5802

FINAL

EXPLANATION OF SIGNIFICANT DIFFERENCES FOR OPERABLE UNIT 4 REMEDIAL ACTIONS

UNITED STATES DEPARTMENT OF ENERGY
FERNALD CLOSURE PROJECT
FERNALD, OHIO

January 2005

40000-RP-0037
Revision 0

Robert Warther, Manager
United States Department of Energy – Ohio Field Office

1/6/05
Date

Richard C. Karl, Director
Superfund Division
United States Environmental Protection Agency – Region 5

Date

5802

1.0 INTRODUCTION TO THE SITE AND STATEMENT OF PURPOSE

1.1 BACKGROUND

The Fernald Closure Project (FCP) is a former uranium processing facility located in Hamilton and Butler Counties, Ohio approximately 18 miles northwest of Cincinnati, Ohio. The FCP is owned by the United States Department of Energy (DOE). In November 1989, the FCP site (formerly the Feed Materials Production Center [FMPC] and then the Fernald Environmental Management Project [FEMP]) was included on the National Priorities List established under the Comprehensive Environmental Response, Compensation, and Liability Act, as amended (CERCLA). The DOE is the lead agency for remediation of the FCP pursuant to the *Consent Agreement as Amended under CERCLA Sections 120 and 106(a)* (the ACA) signed with U.S. EPA in September 1991. The Ohio Environmental Protection Agency (OEPA) is also participating in the cleanup process at the site.

Operable Unit 4 is one of the five operable units identified in the ACA and consists of Silos 1, 2, and 3 and their contents, the empty Silo 4, and associated facilities. Disposal of treated Silos 1, 2, and 3 material as 11e.(2) byproduct material at the NTS was originally proposed by the DOE as a protective, compliant disposal option in the original Proposed Plan for Operable Unit 4 in February 1994. After formal public review by regulators and stakeholders in Ohio and Nevada, the DOE and U.S. EPA specified treatment by vitrification, followed by offsite disposal at the NTS, as the selected remedy for Silos 1, 2, and 3 material in the December 7, 1994 OU4 ROD. The DOE has maintained the involvement of regulators and stakeholders in the state of Nevada on a continuing basis since finalizing the OU4 ROD. This involvement has included:

- Numerous briefings and 16 public meetings and hearings in Nevada during reevaluation and modification of the OU4 remedy;
- Tours of the FCP, and the processing facilities for the Silo materials for members of the Nevada Test Site Citizens Advisory Board (NTSCAB);
- Status reports and formal and informal briefings on plans and status of FCP activities for the Nevada Department of Environmental Protection (NDEP); and
- Maintaining representatives of the NDEP as standing members on the NTS Waste Acceptance Review Panel, responsible for reviewing and recommending approval of waste streams proposed for disposal at the NTS.

Subsequent revisions to the remedy for Silo 3 (Explanation of Significant Differences (ESD) in March 1998, and ROD Amendment in September 2003) modified the selected remedy for Silo 3 to treatment to the extent practical to reduce dispersability and mobility of heavy metals, followed by off-site disposal at the NTS or an appropriately permitted commercial disposal facility (PCDF).

2

Revisions to the remedy for Silos 1 and 2 (ROD Amendment in June 2000 and ESD in November 2003) modified the selected remedy for Silos 1 and 2 to treatment by chemical stabilization, followed by off-site disposal at the NTS or a PCDF.

1.2 CIRCUMSTANCES GIVING RISE TO PREPARATION OF AN ESD FOR OPERABLE UNIT 4

Since the Operable Unit 4 ROD Amendment and its subsequent modifications were finalized, the DOE and U.S. EPA have evaluated alternatives for ensuring implementation and completion of the remedy in the most expeditious manner. The primary circumstance giving rise to this evaluation involves legal issues raised by the state of Nevada concerning the currently identified disposal remedy. As documented in recent letters from the Attorney General of the State of Nevada to the DOE (letters dated April 13, 2004, and August 23, 2004) the Nevada Attorney General has requested that DOE respond to several legal issues concerning disposal of the treated Silo materials at the NTS. These letters, and the DOE's response, are contained in Attachment 1 of this ESD.

DOE's efforts to resolve the issues with the State of Nevada have included:

- Discussions with the State of Nevada
- Creation of a DOE team to find and implement potential solutions to issues raised
- April 30, 2004 commitment to review legal issues raised by Nevada Attorney General, and to provide 45-day notification prior to initiating shipment of Silo material to the NTS
- July 28, 2004 letter to the State of Nevada clarifying DOE's legal position that disposal at the NTS in accordance with the 1994 ROD is legal, protective, and compliant

It is U.S. EPA's and DOE's position that the current OU4 remedy, originally specified in 1994 with input from regulatory agencies and stakeholders in the states of Ohio and Nevada, is legal, compliant, and fully implementable. A September 27, 2004 letter from the U.S. EPA Region V to the DOE states:

> "Historically, disposal of Silo materials at the Nevada test Site (NTS) has been a component of the Silos Project remedy since 1994 as stated in the 1994 *Record of Decision for Remedial Actions for Operable Unit 4(ROD)*. Off-site disposal of the Silo materials is also a key component of the 'balanced approach' that included Ohio stakeholder acceptance of a 2-million cubic yard onsite disposal facility at Fernald. DOE expended great effort to work with the State of Nevada and its stakeholders to ensure the disposal of Silo materials at NTS."

Although the DOE remains committed to the disposal component of the current remedy, the DOE is also committed to resolving the issues raised by the Attorney General of the State of Nevada in the most

5802

expeditious manner. Therefore, it is DOE's position that the changes addressed under this ESD are required in order to:

- Maintain continuing progress towards completing treatment and off-site disposal of the Silo materials in the most cost-effective and expeditious manner;
- Minimize risk to the public and the environment due to continued storage of silo materials in their in current configuration as soon as possible;
- Maintain progress towards the scheduled 2006 closure of the FCP; and
- Continue to honor its commitment to respond to stakeholder concerns.

The change addressed under this ESD consists of allowing the option for temporary offsite storage of Silo materials, after necessary treatment, prior to permanent offsite disposal at the NTS and/or a PCDF.

