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**TRANSMITTAL OF THE DOE ORDER 5820.2A CERTIFICATION OF
COMPLIANCE LETTER - (POLICY FOR DEMONSTRATING COMPLIANCE
WITH DOE ORDER 5820.2A FOR ONSITE MANAGEMENT AND DISPOSAL C
ENVIRONMENTAL RESTORATION LOW-LEVEL WASTE UNDER CERCLA)**

10/15/96

**DOE-0014-97
DOE-FN EM-40/FORS
23
MEMORANDUM**

United States Government

Department of Energy

Fernald Area Office

memorandum

OCT 15 1996

DATE: DOE-0014-97

REPLY TO
ATTN OF: FEMP:Warner

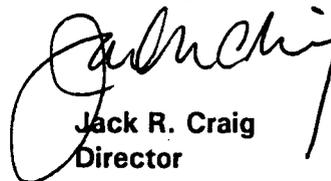
SUBJECT: TRANSMITTAL OF THE DOE ORDER 5820.2A CERTIFICATION OF COMPLIANCE LETTER

TO: James Owendoff, EM-40, FORS

This letter certifies the compliance of the planned On-Site Disposal Facility (OSDF) at the Fernald Environmental Management Project (FEMP) with the "Policy for Demonstrating Compliance with DOE Order 5820.2A for Onsite Management and Disposal of Environmental Restoration Low-Level Waste Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)," dated May 31, 1996, and the substantive requirements of DOE Order 5820.2A. In accordance with the above-stated policy, this letter also transmits the CERCLA/DOE Order 5820.2A Roadmap to the Office of Eastern Area Programs and to the Office of Waste Management for information. The Roadmap documents how the CERCLA process at the FEMP has or will comply with the substantive requirements of DOE Order 5820.2A, Chapter III, Management of Low-Level Waste.

If you have any questions regarding this transmittal, please contact me at (513) 648-3101.

Sincerely,



Jack R. Craig
Director

Attachment: As Stated

cc w/att:

P. Bubar, EM-35/GTN
S. Fauver, EM-425/GTN
J. Lehr, EM-425/GTN
P. Hamric, DOE-OH

cc w/o att:

J. Jalovec, DOE-FEMP
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J. Reising, DOE-FEMP
R. Warner, DOE-FEMP
C. Esselman, FDF/52-2
M. Hickey, FDF/52-2
U. Kumthekar, FDF/52-2
C. Little, FDF/2
P. Riley, FDF/52-5
AR Coordinator/78
EDC, FDF/52-7

**CERCLA/DOE ORDER 5820.2A ROADMAP FOR THE ON-SITE DISPOSAL FACILITY
AT THE FERNALD ENVIRONMENTAL MANAGEMENT PROJECT**

INTRODUCTION

This Roadmap provides specific examples of how the On-Site Disposal Facility (OSDF) at the Fernald Environmental Management Project (FEMP) has substantively met the objectives and requirements of Chapter III of DOE Order 5820.2A. The examples specifically identify how each performance objective or requirement was/will be satisfied at the FEMP via the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process.

DOE Order 5820.2A, Chapter III, is applicable to the FEMP because selected remedies for all of the five operable units include in part, on-site disposal. The OSDF will contain low-level waste (LLW) from the remedial activities to be conducted under CERCLA. This Roadmap demonstrates that the FEMP CERCLA remedial activities of evaluation, design, construction, and waste placement in the OSDF has/will substantively satisfy the applicable requirements and intent of DOE Order 5820.2A, Chapter III, Management of LLW.

The CERCLA process satisfies the requirements and intent of DOE Order 5820.2A through compliance with applicable or relevant and appropriate requirements (ARARs), to be considered criteria (TBCs), and the information and planning that is derived during the implementation and completion of the CERCLA process, such as the completion of the CERCLA-mandated remedial investigations, feasibility studies, remedial designs, and remedial action documents. This Roadmap will refer to the requirements that mandate the CERCLA documents, and the guidance used for implementation, as CERCLA Drivers. The ARARs, TBCs, and CERCLA Drivers serve as the basis for complying with the requirements of DOE Order 5820.2A and the Roadmap document demonstrates that compliance has been attained. This roadmap is specific to the FEMP alone. The FEMP CERCLA process and associated ARARs and TBCs that have been utilized will differ slightly from the ARARs and TBCs that will be employed at other CERCLA sites within the DOE complex. Page 21 of this document includes a table that summarizes the requirements of DOE Order 5820.2A that have been satisfied through the FEMP CERCLA process. In order to facilitate the clear understanding of the roadmap, included as attachments I and II are the "Policy for Demonstrating Compliance with DOE Order 5820.2A for Onsite Management and Disposal of Environmental Restoration Low-Level Waste Under the Comprehensive Environmental Response, Compensation, and Liability Act", and DOE Order 5820.2A, respectively.

**IDENTIFICATION OF COMPLIANCE WITH THE SUBSTANTIVE REQUIREMENTS OF
DOE ORDER 5820.2A**

DOE ORDER 5820.2A CHAPTER III (3)(a) PERFORMANCE OBJECTIVES

Purpose

This section of DOE Order 5820.2A identifies the performance-based objectives that a LLW disposal facility must achieve. The objectives are: (1) protection of public health and safety; (2) releases to the environment from the LLW disposal facility shall be as low as reasonably achievable (ALARA), and must not result in an effective dose equivalent (EDE) that exceeds 25 mrem/year to any member of the public; (3) prevent the possibility of a 100 mrem/year continuous exposure or 500 mrem acute exposure of an inadvertent intruder after institutional controls have terminated (100 years); and (4) protect groundwater resources consistent with Federal, State, and local requirements.

