum allowable level of a contaminant in water which is delivered to a free flowing outlet of the ultimate user of a public water system. • Arsenic 0.05 mg/l • Barium 1.00 mg/l • Cadmium 0.010 mg/l • Chromium 0.05 mg/l • Lead 0.05 mg/l • Mercury 0.002 mg/l • Nitrate 10.0 mg/l • Selenium 0.01 mg/l • Silver 0.05 mg/l	Relevant and Appropriate	The requirement is not applicable since no public water system (as defined in 40 CFR 141) is involved. It is relevant and appropriate to protecting drinking water sources from the same contaminants found in the EDF. These contaminants may migrate from the EDF into the underlying aquifer.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Organic Chemicals in Drinking Water	40 CFR 141.12 OAC 3745-81-12 The following MCLs for organic chemicals are the maximum allowable levels of a contaminant in water which is delivered to a free flowing outlet of the ultimate user of a public water system: • Chloroform 0.1 mg/l • Ethyl-benzene 0.7 mg/l* • Pentachlorophenol 0.2 mg/l* • PCBs 0.0005 mg/l* • Tetrachloroethylene 0.005 mg/l* • Toluene 2.0 mg/l* • Trichloroethylene 0.005 mg/l • 1,1,1-Trichloroethane 0.2 mg/l • Xylene 10.0 mg/l* * Proposed	Relevant and Appropriate	The requirement is not applicable since no public water system (as defined in 40 CFR 141) is involved. It is relevant and appropriate to protecting drinking water sources from the same contaminants found in the EDF. These contaminants may migrate or leach into the underlying aquifer from the EDF.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale For Implementation	Alternative Number
Radionuclides in Drinking Water	40 CFR 141.15 OAC 3745-81-15 Maximum Contaminant Levels for radioactivity in community water systems are set as follows: • 5 pCi/l of combined radium-226 and radium-228 • 15 pCi/l of gross alpha particle activity (including radium-226, but excluding radon and uranium) 40 CFR 141.16 OAC 3745-81-16 The average annual concentration of beta particle and photon (i.e., gamma) 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. The concentration limit for strontium-90 is 8 pCi/l.	Relevant and Appropriate	Radioactive materials from the EDF could be released such that the radioactive materials could contribute to radioactivity in community water systems.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Residual Radioactive Material	40 CFR 192, Subparts A and C Control of residual radioactive material from inactive uranium processing sites shall be designed to: • Be effective for up to 1000 years, to the extent reasonably achievable, and in any case, for at least 200 years. • Provide reasonable assurance that releases of radon-222 from residual radioactive material to the atmosphere will not exceed an average release rate of 20 pCi/m^2-s or increase the annual average concentration of radon-222 in air at or above any location outside the disposal site by more than 0.5 pCi/l.	Relevant and Appropriate	Radioactive materials in the EDF will include residues from uranium processing. Requirements for design of controls should be consistent with design for control of other residual radioactive materials such as mill tailings.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Chemicals in Drinking Water	40 CFR 141.50 - 141.51 - National Primary Drinking Water Standards OAC 3745-81-11 Maximum Contaminant Level Goals (MCLGs) for potential chemicals of concern in community water systems are as follows: Cadmium — 0.005 MCLGs (mg/l) Ethylbenzene — 0.7 Lead — 0.02 Mercury — 0.002 Toluene — 2.0	To be considered	Contents of the EDF may migrate into the underlying aquifer and into drinking water systems. Proposed MCLGs are to be considered together with MCLs in establishing acceptable levels of protectiveness for human health and the environment.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Radiation Dose Limit (All Pathways)	DOE Order 5400.5, Chapter II, Section 1.a 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 from all exposure pathways.	To be considered	Radiation sources within the EDF could contribute to the total dose to members of the public via all pathways from this DOE facility.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Radiation Dose Limit (Drinking Water Pathway)	DOE Order 5400.5, Chapter II, Section 1.d Provide a level of protection for persons consuming water from a public drinking water supply operated by the DOE so that persons consuming water from the supply shall not receive an effective dose equivalent greater than 4 mrem in a year. For multiple radionuclides, the sum of the effective dose equivalents from the radionuclides (excluding radium-226, radium-228, and radon) shall not exceed 4 mrem in a year from drinking water.	To be considered	Radioactive materials within the EDF could contribute to the dose to members of the public from drinking water.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Chemical Reference Dose Guidance Intended to be Protective of Human Health	U.S. EPA Health Effects Assessment Guidance - "Health Effects Assessment Summary Tables (HEAST)" and/or "Integrated Risk Information System" Beryllium 0.005 mg/kg/d Manganese 0.2 mg/kg/d Selenium 0.003 mg/kg/d Thallium 0.0007 mg/kg/d Vanadium 0.007 mg/kg/d Zinc 0.2 mg/kg/d	To be considered	In the absence of an applicable or relevant and appropriate standard for a contaminant, guidance documents are to be considered when establishing concentrations of contaminants that are protective of human health and the environment.	N/A