1.3 REGULATORY BASIS

Pursuant to Section 117 of CERCLA as amended and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) at 40 CFR 300.435(c)(2)(i), an ESD document should be published when "differences in the remedial or enforcement action, settlement, or consent decree significantly change but do not fundamentally alter the remedy selected in the ROD with respect to scope, performance, and cost." The OU4 ROD has always provided for off-site management of the Silo materials in the form of transportation to and disposal at a protective off-site facility. As defined by this ESD, temporary offsite storage at a government-owned facility or a properly permitted commercial facility is a form of offsite management in accordance with the same criteria applied under the current ROD. In addition, since the revised remedy would 1) maintain the final remedy of protective, permanent offsite disposal of silo material; 2) limit offsite storage to a finite period of time prior to permanent offsite disposal; 3) maintain all current criteria for treatment, packaging, transportation & disposal; and 4) preclude return of the material to FCP; there is a significant but not a fundamental change to the scope, performance, or cost of the remedy. Adding the option for temporary offsite storage prior to final disposal represents a significant, but not fundamental, change to the current OU4 remedy.

1.4 ADMINISTRATIVE RECORD

This ESD will become part of the Administrative Record pursuant to 40 CFR 300.825(a)(2). This ESD, as well as the supporting information, will be available to the public at the Public Environmental Information Center (PEIC), 7400 Willey Road, Hamilton, Ohio. The PEIC is open from 7:30 a.m. to 5:00 p.m. on Thursday and may be contacted at (513) 648-5051.

4

2.0 SITE HISTORY, CONTAMINATION, AND SELECTED REMEDY

2.1 SUMMARY OF SITE OPERATING HISTORY

Operating as the FMPC between 1951 and 1989, the site produced high purity uranium metal products in support of national defense programs. The site consists of approximately 1,050 acres encompassing three primary areas: the former production area, the waste storage area, and adjacent forest/pasture land. The former production area is a 136-acre tract at the center of the site. The waste storage area, which includes the OU4 area, is located west of the former production area. In 1989, operations ceased and efforts were focused on environmental restoration and waste management activities. In 1991, the site name changed to the FEMP to recognize this new emphasis. In 2003, the site name changed again to the FCP to reflect the increased focus on final site closure.

The ACA organized the remediation of the FCP into five operable units. Operable Units 1 through 4 are considered source operable units while Operable Unit 5 encompasses all environmental media, both on and off FCP property. The final remedial actions include: facility decontamination and dismantlement; on-site disposal of the majority of contaminated soil and debris; off-site disposal of the contents of Silos 1 and 2, Silo 3, waste pit material, nuclear product inventory, low-level waste, mixed waste, and limited quantities of soil and debris not meeting on-site waste acceptance criteria; and treatment of contaminated groundwater to restore the Great Miami Aquifer. Records of Decision have been finalized for all five operable units, and current site activities consist entirely of implementing remedial actions in accordance with the final RODs, and enforceable milestones established under the ACA.

DOE's current contractor target baseline schedule forecasts the completion of the OU4 remedy by March 31, 2006. The DOE has completed construction and testing of facilities described in the OU4 remedy selection and remedial design/remedial action documents to retrieve, treat, and package material from Silos 1, 2, and 3 for off-site disposal. DOE has initiated the process of transferring material from Silos 1 and 2 into tanks for storage pending subsequent transfer to the Silos 1 and 2 Remediation Facility for treatment and packaging.

DOE and U.S. EPA have recently agreed to extend milestones for initiating operation of the Silo 3 and Silos 1 and 2 Remediation facilities, in recognition of the issues discussed in this ESD. Facilities, personnel, and support systems are in place, however, to support completing the processing, packaging and offsite disposal of the Silos 1, 2, and 3 material, as well as subsequent remediation and site closure activities, in accordance with the current approved ROD and contractor target baseline schedule. DOE

and U.S. EPA agree that the change described by this ESD, which affords DOE flexibility to use temporary offsite storage if required, will further ensure completion as currently scheduled.

The option of off-site interim storage is necessary because the Nevada Attorney General recently requested that the DOE respond to concerns regarding disposal of the Silo materials at NTS as specified in the 1994 OU4 ROD (letters dated April 13, 2004, and August 23, 2004). While DOE and U.S. EPA believe that the remedy specified in the OU4 ROD is legal, protective, and implementable, DOE prefers to work with the Nevada Attorney General to resolve his concerns prior to proceeding. However, the timeframe for completing this process is uncertain and, in the end, it may be preferable to pursue other off-site disposal options.

Halting progress on processing and offsite disposal of the Silo materials pending resolution of the Nevada Attorney General's concerns is impracticable. Not only would DOE risk missing an enforceable milestone, but facilities, procedures, and qualified and trained workers are currently in place to operate the complicated processing equipment. Delaying operation of the facilities will result in significant costs to maintain these resources in a status to allow effective initiation of operation. In addition, delay risks the need for extensive retraining and significant delays in startup schedules and, eventually, the loss of the key knowledge and resources required to effectively initiate safe operation of the facilities.

In addition, other elements of the Fernald cleanup could be delayed, resulting in substantial cost and schedule impacts to the overall closure of the FCP. For example, final closure of the On-site Disposal Facility (OSDF) could be delayed since some demolition debris and contaminated soil from OU4 are expected to be disposed in the OSDF.

2.2 CONTENTS OF SILOS 1, 2, and 3

Silos 1 and 2 contain a total of 8,012 cubic yards of 11e.(2) byproduct material and a total of 878 cubic yards of BentoGrout clay for a total volume of 8,890 cubic yards. The BentoGrout clay layer was added in 1991 to the Silos 1 and 2 materials in order to reduce the radon emanation. The materials in Silos 1&2 are moisture-rich, silty, and clay-like materials. Radionuclides at significant activity levels within these silos are actinium-227, radium-226, thorium-230, polonium-210, and lead-210. These radionuclides are naturally occurring elements found in the original ores. Non-radiological constituents detected in significant concentrations in Silos 1 and 2 materials include sodium, magnesium, nickel, barium, lead, calcium, and iron (also naturally constituents from the original ore), and tributyl phosphate (a solvent used in the former uranium extraction process at the FCP). Tests performed on samples of stored material

identified that lead could leach from the untreated material in levels that thresholds for leachability as measured through the toxicity characteristic leaching procedure (TCLP) laboratory test.

Silo 3, contains 5,088 cubic yards of 11e.(2) byproduct material consisting of cold metal oxides, a by-product material generated during Fernald's uranium processing operations. The predominant radionuclide of concern identified within the material is thorium-230, which is produced from the natural decay of uranium-238. The materials contained in Silo 3 consist of relatively dry, powder-like residues that were placed in the silo over the time period 1954 to 1957. The residues consist of the metallic and non-metallic impurities that remained following the extraction of uranium from ore and ore concentrates in Fernald's refinery operations during the mid-1950s. The residues were prepared for storage following a volume reduction and concentration step known as calcining, which is a roasting process in the presence of lime that serves to remove moisture and convert the impurities to their more stable (less leachable) oxide form. Following calcining, the dry residues were pneumatically conveyed to Silo 3 for longer-term interim storage as part of DOE's ongoing custodial responsibility for the materials. Silo 3 materials have a much lower radium content than the K-65 materials, and therefore Silo 3 exhibits a much lower direct radiation field and has a substantially lower radon-222 emanation rate compared to Silos 1&2. The Silo 3 materials are dry and powdery, with ambient moisture contents ranging from 3 to 10 percent by weight. Some analyses of Silo 3 material have exhibited levels of four metals (arsenic, cadmium, chromium, and selenium) such that they can exceed thresholds for leachability as measured through the TCLP laboratory test.