Statement of Compliance for 3(a)(1)

Compliance with this requirement was attained through applying the two CERCLA threshold criteria as identified in the National Contingency Plan (NCP), which are protecting human health and the environment and identifying and complying with ARARs. Substantive compliance with this requirement was further accomplished through the design of the OSDF and the establishment of waste acceptance criteria (WAC), which will result in the dose to the public being lower than the established exposure limits and by providing protection to ground-water resources.

Identification of ARARs, TBCs, and/or CERCLA Drivers for 3(a)(1)

CERCLA Driver: 40 CFR 300.430 (e)(9)(iii)(A), CERCLA Threshold Criteria

Statement of Compliance for 3(a)(2)

Compliance with this requirement was attained through the evaluation of all sources of risk to the public which was completed in the CERCLA Feasibility Study (FS) risk assessments and the Comprehensive Response Action Risk Evaluation (CRARE) performed for the FEMP. The designed containment system (multi-layer cap and liner) of the OSDF eliminates all exposure pathways except the groundwater pathway. Protecting the public through the groundwater pathway was addressed by meeting applicable Safe Drinking Water Act (SDWA) maximum contaminant level (MCL) groundwater standards. The established WAC for the OSDF ensure that the MCLs are not exceeded in the groundwater for 1,000 years.

By meeting the proposed SDWA uranium MCL of 20 parts per billion (ppb), the exposure dose from groundwater will be below the 25 mrem per year EDE requirement for 1,000 years into the future.

Identification of ARARs, TBCs, and/or CERCLA Drivers for 3(a)(2)

ARARs: Ohio Administrative Code (OAC) 3745-27-08 (C), Landfill Construction
40 CFR 61.92-.93, National Emissions Standards for Hazardous Air
Pollutants (NESHAPS) for emissions of radionuclides other than radon from
the Department facilities
40 CFR 61.192, NESHAPS for emissions of radon from Department
facilities

TBCs: DOE Order 5400.5 Chapter II (1)(a), (b), (3)(a)(5), Chapter IV (4)(c),
Radiation Protection of the Public and the Environment
DOE Order 5820.2A Chapter III (3)(a)(2), Protection of the General
Population from Releases of Radioactivity

CERCLA Drivers: 40 CFR 300.430, Remedial Investigation/Feasibility Study (RI/FS)
and selection of remedy
40 CFR 300.435, Remedial Design (RD)/Remedial Action (RA),
operation and maintenance
USEPA, 1988, Guidance for Conducting Remedial Investigations
and Feasibility Studies Under CERCLA
USEPA, 1988, Superfund Exposure Assessment Manual
USEPA, 1989, Risk Assessment Guidance for Superfund:
Human Health Evaluation Manual, Part A, Interim Final
USEPA, Guidance on Preparing Superfund Decision Documents:
The Proposed Plan (PP), The Record of Decision (ROD),
Explanation of Significant Differences, The ROD Amendment

Statement of Compliance for 3(a)(3)

Compliance with this requirement was satisfied through the implementation of permanent institutional controls, and the long-term permanence design of the OSDF. The Operable Unit 2 (OU2) and Operable Unit 5 (OU5) RODs specify that the final land use for the OSDF be restricted with perpetual federal ownership and maintenance of institutional controls (such as warning signs and fencing). The NCP and the OU2 and OU5 RODs also specify the design of a containment system with long-term permanence. The OSDF has been designed with a nine-foot multi-layer cap system which includes a three-foot rock barrier layer, and a five-foot multi-layer liner system. To ensure proper performance of the institutional controls and the containment system, the overall performance of the OSDF will be reviewed every

five years as required by the NCP. The implementation of perpetual institutional controls and the designed containment system precludes the inadvertent intrusion exposure scenario.

Identification of ARARs, TBCs, and/or CERCLA Drivers for 3(a)(3)

ARARs: OAC 3745-27-08 (C), Landfill Construction
 OAC 3745-27-11 (H), Landfill Final Closure
 OAC 3745-27-14 (A), Landfill Post-Closure Care

TBCs: DOE Order 5400.5 Chapter II (1)(a)(b), Radiation Protection of the Public and the Environment

CERCLA Drivers: 40 CFR 300.430, RI/FS and selection of remedy
 USEPA, 1988, Guidance for Conducting RI/FS Under CERCLA
 USEPA, 1988, Superfund Exposure Assessment Manual
 USEPA, 1989, Risk Assessment Guidance for Superfund: Human Health Evaluation Manual, Part A, Interim Final
 USEPA, Guidance on Preparing Superfund Decision Documents: The PP, the ROD, Explanation of Significant Differences, and the ROD Amendment

Statement of Compliance for 3(a)(4)

Compliance with this requirement was met through the development of the WAC and design of the OSDF. These actions resulted in the protection of the groundwater resources in accordance with all applicable groundwater standards. The groundwater modeling for the OSDF WAC development demonstrated that the aquifer would be protected to the proposed uranium MCL for 1,000 years into the future. The DOE Fernald Area Office (DOE-FN), DOE Headquarters (DOE-HQ), United States Environmental Protection Agency (USEPA), and Ohio Environmental Protection Agency (OEPA) have approved the modeling in the OU2 and OU5 FSs.