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Location Specific

Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Floodplain/ Wetlands Environmental Review Requirements	10 CFR 1022 DOE must comply with Executive Order 11988 and Executive Order 11990, to the extent possible, through applicable DOE NEPA procedures. DOE shall also determine the applicability of the floodplain management and wetlands protection requirements of 10 CFR 1022, Subpart B.	Applicable	The EDF may be constructed in or near a floodplain or wetlands area.	N/A

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Location Specific

Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Area Affecting Stream or River	U.S. Fish and Wildlife Coordination Act 16 U.S.C. 661 40 CFR 6.302 (a) Adverse impacts of activities associated with the destruction or loss of wetlands are to be avoided where practicable alternatives exist. 40 CFR 6.302 (g) After consultation with the U.S. Fish and Wildlife Service and appropriate State agency, actions necessary to protect fish and wildlife from impacts associated with modifying streams or areas affecting streams are to be implemented.	Applicable	Construction of the EDF may impact Paddys Run and adjacent wetlands areas. Such action should be coordinated with State and Federal wildlife agencies to ensure preservation of wetlands and aquatic biota and wildlife.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Location Standards for Hazardous Waste Treatment, Storage, or Disposal Facilities	40 CFR 264.18 OAC 3745-54-18 • Floodplain considerations- TSD facilities located in 100-year floodplains must be designed, constructed, operated and maintained to prevent washout of hazardous waste by a 100-year flood unless: - procedures are implemented to allow all waste to be removed safely before flooding to a permitted location not vulnerable to flooding, or - no adverse effects on human health or the environment will result if washout occurs considering the characteristics of the waste and potential impacts of a washout on surface waters, sediments and surface soils within the floodplain.	Applicable	The EDF may be constructed in or near a 100-year floodplain.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Floodplain Management	Executive Order 11988 Federal agencies proposing actions to be located in a floodplain must first evaluate the potential adverse effects those actions may have on the natural and beneficial values served by the floodplain.	To be considered	The EDF may be constructed in or near a floodplain.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Protection of Wetlands	Executive Order 11990 Federal agencies are directed to avoid construction located in wetlands unless the agency head finds: (1) no practical alternative to such construction, and (2) the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use. Federal agencies proposing actions that may adversely impact wetlands shall consider certain factors relevant to the proposal's effect on the survival and quality of the wetlands. These include: a) public health, safety and welfare, including water supply, quality, recharge and discharge; pollution; flood and storm hazards; and sediment and erosion.	To be considered	The EDF may be constructed in or near a wetlands area.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Protection of Wetlands (continued)	b) maintenance of natural systems, including conservation and long-term productivity of existing flora and fauna, species and habitat diversity and stability, hydrologic utility, fish, wildlife, timber, and food and fiber resources; and c) other uses of wetlands in the public interest, including recreational, scientific and cultural uses.			