As consistently documented and subjected to regulator and public review in the original OU4 ROD (December 1994) and in its subsequent modifications, the residues contained in Silos 1, 2, and 3 consist solely of byproduct material under Section 11e.(2) of the Atomic Energy Act of 1954 as amended (AEA), and have been managed by the DOE pursuant to its authority under the AEA since their original generation. The designation as 11e.(2) byproduct material acknowledges the origin of the materials and identifies that they consist of tailings or wastes that were produced by the extraction and concentration of uranium from ores that were processed primarily for their source material content. The designation as 11e.(2) material was formally documented in 1984 when the DOE assumed ownership of the residues, and has been consistently documented and subjected to regulatory agency, state, and public review in the 1994 OU4 ROD and each of its subsequent modifications. Further, Section 312 of the 2004 Energy and Water Development Appropriations Act (Public Law 108-137) states that the Silo material "shall be considered byproduct material as defined by Section 11e.(2) of the Atomic Energy Act of 1954, as amended." In House Report 108-554, Congress clarifies that "The language included in the Energy and

Water Development Appropriations Act, 2004 was intended to allow the Department to consider commercial NRC-regulated disposal options as well as the use of government-owned disposal sites," such as the NTS, which do not require NRC licenses.

As 11e.(2) byproduct materials, the residues are statutorily excluded from the definition of solid and hazardous waste under the Resource Conservation and Recovery Act (RCRA) of 1976; this statutory exclusion is described in the RCRA regulations under 40 CFR 261.4(a)(4). Specific regulatory requirements for management of the byproduct materials are defined through the AEA regulations and accompanying DOE Orders, policies and directives.

2.3 OPERABLE UNIT 4 SELECTED REMEDY

The Operable Unit 4 ROD was signed and effective on December 7, 1994. The following documents modified the remedy documented in the original ROD:

- Explanation of Significant Differences for Operable Unit 4 Silo 3 Remedial Action, signed and effective March 27, 1998
- ROD Amendment for Operable Unit 4 Silos 1 and 2 Remedial Action, signed and effective on July 13, 2000
- ROD Amendment for Operable Unit 4 Silo 3 Remedial Action, signed and effective on September 24, 2003
- Explanation of Significant Differences for Operable Unit 4 Silos 1 and 2 Remedial Action, signed and effective November 24, 2003

Each of the remedy modifications identified above was documented, subjected to formal public review, and approved in accordance with CERCLA and the NCP.

The current selected remedy defined in the OU4 ROD and its subsequent revisions consists of:

- Removal of the contents of Silos 1 and 2 and the Decant Sump Tank System sludge from the Silos and transfer to the Transfer Tank Area for storage pending subsequent transfer to the Silos 1 and 2 Remediation Facility;
- Complete removal of contents of Silos 1 and 2 and the Decant Sump Tank System sludge from the Transfer Tank Area followed by treatment using chemical stabilization to attain the disposal facility waste acceptance criteria;
- Removal of material from Silo 3 by pneumatic and/or mechanical processes, followed by treatment to the extent practical by addition of a chemical stabilization reagent and a reagent to reduce dispersability
- Off-site shipment and disposal of the treated silo materials at the NTS and/or an appropriately permitted commercial disposal facility;
- Gross decontamination, demolition, size reduction, and packaging of the Silos 1, 2, and 3 structures and remediation facilities in accordance with the Operable Unit 3 ROD;

8

- Shipment of the concrete from the Silos 1 and 2 structures for off-site disposal at the NTS or an appropriately permitted commercial disposal facility;
- Disposal of contaminated soil and debris, excluding concrete from Silos 1 and 2 structures, in accordance with the FCP On-Site Disposal Facility waste acceptance criteria or an appropriate off-site disposal facility, such as the NTS or a permitted commercial disposal facility;
- Removal of the earthen berms and excavation of the contaminated soils within the Operable Unit 4 boundary to achieve the remediation levels outlined in the Operable Unit 5 ROD;
- Appropriate treatment and disposal of all secondary wastes at either the NTS or an appropriately permitted commercial disposal facility;
- Collection of perched water encountered during remedial activities for treatment at Operable Unit 5 water treatment facilities;
- Continued access controls and maintenance and monitoring of the stored waste inventories; and
- Institutional controls of the Operable Unit 4 area such as deed and land-use restrictions.

3.0 DESCRIPTION OF SIGNIFICANT DIFFERENCES AND THE BASIS FOR THE CHANGE

3.1 SUMMARY OF DIFFERENCES

The change to the OU4 remedy defined by this ESD consists of the potential addition of an incremental step in the offsite management of the silo materials (temporary storage), prior to final disposal in accordance with the current remedy. The modified remedy will maintain all of the components of the existing remedy, as described above, unchanged. The change addressed by this ESD is limited to allowing the option for temporary offsite storage of treated silo materials prior to final offsite disposal in accordance with the current OU4 remedy. In order to ensure that there is not a fundamental change to the scope, performance, or cost of the OU4 remedy, the modified remedy will include the following constraints:

- Temporary offsite storage must be at an offsite government-owned facility in accordance with the appropriate DOE-orders and other applicable regulations or at a commercial facility appropriately permitted by the relevant regulatory agency.
- Storage will be limited to a period of two years. No more than two years from the date storage of material from a particular silo is initiated, the material from that silo must be either 1) permanently disposed at the storage facility in accordance with the OU4 remedy and all applicable regulatory requirements, or 2) transported to the NTS and/or a PCDF for permanent disposal.
- Under no circumstances will it be allowable for the silo material to be returned to the FCP after it has been transported to an offsite facility for temporary storage and/or final disposal.
- Transportation from FCP to the storage facility, and any subsequent transportation to a disposal facility must meet the transportation risk criteria and all other criteria and applicable regulations specified by the current remedies.