Identification of ARARs, TBCs, and/or CERCLA Drivers for 3(a)(4)

CERCLA Drivers: 40 CFR 300.430, RI/FS and selection of remedy
 40 CFR 300.435, RD/RA, operation and maintenance
 USEPA, 1988, Guidance for Conducting RI/FS Under CERCLA
 USEPA, 1988, Superfund Exposure Assessment Manual
 USEPA, 1989, Risk Assessment Guidance for Superfund: Human Health Evaluation Manual, Part A, Interim Final
 USEPA, Guidance on Preparing Superfund Decision Documents: The PP, the ROD, Explanation of Significant Differences, and the

ROD Amendment

References for Requirement 3(a)

OU2 Risk Assessment (OU2 FS, Appendix C Risk Evaluation), OU5 Risk Assessment (OU5 FS, Appendix F Fate and Transport Modeling, Appendix G Short Term Risk Assessment, and Appendix H CRARE), and OU3 Risk Assessment (OU3 FS, Appendix H Short Term Risk Assessment, Appendix I CRARE), OU2 ROD, OU5 ROD, OU3 ROD, OSDF Design Criteria Package (DCP), OSDF Design Specifications, OSDF Design Calculations, OSDF Design Drawings, OSDF Support Plans (Impacted Materials Placement Plan [IMPP])

DOE ORDER 5820.2A CHAPTER III (3)(b) PERFORMANCE ASSESSMENT**Purpose**

This section requires that a LLW disposal facility demonstrate that compliance with the performance objectives in Chapter III (3)(a) are maintained.

Statement of Compliance with 3(b)(1),(2),(3)

See discussion above stating compliance with 3(a)(1), (2), (3), and (4).

Identification of ARARs, TBCs, and/or CERCLA Drivers for 3(b).(1).(2).(3)

ARARs: OAC 3745-27-08 (C), Landfill Construction
 OAC 3745-27-11 (H), Landfill Final Closure
 OAC 3745-27-14 (A), Landfill Post-Closure Care
 40 CFR 61.92-93, NESHAPS for emissions of radionuclides other than radon from the Department facilities
 40 CFR 61.192, NESHAPS for emissions of radon from Department facilities

TBCs: DOE Order 5400.5 Chapter II (1)(a), (b), (3)(a)(5), Chapter IV (4)(c), Radiation Protection of the Public and the Environment
 DOE Order 5820.2A Chapter III (3)(a)(2), Protection of the General Population from Releases of Radioactivity

CERCLA Drivers: 40 CFR 300.430 (e)(9)(iii)(A), CERCLA Threshold Criteria
 40 CFR 300.430, RI/FS and selection of remedy
 40 CFR 300.435, Remedial Design (RD)/Remedial Action (RA), operation and maintenance

USEPA, 1988, Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA
 USEPA, 1988, Superfund Exposure Assessment Manual
 USEPA, 1989, Risk Assessment Guidance for Superfund: Human Health Evaluation Manual, Part A, Interim Final
 USEPA, Guidance on Preparing Superfund Decision Documents: The Proposed Plan (PP), The Record of Decision (ROD), Explanation of Significant Differences, The ROD Amendment

References for Requirement 3(b)

OU2 Risk Assessment (OU2 FS, Appendix C Risk Evaluation), OU5 Risk Assessment (OU5 FS, Appendix F Fate and Transport Modeling, Appendix G Short Term Risk Assessment, and Appendix H CRARE), and OU3 Risk Assessment (OU3 FS, Appendix H Short Term Risk Assessment, Appendix I CRARE), OU2 ROD, OU5 ROD, OU3 ROD, OSDF DCP, OSDF Design Specifications, OSDF Design Calculations, OSDF Design Drawings, OSDF Support Plans (IMPP)

DOE ORDER 5820.2A CHAPTER III (3)(c) Waste Generation

Purpose

This section requires that the amount of waste generated be minimized and that contaminated waste be segregated from uncontaminated waste in order to facilitate cost-effective treatment and disposal.

Statement of Compliance with 3(c)(1), (2), (3), (4):

The implementation of the FEMP Pollution Prevention and Waste Minimization Awareness Plan will confirm that all newly generated waste is minimized during the remediation. Additionally, excavation controls such as rapid test method methodology, and additional laboratory sampling will be implemented to confirm that only impacted material with contamination that is potentially above the final cleanup levels is being sent to the OSDF for disposal. These controls will minimize the size and cost of the OSDF, and reduce the overall cost of the FEMP remediation. Physical sampling of the impacted materials and rapid test method methodology will also confirm that only material that exceeds the OSDF WAC be disposed of off-site, this also reduces the cost of FEMP remediation.

Identification of ARARs, TBCs, and/or CERCLA Drivers for 3(c)(1), (2), (3), and (4)

TBCs: DOE Order 5820.2A Chapter III (3)(c), Minimization of Waste Generation

CERCLA Drivers: 40 CFR 300.430 (e)(9)(iii)(A), CERCLA Threshold Criteria
42 U.S.C. §§ 13101-13109, Pollution Prevention Act

References for Requirement 3(c):

FEMP Pollution Prevention and Waste Minimization Awareness Plan, and the FEMP remedial action documents.