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Action Specific

Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Treatment, Storage, or Disposal Facility Standards	40 CFR 264, Subpart B, General Standards • Waste Analysis (40 CFR 264.13, OAC 3745-54-13)- Operators of a facility must obtain a detailed chemical and physical analysis of a representative sample of each hazardous waste to be treated, stored, or disposed of at the facility prior to treatment, storage, or disposal. • Security (40 CFR 264.14, OAC 3745-54-14)- Operators of a facility must prevent the unknowing or unauthorized entry of persons or livestock into the active portions of the facility, maintain a 24-hour surveillance system, or surround the facility with a controlled access barrier and maintain appropriate warning signs at facility approaches.	Applicable	Soils and sediments excavated or dredged from the site and treatment sludges and residues generated on the site must be treated, stored (if more than 90 days) and disposed of in accordance with TSD Facility Standards if they contain listed or characteristic hazardous wastes.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Treatment, Storage, or Disposal Facility Standards (continued)	• Inspections (40 CFR 264.15, OAC 3745-54-15)- Operators of a facility must develop a schedule and regularly inspect monitoring equipment, safety and emergency equipment, security devices and operating and structural equipment that are important to preventing, detecting or responding to environmental or human health hazards, promptly or immediately or immediately remedy defects, and maintain an inspection log. • Training (40 CFR 264.16, OAC 3745-54-16)- Operators must train personnel within 6 months of their assumption of duties at a facility in hazardous waste management procedures relevant to their positions including emergency response training.			

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Treatment, Storage, or Disposal Facility Preparedness and Prevention	40 CFR 264, Subpart C TSD operators must design, construct, maintain and operate facilities to minimize the possibility of a fire, explosion or any unplanned sudden or non-sudden release of hazardous waste to air, soil, or surface water which could threaten human health or the environment. 40 CFR 264.32 OAC 3745-54-32 All facilities must be equipped with an internal communication or alarm system, a telephone, or a two-way radio for calling outside emergency assistance, fire control, spill control, and decontamination equipment and water at an adequate volume and pressure to supply water hose streams, foam producing equipment, automatic sprinklers or water spray systems.	Applicable	Soils and sediments excavated or dredged from the site and treatment sludges and residues generated on the site must be treated, stored (if more than 90 days), and disposed of in accordance with TSD Facility Standards if they contain listed or characteristic hazardous wastes.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Treatment, Storage, or Disposal Facility Preparedness and Prevention (continued)	40 CFR 264.33, OAC 3745-54-33 All fire and spill- control and decontamination equipment must be tested and maintained as necessary to assure proper emergency operation. 40 CFR 264.34, OAC 3745-54-34 All personnel must have immediate access to emergency communication or alarm systems whenever hazardous waste is being handled at the facility. 40 CFR 264.35, OAC 3745-54-35 Aisle space must be sufficient to allow unobstructed movement of personnel, fire and spill control, and decontamination equipment. 40 CFR 264.37, OAC 3745-54-37 Operators must attempt to make arrangements, appropriate to the waste handled, for emergency response by local and state fire, police and medical personnel.			

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Treatment, Storage, or Disposal Facility Contingency Plan and Emergency Procedures	40 CFR 264, Subpart D Each facility operator must have a contingency plan designed to minimize hazards to human health or the environment due to fires, explosions, or any unplanned releases of hazardous waste constituents to the air, soil, or surface/groundwater. 40 CFR 264.52 OAC 3745-54-52 Contingency plans should address procedures to implement a response to hazardous substance incidents, internal and external communications, arrangements with local emergency authorities, an emergency coordinator list, a facility emergency equipment list indicating equipment descriptions and locations and a facility personnel evacuation plan.	Applicable	Soils and sediments excavated or dredged from the site and treatment sludges and residues generated on the site must be treated, stored (if more than 90 days), and disposed of in accordance with TSD Facility Standards if they contain listed or characteristic hazardous wastes.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Treatment, Storage, or Disposal Facility Contingency Plan and Emergency Procedures (continued)	40 CFR 264.55 OAC 3745-54-55 Each facility must have an emergency coordinator who has responsibility for coordinating all emergency response measures, is on the premises or on call at all times, is thoroughly familiar with all aspects of the contingency plan, facility operations, location and characteristics of waste handled, location of pertinent records, and facility layout, and who has the authority to commit the resources necessary to implement the contingency plan.			