3.2 BASIS FOR CHANGE

3.2.1 Original OU4 Remedial Action Objectives

The basis for selection of the original remedy for OU4, and for the subsequent modifications, was attainment of the Remedial Action Objectives for OU4 identified in the OU4 Feasibility Study Report, issued in February 1994. The original OU4 Remedial Action Objectives consisted of:

- Prevent contact with or ingestion of waste material;
- Prevent release or migration of waste materials to soil, groundwater, surface water, or sediment; and
- Prevent exposures to waste material that may cause an individual to exceed applicable dose limits.

Due to the uncertain structural life of the silos, one of the primary potential exposure pathways identified in the Baseline Risk Assessment that supported the OU4 FS was the risk of exposure to the release of Silo material resulting from the structural failure of the silo structure that would be assumed to occur in the long-term. The expeditious retrieval, treatment and offsite packaging of Silo material, thereby eliminating the risk to the public and the environment associated with continued storage in the silos, is critical to the fundamental objectives of the OU4 remedial action.

3.2.2 Uncertainty With Current Off-site Disposal Options and Emergence of Potential New Options

Subsequent to the approval of the 1994 OU4 ROD, the DOE identified commercial disposal facilities which were either considering or were in the process of obtaining appropriate permitting as potential additional options for offsite disposal of the treated silo material. Subsequent modifications of the OU4 remedy added the alternative for disposal of treated Silo materials at an appropriately permitted commercial disposal facility in addition to the already-approved option of disposal at the NTS.

In an effort to proceed to the next steps in the approved remedy in the most expeditious manner, DOE has evaluated potential alternatives to disposal at the NTS in parallel with its ongoing efforts to resolve the previously discussed issues with the State of Nevada (Section 1.2). Preliminary evaluation has identified potential options, such as temporary offsite storage prior to transfer to the NTS or permitted commercial disposal facility, and alternate offsite disposal locations. These alternate paths could allow continuation the onsite portions of the OU4 remedy to continue as scheduled, and allow an incremental step towards permanent offsite disposal, while current efforts to initiate permanent disposal at the NTS and/or a PCDF are concluded.

5802

3.2.3 Impact of Delaying OU4 Remedial Actions

The DOE is currently in the final stages of implementing the remediation of the FCP in accordance with its agreements with U.S. EPA in accordance with the ACA, as well as its commitments to the state of Ohio and other stakeholders. The final remedial actions defined under the ACA include facility decontamination and dismantlement; on-site disposal of the majority of contaminated soil and debris; off-site disposal of the contents of Silos 1 and 2, Silo 3, waste pit material, nuclear product inventory, low-level waste, mixed waste, and limited quantities of soil and debris not meeting on-site waste acceptance criteria; and treatment of contaminated groundwater to restore the Great Miami Aquifer.

Facilities for the treatment, and packaging of Silo 3 material have been constructed, tested, and demonstrated to be ready for safe operation. Facilities for treatment and packaging of Silos 1 and 2 materials have been constructed and are anticipated to be verified as ready for operation in January 2005. While these facilities can be maintained in a state of readiness to allow initiation of operations within a short period of time, the cost to maintain equipment in operable condition, as well as the time and cost required to effectively initiate operation, will quickly result in a significant cost impact. These impacts increase significantly the longer startup is delayed, and include:

Silo 3

- Maintain up to 70 personnel on standby status
- Termination of project personnel; re-staffing and retraining adds six months to schedule for startup (standby beyond 9 - 12 months)
- While the costs of maintaining the facility in operational status can, for a limited period of time, be mitigated by temporarily assigning personnel to training and other temporary activities, standby will eventually require all resources to be maintained on full-time standby status, resulting in costs of up to $750,000 per month.

Silos 1 and 2

- Maintain up to 200 personnel on standby status
- Standby charges for container vendors for storage of empty containers; standby charges for transportation vendors (standby beyond one month)
- Termination / settlement charges for demobilization of disposal container and transportation vendors (standby beyond 6 - 9 months)
- Termination of project personnel; re-staffing and retraining adds six months to schedule for startup (standby beyond 6 - 9 months)
- While the costs of maintaining the facility in operational status can, for a limited period of time, be mitigated by temporarily assigning personnel to training and other temporary activities, standby will eventually require all resources to be maintained on full-time standby status, resulting in costs of up to $3 million per month.

11

Further, the ability to maintain this state of readiness decreases over time due to loss of personnel and degradation of equipment and technical expertise, eventually resulting in a substantial risk of being unable to effectively initiate operations.

In addition to the costs and risk impacts on OU4 remediation, delay in implementing the remaining on-site portions of the OU4 remedy have significant cost and schedule impacts on overall FCP closure. Removal, treatment, and offsite disposal of the Silo materials, Decontamination and Demolition (D&D) of the Silo structures and remediation facilities (scheduled for completion by December 2005), and the subsequent disposition of D&D debris and soil prior to closure of the OSDF, define the critical path for completion of site closure, currently forecast by the contractor for March 31, 2006. Due to their position on the critical path towards site closure, delaying retrieval and treatment of Silo materials and the subsequent D&D and soil remediation activities have substantial cost and schedule impacts due to factors such as delaying the phase-out of the site infrastructure, and impacting the ability to dispose of soil and D&D debris in the FCP On-site Disposal Facility (OSDF). Potential impacts include:

- Day-for-day delay in completing FCP closure
- Maintaining D&D and soil remediation functions in standby awaiting completion of Silo 1, 2, and 3 remediation facility operations
- Maintaining site infrastructure and support programs to support completion of OU4 remediation, D&D and soil disposition
- Management of the OSDF 'open', awaiting receipt of D&D debris and soil from OU4.

Based upon current baseline projections, the cost impact of delaying site closure could total up to $20 million per month.

3.2.3 Statement of Significant Difference

The DOE and the U.S. EPA remain committed to timely and cost effective implementation of the current OU4 remedy, which was proposed, demonstrated to be compliant and protective of human health and the environment, and approved in accordance with CERCLA and the NCP. Addition of the option for temporary offsite storage of treated silo material, prior to permanent offsite disposal maximizes DOE's ability to achieve the fundamental objectives of the OU4 remedial action and complete closure of the FCP in a timely and cost effective manner, while honoring its continuing commitment to consider stakeholder concerns during the remedial action process. The revised remedy still specifies appropriate treatment, packaging and protective offsite disposal of all Silo 1, 2, and 3 material. Further, if implemented as specified in this ESD, temporary offsite storage would maintain compliance with all remedial action objectives, ARARs, and other criteria associated with the current OU4 remedy.