DOE ORDER 5820.2A CHAPTER III (3)(d) WASTE CHARACTERIZATION

Purpose

This section requires that waste be characterized to permit proper segregation, treatment, storage, and disposal and that this information be recorded on a manifest.

Statement of Compliance with 3(d)(1), (2), and (3)

The CERCLA RI/FS process established the nature and extent of contamination at the FEMP. During excavation, monitoring will be performed in accordance with the appropriate remedial action documents, and results will be documented in order to determine if impacted material meets or exceeds the OSDF WAC. Additionally, if a remediated area fails to meet certification levels (therefore requiring additional remedial actions), the data generated from FRL compliance monitoring that was used to indicate the failure will also be utilized. Because no waste from facilities other than the FEMP will be disposed in the OSDF, these sources of characterization information (the RI/FS sampling, FRL compliance monitoring, and WAC monitoring) will provide the manifest information required in this section. The OSDF IMPP establishes the documentation required in order to dispose of FEMP remediation waste in the OSDF.

Identification of ARARs, and CERCLA Drivers for 3(d)(1), (2), and (3)

CERCLA Drivers: 40 CFR 300.430(e)(9)(iii) CERCLA Nine Criteria for Evaluation
USEPA, 1988, Guidance for Conducting RI/FS Under CERCLA

References for Requirement 3(d)

OU2 ROD, OU5 ROD, OU3 ROD, OSDF DCP, OSDF Design Specifications, OSDF Design Calculations, OSDF Design Drawings, OSDF Support Plans (IMPP), and the FEMP remedial action documents.

DOE ORDER 5820.2A CHAPTER III (3)(e) WASTE ACCEPTANCE CRITERIA**Purpose**

This section requires that WAC for the LLW disposal facility be developed according to specified criteria and that auditable certification programs be established.

Statement of Compliance with 3(e)(1), (2), and (5)

The waste to be disposed in the OSDF will consist of FEMP remediation waste only; no waste originating from sources other than the FEMP will be accepted. Extensive groundwater modeling performed during WAC development yielded WAC for the OSDF that include radiological and chemical criteria for soil and soil-like material, and radiological criteria for OU3 debris. The OSDF WAC will safeguard groundwater protection for 1,000 years. These radiological and chemical WAC were established in the OU2, OU5, and OU3 RODs, which were reviewed and approved by DOE-FN, USEPA and OEPA. The IMPP will implement the OSDF radiological, chemical, and physical WAC that were established for all soil and debris, and will also be reviewed and approved by DOE-FN, USEPA, and OEPA.

The CERCLA short-term and long-term risk assessments and the OSDF Hazard Assessment were performed for the OSDF to assess and evaluate safety concerns and issues pertaining to OSDF construction and disposal operations. These assessments were based upon the established radiological, chemical, and physical WAC found in the OU2, OU5, and OU3 RODs, and the IMPP.

Statement of Compliance with 3(e)(3), and (4)

Sampling and/or inspections will be conducted to verify areas and levels of contamination and will also certify that the impacted material destined for the OSDF meet the radiological, chemical, and physical WAC for the OSDF. Quality Assurance (QA) surveillance and audits will confirm that the WAC are met. The FEMP remedial action documents will implement these activities, and the documents will be reviewed and approved by DOE-FN, USEPA, and OEPA.

Identification of ARARs, TBCs, and/or CERCLA Drivers for 3(e)(1), (2), (3), (4), and (5)

ARARs: OAC 3745-27-08, Landfill Construction
 40 CFR 61.92-93, NESHAPS for emissions of radionuclides other than radon from the Department facilities
 40 CFR 61.192, NESHAPS for emissions of radon from Department

facilities

TBCs: DOE Order 5400.5 Chapter II (1)(a), (b), (3)(a)(5), Chapter IV (4)(c),
Radiation Protection of the Public and the Environment
DOE Order 5820.2A Chapter III (3)(a)(2), Protection of the General
Population from Releases of Radioactivity

CERCLA Drivers: 40 CFR 300.430 (e)(9)(iii), CERCLA Nine Criteria for Evaluation
40 CFR 300.430, Remedial Investigation/Feasibility Study (RI/FS)
and selection of remedy
40 CFR 300.435, Remedial Design (RD)/Remedial Action (RA),
operation and maintenance
USEPA, 1988, Guidance for Conducting Remedial Investigations
and Feasibility Studies Under CERCLA
USEPA, 1988, Superfund Exposure Assessment Manual
USEPA, 1989, Risk Assessment Guidance for Superfund:
Human Health Evaluation Manual, Part A, Interim Final
USEPA, Guidance on Preparing Superfund Decision Documents:
The Proposed Plan (PP), The Record of Decision (ROD),
Explanation of Significant Differences, The ROD Amendment

References for Requirement 3(e)

OU2 Risk Assessment (OU2 FS, Appendix C Risk Evaluation), OU5 Risk
Assessment (OU5 FS, Appendix F Fate and Transport Modeling, Appendix G Short
Term Risk Assessment, and Appendix H CRARE), and OU3 Risk Assessment (OU3
FS, Appendix H Short Term Risk Assessment, Appendix I CRARE), OU2 ROD, OU5
ROD, OU3 ROD, OSDF DCP, OSDF Design Specifications, OSDF Design
Calculations, OSDF Design Drawings, OSDF Support Plans (IMPP), and the FEMP
remedial action documents.