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Treatment, Storage, or Disposal Facility Operating Record	40 CFR 264, Subpart E 40 CFR 264.73, OAC 3745-54-73-Operating Record requirements Operators must maintain a written operating record at the facility which contains the following: • description and quantity of each hazardous waste received; • method(s) and date(s) of treatment as required by Appendix I; • location of each hazardous waste received and quantity at each location (including a location map for disposal facility); • inspection and monitoring records; and • other records and reports as specified.	Applicable	Records on hazardous wastes from the site which are treated, stored and disposed of must be maintained in accordance with TSD facility standards.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Treatment, Storage, or Disposal Facility Groundwater Monitoring and Response Requirements	40 CFR 264, Subpart F Point of Compliance OAC 3745-54-95 The point of compliance is the vertical surface located at the hydraulically downgradient limit of the waste management area that extends down into the uppermost aquifer. Groundwater Monitoring Owners and operators of new hazardous waste disposal facilities must conduct a groundwater monitoring program in accordance with 40 CFR 264.97 (OAC 3745-54-97). This must include, if necessary, a detection monitoring program under 40 CFR 264.99 (OAC 3745-54-99) and a corrective action program under 40 CFR 264.100 (OAC 3745-55-01) if a groundwater protection standard is exceeded or if the concentration limits established under 40 CFR 264.94 (OAC 3745-55-94) are exceeded between the compliance point and the downgradient facility property boundary.	Applicable	Requirement is applicable where wastes are placed in new, replacement or expanded hazardous waste disposal facilities to insure hazardous substances are not leaching out to the soil or groundwater.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Closure with No Post-closure Care	40 CFR 264.111 OAC 3745-66-11 General performance standard requires elimination of need for further maintenance and control; elimination of post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products. 40 CFR 264.114 OAC 3745-66-14 During the partial and final closure, all contaminated equipment, structures and soils must be properly disposed.	Applicable	The areas from which the wastes were removed for disposal must meet health-based levels in order to preclude the requirement for post-closure care and monitoring.	N/A

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Chemical, Location, or Action,	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Treatment (in a Unit)	40 CFR 264, Subpart J (Tanks) OAC 3745-55-90 Design and operating standards for tank unit within which hazardous waste is stored.	Applicable	Design criteria and operating standards for tank storage units is applicable for alternatives utilizing storage in a tank prior to disposal.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Construction of Hazardous Waste Disposal Facilities	40 CFR 264.301 OAC 3745-66-01 Minimum Technology Requirements Install two liners or more, including a top liner that prevents waste migration into the liner, and a bottom liner that prevents waste migration through the liner. Install leachate collection system above and between liners. Construct run-on and run-off control system capable of handling the peak discharge of a 25-year storm. Control wind dispersion of particulates.	Applicable	Requirement is applicable to new, replacement or expanded hazardous waste disposal facility to prevent hazardous substances from being leached into surrounding soil and groundwater.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Capping	40 CFR 264.310(a) OAC 3745-66-11 Placement of a cap over waste (e.g., closing a landfill, or closing a waste pile as a landfill, or similar action) requires a cover designed and constructed to: • Provide long-term minimization of migration of liquids through capped area; • Function with minimum maintenance; • Promote drainage and minimize erosion or abrasion of the cover; • Accommodate settling and subsidence so that the cover's integrity is maintained; and • Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.	Applicable	Disposal in a landfill will require a cap to prevent migration of waste constituents due to leaching. The requirement is applicable if the wastes contain hazardous constituents, pollutants or contaminants.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Capping (continued)	40 CFR 264.310 (b) OAC 3745-66-11 • Prevent run-on and run-off from damaging cover. • Protect and maintain surveyed benchmarks used to locate waste cells (landfills, waste piles). • Maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necesary to correct the effects of settling, subsidence, erosion, or other events, monitoring of leachate and groundwater monitoring required in 40 CFR 264, Subpart F.			