The potential cost of temporary offsite storage of the Silo materials is not expected to be sufficient to represent a fundamental change to the overall cost of the remedy. The costs projected in the documents defining the current remedies are as follows:

Silo 3[1]		Silos 1 and 2[2]	
Transportation:	$ 1.8 Million	Transportation:	$14 million
Disposal:	$5.4 Million	Disposal:	$10 million
Total Cost	$42.4 Million	Total Cost	$300 million

[1]Estimated costs from Revised Proposed Plan for Silo 3, April 2003

[2] Estimated costs from ROD Amendment for OU4 Silos 1 and 2 Remedial Actions, June 2000

The actual cost of temporary offsite storage will be determined through the government procurement process and will depend upon factors including the specifics of the selected offsite facility(s); the material to be stored (Silo 3, Silos 1 and 2, a fraction of either, or both), and the length of the storage period. Based upon rough order of magnitude estimates, the maximum cost of temporary offsite storage of Silo 3 and/or Silos 1 and 2 materials for the entire two-year period allowed under this ESD is not expected to exceed 5-10% of the total estimated cost of the current remedies for these materials. Costs for transportation from the FCP to a temporary offsite storage facility, and subsequent disposal at either the storage facility, or at a subsequent offsite facility, will be equivalent to the transportation and disposal costs estimated for the current remedy. If transportation were to be required from a storage facility to another offsite facility for disposal, the additional costs would be equivalent to the transportation cost reflected above. Based upon the above estimates, the "worst case" incremental cost of temporary offsite storage (storage of the material from all three silos for the entire two-year period, with subsequent transportation to a disposal site) would be significant but not fundamental. Further, the cost, schedule, and risk-reduction benefits of adding this incremental step in offsite management of the silo material would outweigh the incremental cost of temporary off-site storage.

Adding the option for temporary offsite storage represents a significant, but not fundamental, change to the current remedy with respect to scope, performance, and cost.

4.0 AFFIRMATION OF THE STATUTORY DETERMINATIONS

Considering the new information that has become available and the changes that have been made to the selected remedy, DOE and U.S. EPA believe that the revised remedy meets all of the statutory requirements of Section 121 of CERCLA as amended. The revised remedy 1) is protective of human health and the environment, 2) complies with Federal and State requirements that are legally applicable or

13

relevant and appropriate to the remedial action, and 3) since the cost of the revised remedy would remain proportional to its overall effectiveness, the revised remedy is cost-effective.

5.0 PUBLIC PARTICIPATION

The draft Final ESD was made available for public inspection for formal public comment from November 18, 2004 through December 27, 2004. Post cards announcing this public review and comment period were mailed to key Fernald stakeholders, and to representatives from state regulatory agencies in states potentially impacted by the actions addressed in the ESD. An announcement of the public comment period and an electronic copy of the draft Final ESD were posted on the Fernald Closure Project web site.

A public briefing on the draft Final ESD was held on December 7, 2004 at the Crosby Township Senior Center. A presentation was made by DOE-FCP on the proposed changes and a question and answer period was conducted. The formal comment period followed this question and answer period. A court reporter was present to record and prepare a transcript of the formal comment period

As a result of this public comment period, the DOE received comments from 2 individuals at the public hearing and from a third in writing subsequent to the hearing. A responsiveness summary has been prepared addressing these comments. The responsiveness summary, the transcript of the hearing, and the text of the written comment, are included as Attachment 2 to this final ESD.

ATTACHMENT 1

DOCUMENTATION CONCERNING ISSUES RAISED BY THE ATTORNEY GENERAL OF THE STATE OF NEVADA

1. April 13, 2004 Letter from Brian Sandoval, Attorney General State of Nevada to Jesse Roberson, DOE Assistant Secretary for Environmental Management
2. April 30, 2004 Letter from Marc Johnston, DOE Deputy General Counsel for Litigation to Brian Sandoval, Attorney General State of Nevada
3. July 28, 2004 Letter from Lee Liberman Otis, DOE General Counsel to Brian Sandoval, Attorney General State of Nevada
4. August 23, 2004 letter from Brian Sandoval, Attorney General State of Nevada to Lee Liberman Otis, DOE General Counsel

STATE OF NEVADA
OFFICE OF THE ATTORNEY GENERAL
100 N. Carson Street
Carson City, Nevada 89701-4717
Telephone (775) 684-1100
Fax (775) 684-1108
ag.state.nv.us
E-Mail: aginfo@ag.state.nv.us

BRIAN SANDOVAL
Attorney General

ANN WILKINSON
Assistant Attorney General

April 13, 2004

Ms. Jessie H. Roberson
Assistant Secretary for Environmental Management
U.S. Department of Energy
EM-1, Room 5A-014
1000 Independence Ave. S.W.
Washington, D.C. 20585

Re: Planned Shipment of Wastes from Fernald to Nevada Test Site

Dear Ms. Roberson:

The State of Nevada has been advised that DOE's Environmental Management Division is intending imminently to ship some 7,000 containers of radioactive waste from DOE's Fernald, Ohio site to the Nevada Test Site ("NTS") for disposal. DOE's effort to bring this dangerous waste into Nevada is a flagrant violation of applicable federal and state laws and, indeed, of DOE's own rules. Even worse, the consequence of this unlawful action will be to create an extraordinary public health and environmental hazard in our state. Accordingly, Nevada hereby notifies DOE that we intend to seek prompt judicial redress to prevent the transport to and disposal of the Fernald wastes at NTS unless DOE takes immediate action to stop the shipments.

It is Nevada's understanding that the waste destined for disposal at NTS may amount to as much as 153.6 million pounds of material from Silos 1 and 2 and Silo 3 at Fernald, with a volume of at least 14,000 cubic yards, or 378,000 cubic feet. When stabilization is complete, volumes will be substantially greater. We also understand that hazardous constituents in this waste exceed standards established by the Resource Conservation and Recovery Act ("RCRA") for lead and probably other hazardous substances (such as selenium), and thus the waste would normally constitute "mixed waste" under Nevada's federally approved RCRA program.

However, according to DOE documents, this waste has been classified by DOE and EPA as Atomic Energy Act ("AEA") section 11(e)(2) waste, ostensibly providing for an exemption from safe and environmentally sound disposal requirements of RCRA. Moreover, this material is evidently of such a high radioactivity concentration that it

cannot be sent for disposal to Envirocare's commercial radioactive waste disposal facility in Utah, a facility properly licensed by the NRC for safe and effective management of radioactive waste and the chosen disposal location for most of Fernald's other radioactive wastes, including mixed wastes.

As discussed in detail below, DOE's designation of this waste as 11(e)(2) material not subject to Nuclear Regulatory Commission ("NRC") or Agreement State regulation blatantly misapplies that section of the AEA. If DOE chooses to classify the waste as 11(e)(2) waste pursuant to the AEA, then DOE must also comply with the waste management requirements established through the AEA in conjunction with the 11(e)(2) waste designation and dispose of the wastes at a facility appropriately licensed by the NRC or an Agreement State for 11(e)(2) waste disposal. The NTS disposal facility is clearly not such a facility.