DOE ORDER 5820.2A CHAPTER III (3)(f) WASTE TREATMENT

Purpose

This section requires that waste be treated, as necessary, to meet the performance
objectives of DOE Order 5820.2A.

Statement of Compliance with 3(f)(1), (2), (3), and (4):

Based upon the CERCLA RI/FS data, the majority of the waste from OU2, OU3, and

OU5 will meet the OSDF WAC and therefore meet the performance objectives of the OSDF and DOE Order 5820.2A without treatment. This has been demonstrated through the modeling performed in the FS to establish the WAC. There are two categories of waste that may need to be treated before disposal. Wastes that are considered characteristically hazardous according to the Resource Conservation and Recovery Act (RCRA) from Operable Unit 5 will be quantified and treated to the extent necessary to remove the characteristics that cause them to be regulated. Physical sizing and treatment as per the IMPP, will be conducted on all debris for proper waste placement and stability within the OSDF is achieved. Some physical treatment may also be necessary for the sludge from the Lime Sludge Ponds in OU2 to decrease the moisture content before disposal in the OSDF in order to assure the physical stability needed to control strength concerns.

Identification of ARAR for 3(f)(1), (2), (3), and (4)

CERCLA Driver: 40 CFR 300.430 (e)(9)(iii)(A), CERCLA Threshold Criteria

References for Requirement 3(f)

OU2 ROD, OU5 ROD, OU3 ROD, OSDF DCP, OSDF Design Specifications, OSDF Design Calculations, OSDF Design Drawings, OSDF Support Plans (IMPP), and the FEMP remedial action documents.

DOE ORDER 5820.2A CHAPTER III (3)(g) SHIPMENT

Purpose

This section requires that the volume and number of waste shipments be minimized and that WAC attainment be certified.

Statement of Compliance for 3(g)(1), (2), (3), and (4)

The OSDF will only accept remediation waste from the FEMP cleanup. Therefore, the only waste shipments to the OSDF will be on-site shipments. These shipments will be comprised of bulk waste. The labeling requirements of DOE Order 1540.1 do not apply to the on-site shipments that will be made to the OSDF. The volume of waste disposed of in the OSDF will be minimized through a number of programs. The first of these is that extensive sampling has been performed during the CERCLA RI/FS process and the extent of waste excavation has been established using this data. This fact, combined with the sampling that will be performed at the excavation site, will confirm that only contaminated materials are excavated and sent to the OSDF. The second program that will minimize the shipments to the

OSDF is the FEMP Pollution Prevention and Waste Minimization Awareness Plan. Compliance with this plan will minimize the amount of low-level waste (i.e., equipment and personal protective equipment) generated during the remediation.

Sampling will be performed at the excavation area(s) to determine if waste meets the WAC and should be sent to the OSDF or if the waste exceeds the WAC and should be sent off site for disposal. The sampling plans for each area of the FEMP soil remediation projects will be outlined in the FEMP site-wide soil remedial action documents.

References for Requirement 3(g)

OU2 ROD, OU5 ROD, OU3 ROD, OSDF DCP, OSDF Design Specifications, OSDF Design Calculations, OSDF Design Drawings, OSDF Support Plans (IMPP), and the FEMP site-wide soil remedial action documents.

DOE ORDER 5820.2A CHAPTER III (3)(h) LONG-TERM STORAGE

Purpose

This section requires that the long-term storage of LLW be conducted in a manner in which the performance objectives of Chapter III (3)(a) are maintained.

Statement of Compliance for 3(h)(1), (2), (3), and (4)

The long-term storage requirements specified in DOE Order 5820.2A are not applicable to the remedial activities associated with the disposal of waste in the OSDF because there are no plans that include the long-term storage of waste prior to final disposal in the OSDF.

References for Requirement 3(h)

OU2 ROD, OU5 ROD, OU3 ROD

DOE ORDER 5820.2A CHAPTER III (3)(I) DISPOSAL

Purpose

This section requires that the LLW disposal facility be sited, designed, constructed, and have waste disposed of using methods that are appropriate to achieve the performance objectives stated in Chapter III (3)(a) and consistent with the requirements of Chapter III (3)(b).

Statement of Compliance with 3(I)(1)

The OSDF has been designed to meet the ARARs identified during the CERCLA process and hence have substantively satisfied the performance objectives specified in 5820.2A. The conceptual design criteria and cost estimate were presented in the OU2 and OU5 FS Reports. The OSDF-specific design criteria have been documented in the OSDF DCP. The DCP will be reviewed and approved by DOE-FN, USEPA, and OEPA. The design of the OSDF incorporates the results of the FS risk assessments and the CRARE.

The OSDF containment system eliminates all exposure pathways except the groundwater pathway. The OSDF WAC were developed to protect human health and the environment by protecting groundwater to the applicable MCLs for 1,000 years into the future. The institutional controls that will be implemented, and the thickness and composition of the containment system prevents the inadvertent intruder exposure scenario.

Identification of ARARs, TBCs, and/or CERCLA Drivers for 3(I)(1)

CERCLA Drivers: 40 CFR 300.430 (e)(9)(iii)(A), CERCLA Threshold Criteria

Statement of Compliance with 3(I)(2)

See discussion above stating compliance with 3(I)(1).

Identification of ARARs, TBCs, and/or CERCLA Drivers for 3(I)(2)

ARARs: OAC 3745-27-19 (E)(19), Landfill Operational Criteria

CERCLA Drivers: 40 CFR 300.430 (e)(9)(iii)(A), CERCLA Threshold Criteria

Statement of Compliance with 3(I)(3)

See discussion above stating compliance with 3(I)(1).