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Ohio Water Well Standards	OAC 3745-9-10 - Abandonment of Test Holes and Wells Upon completion of testing, a test hole or well shall be either completely filled with grout or such material as will prevent contaminants from entering groundwater.	Applicable	Test borings and wells may be installed and/or closed as part of siting of the EDF.	All

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Land Disposal On-Site	10 CFR 61, Subpart C Land disposal facilities must be sited, designed, operated, closed, and controlled after closure so that reasonable assurance exists that exposure to humans are within the limits established in the following performance objectives: • Protection of any inadvertent intruder into the disposal site at any time after active institutional controls over the disposal site are removed. • Operations at the disposal facility must be conducted in accordance with 10 CFR 20. • Long-term stability and elimination of the need (to the extent practicable) for ongoing active maintenance of the disposal site following closure so that only surveillance, monitoring, or minor custodial care are required.	Relevant and Appropriate	Facilities which are to be used for on-site land disposal of radioactive materials should meet the performance objectives of land disposal facilities for similar radioactive materials from NRC licensees.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Land Disposal On-Site	10 CFR 61, Subpart D Technical requirements for land disposal facilities for radioactive waste must be satisfied. These include: • Disposal site suitability requirements for land disposal; • Design criteria for a land disposal site; • Operation and closure criteria; • Environmental monitoring requirements; • Waste classification requirements; and • Waste characteristics requirements.	Relevant and Appropriate	Facilities which are to be used for on-site land disposal of radioactive materials should meet the performance objectives of land disposal facilities for similar radioactive materials from NRC licensees.	N/A

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Action Specific

Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Discharge of Treatment System Effluent	40 CFR 122.41 OAC 3745-33-05 Monitoring Requirements Discharges must be monitored to assure compliance. Discharges will be monitored for: • the mass of each pollutant • the volume of each pollutant • frequency of discharge and other measurements as appropriate. 40 CFR 136.1 - 136.4 Approved test methods must be followed for waste constituents to be monitored. Detailed requirements for analytical procedures and quality controls are provided. Sample preservation procedures, container materials, and maximum allowable holding times are prescribed.	Relevant and Appropriate	During operation of the EDF any point source discharges from the facility must be monitored and treated if necessary.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Discharge of Treatment System Effluent (continued)	40 CFR 122.44(a) Best Available Technology Use of best available technology (BAT) economically achievable is required to control toxic and nonconventional pollutants. Use of best conventional pollutant control technology (BCT) is required to control conventional pollutants. Technology-based limitations may be determined on a case-by-case basis. 40 CFR 122.44 OAC 3745-1-07 Water Quality Standards Applicable federally approved State water quality standards must be complied with. These standards may be in addition to or more stringent than other Federal effluent standards under the CWA. 40 CFR 122.44(e) Discharge limitations must be established at more stringent levels than technology-based standards for toxic pollutants.			

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Discharge of Treatment System Effluent (continued)	40 CFR 125.100 Best Management Practices Develop and implement a Best Management Practices (BMP) program to prevent the release of toxic or hazardous constituents to waters of the U.S. 40 CFR 125.104 The BMP program must: • Establish specific procedures for the control of toxic and hazardous pollutant spills and runoff. • Include a prediction of direction, rate of flow, and total quantity of toxic and hazardous pollutants where experience indicates a reasonable potential for equipment failure.			

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Land Disposal On-Site	DOE Order 5820.2A, Chapter III DOE solid low-level wastes shall be managed in accordance with DOE Order 5820.2A, Chapter III and the additional requirements cited therein. Low-level radioactive wastes must be sufficiently characterized as to: • Physical & chemical characteristics • Total volume (container) • Total weight (container) • Major radionuclides and concentrations in order to permit proper segregation, treatment, storage, and disposal. Prior to disposal, low-level waste shall be treated as appropriate to: • Meet performance objectives • Reduce volume, improve stability, reduce potential for water infiltration.	To be considered	Radioactive materials on the site include materials classified as low-level waste and are to be managed in accordance with DOE requirements for low-level waste.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Land Disposal On-Site (continued)	Waste treatment facilities shall: • Meet NEPA documentation requirements • Be managed with proper operating, maintenance and recordkeeping procedures, personnel training, monitoring and emergency response procedures. Low-level waste treatment facilities must be properly constructed, maintained, and operated. Prior to acceptance for disposal, low-level waste must: • Contain as little non-corrosive free liquid as possible including less than 1% by volume in the disposal container, or • 5% of the volume in stabilized form,			