As a fundamental legal matter, it must be recognized by DOE that the status of waste as "11(e)(2) waste" is not simply a matter of nomenclature, but explicitly entails an array of regulatory treatments including, to be sure, an exemption from RCRA requirements under the 1978 Uranium Mill Tailings Radiation Control Act ("UMTRCA)," but also affirmative obligations to comply with the other requirements of UMTRCA. After all, section 11(e)(2) was added to the AEA by UMTRCA. These attributes of section 11(e)(2) byproduct waste reflect UMTRCA's twofold purpose:

> [F]irst, to close the gap in NRC regulatory jurisdiction over the nuclear fuel cycle by subjecting uranium and thorium mill tailings to the NRC's licensing authority; and second, *to provide a comprehensive regulatory regime for the safe disposal and stabilization of the tailings.*

Kerr-McGee Chemical Corp. v. NRC, 903 F.2d 1, 3 (D.C. Cir. 1990) (emphasis added).

UMTRCA established regulatory regimes for historical uranium sites (Title I), as well as for those that would continue operating (Title II), and conferred regulatory jurisdiction on EPA and NRC to regulate their activities. DOE's own uranium processing wastes have never been subject to NRC jurisdiction. Section 11(e)(2) was created by UMTRCA to deal with uranium mining and processing hazards not within the DOE complex, authorizing regulation of those hazards by EPA and NRC. DOE cannot now call Fernald wastes section 11(e)(2) wastes, a classification created by UMTRCA, without also complying with all the attributes of such a classification that Congress both required in UMTRCA and, as discussed below, explicitly reaffirmed in the Energy and Water Development Appropriations Act of 2004.

For DOE to avail itself of the benefits of the status of section 11(e)(2) waste but absolve itself of any duty to comply with the other requirements of that status—requirements designed by Congress to assure the safe disposal of radiological and

non-radiological materials associated with uranium mining and processing—is a transparently unlawful usurpation of prerogatives belonging only to Congress. Such a maneuver would also violate the safety requirements of the Atomic Energy Act applicable to DOE even when it self-regulates, and would fly in the face of requirements in CERCLA at 42 U.S.C. Section 9621(d)(3) that wastes shall be transferred only to a disposal facility operating in full compliance with applicable federal law and all applicable State requirements.

Indeed, escaping from applicable Nevada RCRA disposal safety requirements appears to be the only reason for DOE's strange classification of the Fernald materials as 11(e)(2) waste somehow exempt from NRC or Agreement State regulation, with the perverse result that wastes which were too dangerous to go to a permitted, lined, and adequately monitored facility at Envirocare are now slated for NTS's unpermitted, unlined, and inadequately monitored disposal site. As you are aware, waste reclassification of precisely this convenient sort was soundly overruled in DOE's dispute last summer with the Natural Resources Defense Council in federal court in Idaho.

In any event, even if the Fernald waste is 11(e)(2) waste, it very likely predates the 1978 UMTRCA and thus would not be eligible for that statute's RCRA exemption. If, on the other hand, the waste does not predate that statute and is in fact 11(e)(2) waste, federal law clearly contemplates its disposal *only* at an authorized 11(e)(2) disposal site, and not at a low-level radioactive waste disposal site without such authorization.

The reason for this requirement is obvious. Uranium processing wastes are not merely low-level wastes. Regulations at 40 C.F.R. Part 192 were designed to deal with the fact that uranium processing wastes also contain certain quantities of hazardous constituents. This is evident in that regulation's establishment of maximum concentration requirements for hazardous elements such as lead and selenium (*see* 40 C.F.R. 192, Subpart A, Table 1, and Appendix I. *See also* NRC's parallel regulations at 10 C.F.R. Part 40, Appendix A). Thus, 11(e)(2) disposal-site licensing contemplates the performance assessment of accompanying quantities of non-radiological hazardous elements typically associated with uranium processing. (*See, e.g.*, NRC's 10 C.F.R. Part 40, Appendix A Introduction, referring to protection against "nonradiological hazards" as well as radiological hazards.) The same is not true for low-level radioactive waste disposal licensing, even under DOE's self-regulatory regime as reflected in DOE Order 435.1-1, which addresses only radiological hazards.

DOE has no authority to refashion the legal attributes of section 11(e)(2) waste by simply calling the Fernald material post-1978 11(e)(2) waste that is magically exempt from all federal and state hazardous waste regulations and otherwise applicable 11(e)(2) disposal licensing requirements. Indeed, it is Nevada's understanding that DOE has no plans even to test whether the Fernald wastes, after stabilization, meet the universal treatment standards under the land disposal requirements of RCRA. DOE

thereby avoids all appropriate scientific inquiry as to the long-term impacts of hazardous constituents it would dispose of at NTS—the precise assessment required for every other 11(e)(2) and RCRA disposal facility in this country.

Any conceivable doubt about DOE's lack of authority to dump the Fernald 11(e)(2) wastes at NTS was put to rest by Congress in the Energy and Water Development Appropriations Act of 2004 (Public Law 108-137, December 1, 2003), which in Section 312 specifically referred to the Fernald silo wastes at issue and required that "*[t]he Nuclear Regulatory Commission or an Agreement State, as appropriate, shall regulate the material as '11e.(2) by-product material' for the purpose of disposition of the material in an NRC-regulated or Agreement State-regulated facility.*" (Emphasis added.) NTS, of course, is not such a facility.

As if that were not enough, DOE's plan to send the Fernald silo wastes to NTS is also in direct conflict with DOE's *Record of Decision (ROD) for the Department of Energy's Waste Management Program: Treatment and Disposal of Low-Level Waste and Mixed Low-Level Waste; Amendment of the Record of Decision for the Nevada Test Site* (DOE 6450-01-P). The ROD defines "Low-Level Waste" as "all radioactive waste not classified as high-level waste, transuranic waste, spent nuclear fuel, *or by-product tailings containing uranium or thorium from processed ore (as defined in Section 11(e)2 of the Atomic Energy Act of 1954.*" (Emphasis added.) While the Record of Decision for the NEPA documentation completed for the Fernald site identified "NTS or an appropriately-permitted commercial disposal facility" for disposition of wastes, we believe any such designation could not summarily override the Waste Management ROD as it applies to NTS. Moreover, we submit that the Fernald decision was based on DOE's intent to apply for and obtain a RCRA permit for disposal of hazardous waste at NTS. We do not believe the Fernald decision anticipated disposal of these disputed wastes as merely low-level waste.