Identification of ARARs, TBCs, and/or CERCLA Drivers for 3(I)(3)

CERCLA Drivers: Section XII of 1991 Amended Consent Agreement between USEPA and DOE

Statement of Compliance with 3(I)(4)

No waste destined for the OSDF is designated greater-than-class C as specified in 10 CFR 61.55. Therefore this requirement is not applicable to OSDF.

Statement of Compliance with 3(I)(5)

The waste to be disposed in the OSDF will primarily consist of bulk materials such as soil and debris. Wastes containing free liquids (such as soil or soil-like wastes with moisture content above the liquid limit) will be avoided as much as practicable. The WAC presented in the OU2, OU5, and OU3 RODs, and implemented in the IMPP, address concerns pertaining to radiological, chemical, and physical characteristics of waste material.

Identification of ARARs, TBCs, and/or CERCLA Drivers for 3(I)(5)

ARARs: OAC 3745-27-19 (E)(19), Landfill Operational Criteria

CERCLA Drivers: 40 CFR 300.430 (e)(9)(iii)(A), CERCLA Threshold Criteria

Statement of Compliance with 3(I)(6)

The WAC presented in the OU2, OU5, and OU3 RODs, and implemented in the IMPP, address concerns pertaining to radiological, chemical, and physical characteristics of waste material. Sampling and inspections will be performed at the remediation area to determine if waste meets the WAC and should be sent to the OSDF or if the waste exceeds the WAC and should be sent off-site for disposal. The sampling plans for each area of the FEMP soil remediation projects will be outlined in the FEMP site-wide soil remedial action documents.

Identification of ARARs, TBCs, and/or CERCLA Drivers for 3(I)(6)

CERCLA Drivers: 40 CFR 300.430 (e)(9)(iii)(A), CERCLA Threshold Criteria

Statement of Compliance with 3(I)(7)

The Predesign Investigation and Site Selection Report for the OSDF was conducted in compliance with stringent OEPA siting criteria. These criteria address hydrogeology, distance from domiciles, distance from surface water, and many other siting concerns, and were identified as ARARs for the OSDF. The design of the OSDF incorporates the results of the OU2, OU5, and OU3 FS risk assessments, the assessments of land uses, and the impact on the current and future projected populations.

Identification of ARARs, TBCs, and/or CERCLA Drivers for 3(I)(7)

ARARs: OAC 3745-27-07(H), Landfill Siting Criteria
 10 CFR 1022, DOE Compliance with Floodplain/Wetlands Environmental
 Review Requirements

Statement of Compliance with 3(I)(8)

See discussion above stating compliance with 3(I)(1).

Identification of ARARs, TBCs, and/or CERCLA Drivers for 3(I)(8)

ARARs: OAC 3745-27-07(H), Landfill Siting Criteria
 OAC 3745-27-08 (C), (D), Landfill Construction
 40 CFR 265.301(a) [equivalent to OAC 3745-68-011], RCRA Landfill
 Design
 10 CFR 1022, DOE Compliance with Floodplain/Wetlands Environmental
 Review Requirements

Statement of Compliance with 3(I)(9)

OSDF waste placement procedures and construction activities are discussed and will be implemented by the OSDF IMPP and the OSDF System Plan. The plans were developed to protect the environment, health and safety of the public and facility personnel by following the project-specific safety requirements, and following the FEMP site-wide emergency planning and the site-wide unusual occurrence reporting procedures. Additionally, the construction subcontract of the OSDF stipulates that other plans be developed by the subcontractor such as a Spill Control Plan, a Dust Control Plan, and an Erosion Control Plan, to ensure the safe completion of the OSDF. Institutional controls, as per the Post Closure Care and Inspection Plan (PCCIP), will ensure the security of the OSDF will be maintained. The controls will include fencing, warning signs, etc. All monitoring wells will be permanently identified.

Identification of ARARs, TBCs, and/or CERCLA Drivers for 3(I)(9)

ARARs: 40 CFR 265.111 [equivalent to OAC 3745-66-11], RCRA Landfill Closure
 Performance Standard
 40 CFR 265.310 [equivalent to OAC 3745-68-10], RCRA Landfill Closure
 and Post-Closure
 OAC 3745-27-19 (E)(19), (E)(26), (J)(1), (J)(4), (K)(1)-(4), Landfill
 Operational Criteria
 OAC 3745-27-11(H),(O), Landfill Final Closure

References for Requirement 3(l)

OU2 ROD, OU5 ROD, OU3 ROD, OSDF DCP, OSDF Design Specifications, OSDF Design Calculations, OSDF Design Drawings, OSDF Support Plans, Predesign and Site Selection Report for the OSDF

DOE ORDER 5820.2A CHAPTER III (3)(j) DISPOSAL SITE CLOSURE/POST CLOSURE**Purpose**

This section generally requires that a closure plan be developed and that it be reviewed by DOE. This plan should address corrective action, residual radioactivity, and termination of monitoring and maintenance activities.

Statement of Compliance with 3(j)(1), (2), (3), (4), (5), and (6)

These requirements are addressed in the OSDF PCCIP. This plan is part of the OSDF Support Plans which have been reviewed and approved by DOE-FN, USEPA, and OEPA. Environmental monitoring requirements will also be addressed in the FEMP site-wide Integrated Environmental Monitoring Plan (IEMP). These requirements will be reviewed and revised as necessary during the CERCLA five-year reviews of OSDF performance which will be conducted by USEPA.