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Land Disposal On-Site (continued)	• Not be packaged in cardboard or fiberboard boxes, unless they meet DOT requirements and must have minimum void space • Not be capable of detonation or explosion, decomposition or reaction, explosive reaction with water, generation of toxic gases or fumes. • Not be pyrophoric • Not be flammable Disposal facility operators are to: (a) Develop and implement operating procedures that: (1) Protect the environment and the health and safety of the public and facility personnel			

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Land Disposal On-Site (continued)	(2) Secure the facility (3) Minimize need for long term control (4) Meet closure/post-closure requirements			
	(b) Establish permanent markers for excavations and monitor wells			
	(c) Establish procedures and include training, emergency response and unusual occurence reports			
	(d) Minimize voids between containers			
	(e) Insure that active waste disposal operations will not affect filled disposal units.			
	An environmental monitoring program in accordance with DOE Orders 5400.5 and 5400.xy and designed to measure effluent releases, radionuclide migration, subsidence, and changes in disposal site parameters (trends).			

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Land Disposal On-Site (continued)	The media to be monitored may include, but are not limited to: soil-surface and subsurface, air, water-surface and subsurface, and water-saturated and unsaturated zones.			

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Land Disposal On-Site	DOE Order 5820.2A, Chapter IV DOE waste containing byproduct material shall be stored, stabilized in-place, and/or disposed of consistent with the requirements of the residual radioactive material guidelines contained in 40 CFR 192.	To be considered	Some radioactive materials on the site meet the definition of byproduct material (DOE Order 5820.2A, Attachment 1, page 1, paragraph 3) and therefore are to be managed in accordance with DOE requirements for waste containing byproduct materials.	

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Remediation of Sites Having Radioactive Wastes from Uranium Processing	DOE Plan for Implementing EPA Standards for UMTRA Sites (UMTRA-DOE/AL-163)(January 1984)- Presents direction for implementing EPA standards on uranium mill tailings remedial action sites. DOE Technical Approach Document-Revision II (UMTRA-DOE/AL-050425.0002)(December 1987)- Presents the technical approach for remediation of uranium mill tailings remedial action sites. DOE Remedial Action Planning and Disposal Cell Design (UMTRA-DOE/AL 400503)(January 1989)- Presents direction for complying with the proposed 40 CFR 192 for planning and disposal cell design for uranium mill tailings remedial action sites.	To be considered	Materials on the site have similar chemical and radiological properties as uranium mill tailings. Directions for remediation of mill tailings sites contained within these documents can provide guidance not found in promulgated regulations.	N/A

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Chemical, Location, or Action	Requirement	ARAR/TBC	Rationale for Implementation	Alternative Number
Remediation of Sites Having Radioactive Wastes from Uranium Processing (continued)	DOE Project Surveillance and Maintenance Plan (UMTRA-DOE/AL 350124)- Presents direction for surveillance and maintenance of uranium mill tailings remedial action sites.			

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Disposal Site Selection	DOE Order 5820.2A, Chapter III, 3, i., (7) Specifies the requirements for selecting a low-level waste disposal site at a DOE facility. These general requirements include: • Development of disposal site selection criteria (based on planned waste confinement technology) • Evaluation of the site in accordance with the NEPA process • Verification that hydrogeologic characteristics of the site will protect the groundwater resource • Consideration of potential for natural hazards such as floods, erosion, tornadoes, and earthquakes • Evaluation of the impact of the site on current and projected populations and on land use resource development plans and nearby public facilities.	To be considered	Site selection for the EDF must comply with the requirements of a low-level waste facility at a DOE facility.	N/A