Finally, DOE's own governing manual of regulations for radioactive waste disposal at NTS, Order M-435.1-1, clearly prohibits the disposal of *over 14,000 cubic* yards—by any measure hardly a "small quantity"—of 11(e)(2) waste at the NTS low-level waste disposal site. That manual, at Section IV.B(4), provides that "*[s]mall quantities* of 11e.2 byproduct material and naturally occurring radioactive material may be managed as low-level waste provided they can be managed to meet the requirements for low-level waste disposal in Section IV.P [performance requirements] of this Manual." (Emphasis added.) DOE's Implementation Guide for M-435.1-1 refers to the legislative intent of the UMTRCA in further defining "small quantities" of 11(e)(2) materials that are otherwise "managed by the Department *according to the requirements of 40 CFR Part 192* and disposed at *specially designed tailings disposal sites* established under the UMTRCA." DOE G-435.1-1 at IV-12 (emphasis added). Two specific examples given by DOE of "small quantities" were "a few vials" and "100 cubic meters" of non-eligible wastes. *Id.* at IV-13.

In short, there appears to be no legal, regulatory, or scientific justification whatsoever for DOE's plan to dispose of massive quantities of Fernald's most hazardous and radioactive wastes at NTS. DOE's plan is reckless and unsafe, and it flagrantly violates the law. Please confirm by April 30, 2004, that this waste will not be coming to Nevada. If DOE cannot so certify by that time, Nevada intends to seek prompt judicial redress. I am confident Nevada's federal court will look no more favorably on DOE's expedient actions here than did the court in Idaho last summer.

Sincere regards,

BRIAN SANDOVAL
Attorney General

c: Honorable Mike Leavitt, Administrator
U.S. Environmental Protection Agency

Honorable Nils J. Diaz, Chairman
U.S. Nuclear Regulatory Commission

5802

Department of Energy
Washington, DC 20585

April 30, 2004

The Honorable Brian Sandoval
Attorney General
100 N. Carson Street
Carson City, Nevada 89701-4717

Re: Waste Shipments from Fernald to Nevada Test Site

Dear Mr. Sandoval:

I have been asked to respond to your April 13, 2004, letter to Assistant Secretary Roberson. In that letter you requested that the Department of Energy certify that it will not ship the materials that are currently stored in the silos at its Fernald facility to the Nevada Test Site.

The Department is evaluating the points raised in your letter, and at this time we are unable to state how long that process will take. Accordingly, I have been authorized to represent that the Department will not ship any of the material stored in the Fernald silos to the Nevada Test Site without first providing to you 45-days advance notice.

Sincerely,

Marc Johnston
Deputy General Counsel
For Litigation

Printed with soy ink on recycled paper

5802

Department of Energy
Washington, DC 20585

July 28, 2004

The Honorable Brian Sandoval
Attorney General
100 N. Carson Street
Carson City, NV 89701-4717

Re: Shipment of Fernald Silo Wastes to the Nevada Test Site

Dear Attorney General Sandoval:

I appreciated the opportunity to speak with you on July 6 about the Department's plans regarding the materials currently stored in three silos at the Department's Fernald facility. As I indicated during our conversation, while we disagree with the legal objections raised in your April 13 letter to Assistant Secretary Roberson to disposing of these materials at the Nevada Test Site (NTS), we do share your fundamental concern that any disposition must be protective of human health and safety and of the environment. Accordingly, it seemed to us – and still does – worth exploring whether our legal differences can be compromised and set aside by developing a process through which the Nuclear Regulatory Commission would be called upon to vouchsafe the appropriateness of disposition at NTS, albeit not as a licensor.

In response to this suggestion you indicated that you needed a better understanding of DOE's legal position before you could assess the prospects for any compromise along these lines. You therefore asked us to provide our legal analysis of the basis for disposing of the Fernald silo materials at NTS, and specifically mentioned three issues that your April 13 letter discussed: whether disposition would be consistent with section 312 of Public Law 108-137; whether disposition would be consistent with DOE Order 435.1; and whether disposition would be consistent with applicable Uranium Mill Tailings Radiation Control Act requirements. I told you we would get you our views on these issues within approximately two weeks. This letter addresses each of those issues in order.

1. Section 312 of Public Law 108-137 directs that "[n]otwithstanding any other provision of law, the material in the concrete silos at the Fernald uranium processing facility currently managed by the Department of Energy * * * shall be considered 'byproduct material' as defined by section 11e.(2) of the Atomic Energy Act." This direction is clear on its face: the materials currently stored in the Fernald silos "shall be considered" 11e.(2) material "notwithstanding any other provision of law." However DOE or anyone else might otherwise have classified those materials, with the enactment of section 312 they are now, by law, 11e.(2)

Printed with soy ink on recycled paper

7-30-04; 9:58AM;ATTORNEY GRAL NORTH ; 775 684 1108

23

byproduct material.

Section 312 then goes on to state that "[t]he Nuclear Regulatory Commission or an Agreement State, as appropriate, shall regulate the material as '11e.(2) by-product material' for the purpose of disposition of the material in an NRC-regulated or Agreement State-regulated facility." Whether disposition at NTS of the materials currently stored in the Fernald silos would be consistent with section 312 depends on how this second sentence is read. Because NTS is not an NRC-regulated or Agreement State-regulated facility, disposing of the Fernald silo materials at NTS would be inconsistent with the second sentence of section 312 if the second sentence is construed to direct that those materials can only be disposed of at an NRC-regulated or Agreement State-regulated facility. If, on the other hand, the second sentence of section 312 is read merely to direct the NRC (or an Agreement State) to regulate the Fernald silo materials as 11e.(2) byproduct material in the event that DOE seeks to dispose of those materials at a regulated facility, then section 312 poses no bar to disposition at NTS.

Both the statutory text and the legislative history of section 312 indicate that this latter reading is the correct one. On its face, the text of section 312 simply does not say that the Fernald silo materials must be disposed of in a regulated facility. Indeed, the text does not mandate any action on the part of DOE with respect to these materials. The direction provided in section 312 is instead to the NRC, which "shall regulate" the Fernald silo materials as 11e.(2) material. That direction, however, applies only "for the purpose of disposition of the material in an NRC-regulated" facility. Section 312 thus provides no direction at all that is applicable where the Fernald silo materials are not disposed of in an NRC-regulated facility. Since Department of Energy facilities are generally excepted from NRC regulation (see Atomic Energy Act of 1954, sec.11.s, 42 U.S.C. 2014.s; see also AEA sec.110, 42 U.S.C. 2140; Energy Reorganization Act of 1975, sec.104, 42 U.S.C. 5814; Department of Energy Organization Act, sec. 301, 42 U.S.C. 7151), and since Congress speaks clearly when it wants DOE's actions to be subject to NRC regulation (see, *e.g.*, 42 U.S.C. 5842 (titled "Licensing and Related Regulatory Functions Respecting Selected [DOE] Facilities")), an intent to restrict disposition of the Fernald silo materials to NRC-regulated facilities or to require NRC licensing of a DOE facility such as NTS by virtue of disposal of the Fernald material there cannot be inferred from the text of section 312.