Identification of ARARs, TBCs, and/or CERCLA Drivers for 3(j)(1), (2), (3), (4), (5), and (6)

ARARs: OAC 3745-27-11 (H), Landfill Final Closure
 OAC 3745-27-14 (A), Landfill Post-Closure Care
 40 CFR 265.111 Subpart G, Closure and Post-Closure Requirements
 40 CFR 265.310 Subpart N, Landfill Operations
 OAC 3745-27-19 (N), Ten Year Review of Design, Construction, and Post-Closure Plan of the Landfill

CERCLA Drivers: 42 U.S.C. 9621(c), CERCLA Five Year Reviews
 Section XXX of 1991 Amended Consent Agreement between USEPA and DOE

References for Requirement 3(j)

OSDF DCP, OSDF Design Specifications, OSDF Design Calculations, OSDF Design

Drawings, OSDF Support Plans (PCCIP)

DOE ORDER 5820.2A CHAPTER III (3)(k) ENVIRONMENTAL MONITORING

Purpose

This section requires that the LLW disposal facility be monitored by an environmental monitoring program that can measure (through the monitoring of the applicable environmental media) operational effluent releases, migration of radionuclides, disposal facility subsidence, and changes in the disposal facility and site parameters that may effect the long-term performance of the disposal facility.

Statement of Compliance with 3(k)(1)

Compliance with this requirement will be satisfied by utilization of the OSDF Support Plans. These plans will include monitoring of OSDF associated groundwater, air, leachate, leak detection system, and settlement.

Identification of ARARs, TBCs, and/or CERCLA Drivers for 3(k)(1)

ARARs: OAC 3745-27-10, Landfill Groundwater Monitoring Program
 OAC 3745-27-19(E)(26), Landfill Operational Criteria; maintain integrity of landfill components
 OAC 3745-27-19(J)(1),(4) - Landfill Operational Criteria; surface water control structures

TBCs: DOE Order 5820.2(A) Chapter III(3)(k), Environmental Monitoring

CERCLA Drivers: 40 CFR 300.435, RD/RA, operation and maintenance

Statement of Compliance with 3(k)(2)

See discussion above stating compliance with 3(k)(1).

Identification of ARARs, TBCs, and/or CERCLA Drivers for 3(k)(2)

ARARs: OAC 3745-27-10, Landfill Groundwater Monitoring Program
 OAC 3745-27-08(C)(1),(2),(3),(4),(5),(6),(7),(9), Landfill Construction, Leachate collection and storage; structures must be monitored
 OAC 3745-27-19(E)(26), Landfill Operational Criteria; maintain integrity of landfill components
 OAC 3745-27-19(J)(1),(4) - Landfill Operational Criteria; surface water

control structures

TBCs: DOE Order 5820.2(A) Chapter III(3)(k), Environmental Monitoring

CERCLA Drivers: 40 CFR 300.435, RD/RA, operation and maintenance

Statement of Compliance with 3(k)(3)

See discussion above stating compliance with 3(k)(1).

Identification of ARARs, TBCs, and/or CERCLA Drivers for 3(k)(3)

ARARs: OAC 3745-27-10, Landfill Groundwater Monitoring Program
OAC 3745-27-19(K)(1),(2),(3) -Landfill Operational Criteria; leachate detection

TBCs: DOE Order 5820.2(A) Chapter III(3)(k), Environmental Monitoring

CERCLA Drivers: 40 CFR 300.435, RD/RA, operation and maintenance

Statement of Compliance with 3(k)(4)

See discussion above stating compliance with 3(k)(1).

Identification of ARARs, TBCs, and/or CERCLA Drivers for 3(k)(4)

ARARs: OAC 3745-27-10, Landfill Groundwater Monitoring Program

TBCs: DOE Order 5820.2(A) Chapter III(3)(k), Environmental Monitoring

CERCLA Drivers: 40 CFR 300.435, RD/RA, operation and maintenance

References for Requirement 3(k)

OSDF Support Plans (Surface-Water Management and Erosion Control, Groundwater Monitoring Plan, and Air Monitoring Plan)

DOE ORDER 5820.2A CHAPTER III (3)(I) QUALITY ASSURANCE

Purpose

This section requires that disposal of LLW be conducted in accordance with DOE

Order 5700.6B, in accordance with the applicable requirements of American National Standards Institute/American Society of Mechanical Engineers Nuclear Quality Assurance-1, and other appropriate national consensus standards.

Statement of Compliance for 3(l)

The quality assurance requirements specified in 5820.2A are satisfied by the IMPP and the OSDF Construction Quality Assurance (CQA) Plan. These plans include the quality assurance activities that will confirm that waste placement and disposal practices are performed correctly. The IMPP and CQA Plan were written to comply with the FEMP Quality Assurance Program Description, RM-0012, which complies with the applicable requirements of American National Standards Institute/American Society of Mechanical Engineers Nuclear Quality Assurance-1 and other appropriate national consensus standards.

Identification of ARARs for 3(l)

ARARs: OAC 3745-27-08 (C),(D),(E),(F),(G), Landfill Construction

References for Requirement 3(l)

OSDF Support Plans (CQA Plan, IMPP), RM-0012

DOE ORDER 5820.2A CHAPTER III (3)(m) RECORDS AND REPORTS

Purpose

This section requires that records be maintained with information about waste generation, treatment, storage, shipment, and disposal. This section also requires that a waste manifest accompany waste packages from generation through disposal.

Statement of Compliance with 3(m)(1)

Because the FEMP is no longer in production and is undergoing remediation, the vast majority of waste generated will be waste consisting of soil with a small fraction of debris. Under the CERCLA RI/FS process, the FEMP was characterized and the results were reported in the RI Reports for each operable unit. The RODs established the selected remedy for each classification of waste at the FEMP based on the information in the RI and FS Reports, FRL certification plans, and WAC attainment plans.

Statement of Compliance with 3(m)(2)

The CERCLA RI/FS process established the nature and extent of contamination at the FEMP. During excavation, monitoring will be performed in accordance with the appropriate remedial action documents, and results will be documented in order to determine if the waste meets or exceeds the OSDF WAC. Because no waste from facilities other than the FEMP will be disposed in the OSDF, these two sources of characterization information (the RI/FS sampling and WAC monitoring) will provide the manifest information required in this section of the Order. The OSDF IMPP establishes the information required in order to dispose of FEMP remediation waste in the OSDF.

Identification of ARARs, TBCs, and/or CERCLA Drivers for 3(m)(1) and (2)

ARARs: 40 CFR 61.92-93, NESHAPS for emissions of radionuclides other than radon from the Department facilities

40 CFR 61.192, NESHAPS for emissions of radon from Department facilities

TBCs: DOE Order 5400.5 Chapter II (1)(a), (b), (3)(a)(5), Chapter IV (4)(c), Radiation Protection of the Public and the Environment

DOE Order 5820.2A Chapter III (3)(a)(2), Protection of the General Population from Releases of Radioactivity

CERCLA Drivers: 40 CFR 300.430, (e)(9)(iii), CERCLA Nine Criteria for Evaluation
40 CFR 300.430, Remedial Investigation/Feasibility Study (RI/FS) and selection of remedy

40 CFR 300.435, Remedial Design (RD)/Remedial Action (RA), operation and maintenance

USEPA, 1988, Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA

References for Requirement 3(m)

OU2 ROD, OU5 ROD, OU3 ROD, OSDF DCP, OSDF Design Specifications, OSDF Design Calculations, OSDF Design Drawings, OSDF Support Plans (IMPP), and the FEMP remedial action documents.

FEMP CERCLA REVIEW PROCESS

The CERCLA process at the FEMP involves many resources, organizations, and agencies, which provides a thorough review and approval process. Several subject matter experts are utilized during the internal review process at the FEMP by the DOE contractor Fluor Daniel Fernald Inc (FD-FN). Additionally, resources from the major FD-FN teaming partners are utilized during the internal review. These teaming partners are: Fluor Daniel, Jacobs, and Brown and Root.

The DOE-FN reviews and approves all CERCLA documents. The public stakeholders also have opportunities for review and comment throughout the process. Direct involvement in information exchange meetings and technical review of CERCLA documents by USEPA and OEPA in the FEMP CERCLA process is required, pursuant to the terms of the 1986 Federal Facility Compliance Agreement, and a 1990 Consent Agreement between the DOE and USEPA, and a Consent Decree between the DOE and OEPA. The USEPA including the USEPA Radiation and Risk Assessment specialists, the USEPA environmental contractor Planning Research Corporation (PRC), the OEPA, and the OEPA environmental contractor, GeoTrans, have review and approval authority on all CERCLA documents.

**REQUIREMENTS IN DOE ORDER 5820.2A, RADIOACTIVE WASTE MANAGEMENT,
CHAPTER III, SECTION 3, MANAGEMENT OF LLW, SATISFIED THROUGH THE
CERCLA PROCESS**

The following table identifies requirements "a." through "m." of DOE Order 5820.2A, Chapter III, Section 3 that have been satisfied at the FEMP through the CERCLA process. These requirements have been satisfied through the compliance with ARARs, TBCs, and other drivers of the CERCLA process. Since these requirements were incorporated as part of the CERCLA process, they do not need to be applied separately.

For completeness, the table also identifies those requirements that are not incorporated or satisfied through the CERCLA process. In the case of the FEMP, none were identified for this category. If any had been identified, they would need to be applied separately and complied with under the DOE Order 5820.2A process.

DOE Order 5820.2A, Radioactive Waste Management, Chapter III, LLW Waste Management, Section 3, Requirements	Requirements satisfied via the FEMP CERCLA process
a. Performance Objectives	a.1, a.2, a.3, a.4
b. Performance Assessment	b.1, b.2, b.3
c. Waste Generation	c.1, c.2, c.3, c.4
d. Waste Characterization	d.1, d.2, d.3
e. Waste Acceptance Criteria	e.1, e.2, e.3, e.4, e.5
f. Waste Treatment	f.1, f.2, f.3, f.4
g. Shipment	Not Applicable
h. Long-Term Storage	Not Applicable
i. Disposal	i.1, i.2, i.3, i.4, i.5, i.6, i.7, i.8
j. Disposal Site Closure/Post Closure	j.1, j.2, j.3, j.4, j.5, j.6
k. Environmental Monitoring	k.1, k.2, k.3, k.4
l. Quality Assurance	all
m. Records and Reports	m.1, m.2