Moreover, the legislative history of section 312 confirms that it was meant to allow, but not compel, disposition of the Fernald silo materials at a regulated facility. Section 312 had its genesis in DOE's desire to have the option of disposing of the Fernald silo materials at a commercial disposal facility. Since a commercial facility would be regulated by the NRC or an Agreement State, that option was unavailable given the NRC's conclusion that its (and Agreement States') statutory authority to regulate byproduct material was limited to byproduct material that either had been generated at sites that were licensed as of the date of the enactment of section 11e.(2) in 1978 or that was generated at a licensed site thereafter. In re Envirocare of Utah and Snake River Alliance, NRC DD-00-06, at 18 (Dec. 13, 2000). Although the materials stored in the Fernald silos met the physical criteria for byproduct material, they did not meet the NRC's definition of 11e.(2) material because, as they were under the control of DOE, they had

7-30-04; 8:25AM;ATTORNEY GRAL NORTH 775 684 1108 # 2/

not been generated at a licensed facility.

Legislative attention was first focused on this problem in the Senate version of the Energy and Water Development Appropriations Act for Fiscal Year 2004, where, as originally introduced, what ultimately became section 312 read: "The Nuclear Regulatory Commission * * * shall regulate the material as '11e.(2) by-product material' in the event that the Department of Energy proposes to dispose of the material in an NRC-regulated * * * facility." S. 1424, 108th Cong. § 311 (2003) (emphasis added). See also S. Rep. No. 108-105, at 147 (2003) (this provision "allows the Department to dispose of certain waste at Fernald * * * as 'byproduct material'"). On a parallel legislative track, on July 22, 2003, the Administration officially transmitted a similar proposal, which was referred to the Senate Environment and Public Works Committee (July 28) and the House Energy and Commerce Committee (July 25), and which stated "If the Department of Energy disposes of the material in such a facility, the Nuclear Regulatory Commission * * * shall regulate the Material * * *." The Administration explained that it was offering this proposal so that the materials stored in the Fernald silos "can be disposed of * * * at a commercial facility." Letter from Spencer Abraham, Secretary of Energy, to J. Dennis Hastert, Speaker of the House, dated July 22, 2003 (emphasis added). Senator Voinovich filed language based on this proposal as an amendment (S.A. 1443) to the Senate version of the Energy Policy Act of 2003, S. 14, 108th Cong. (2003), which stated "the Secretary may dispose of the material in a facility under the jurisdiction of the Commission or a State." 149 Cong. Rec. S10,696 (daily ed. July 31, 2003) (emphasis added). This amendment was never offered on the Senate floor, but in the Conference Report on the companion House bill, H.R. 6, the House and Senate conferees included a provision stating that "[t]he Department of Energy may dispose of the material in a facility regulated by the Nuclear Regulatory Commission" and that, "[i]f the Department of Energy disposes of the material in such a facility, the Nuclear Regulatory Commission * * * shall regulate the material as byproduct material." H.R. Conf. Rep. No. 108-375, § 634 (2003) (emphasis added). As the underscored language in these precursors to section 312 clearly states, Congress's intention was to give DOE the option of disposing of the Fernald silo materials at an NRC-regulated facility, not to limit DOE's disposal options to NRC-regulated facilities.

There is no indication in the legislative record that Congress meant to convey any different intention when, in Conference Committee on the Energy and Water Development Appropriations Act, it "modifie[d] [the] provision proposed by the Senate" by changing "in the event that the Department of Energy proposes to dispose" to the more succinct final formulation, "for the purpose of disposition." H.R. Conf. Rep. No. 108-357, at 175 (2003). Had Congress intended this variation in wording to convert what throughout the legislative process had always been understood to be an option into a mandate, it is reasonable to expect that it would have provided some indication that it was making such a fundamental change. There is no such indication, however, anywhere in the legislative record. In fact, the only clear substantive modification that the Conference Committee made to the original Senate proposal was to add the ore processing residual materials in the Niagra Falls Storage Site managed by the Army Corps of Engineers as material that also shall be considered 11e.(2) byproduct material. This addition suggests that the reason why the Conference Committee chose to abbreviate the language that

7-30-04; 8:58AM;ATTORNEY GRAL NORTH ;1 775 684 1108 # 3/

the Senate had employed was to avoid an overly cumbersome formulation such as "in the event that the Department of Energy or the Army Corps of Engineers, as appropriate, proposes to dispose." In any event, the Conference Committee Report reaffirmed that Congress's intent remained what it had been all along: to "allow[ ] the disposal of certain waste at Fernald * * * as 'byproduct material.'" H.R. Conf. Rep. No. 108-357, at 175 (emphasis added).

2. The Fernald silo materials are managed by DOE pursuant to its authority under the Atomic Energy Act, see, *e.g.*, 42 U.S.C. 2121(a)(3), 2201(b), and the Department of Energy Organization Act, see, *e.g.*, 42 U.S.C. 7133(a)(8). Under these authorities DOE may, *inter alia*, "establish by rule, regulation, or order * * * standards and instructions to govern * * * special nuclear material, source material, and byproduct material," 42 U.S.C. 2201(b), and may "provide for safe storage, processing, transportation, and disposal of hazardous waste (including radioactive waste)" resulting from the program activities of DOE and its predecessor agencies. 42 U.S.C. 2121(a)(3). Pursuant to these authorities DOE has adopted Order 435.1, which establishes standards and procedures for managing radioactive wastes at DOE-owned facilities.

Under Order 435.1 DOE may dispose of "small quantities" of 11e.(2) byproduct materials in a low-level waste disposal facility (such as at NTS) "provided they can be managed to meet the requirements for low-level waste disposal." We do not understand there to be any doubt that the Fernald silo materials "can be managed to meet the requirements for low-level waste disposal" at NTS. The proposal to dispose at NTS of the materials currently stored in the Fernald silos was the product of a rigorous public process conducted under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), at the end of which DOE and the United States Environmental Protection Agency jointly decided that the appropriate disposition for these materials is to dispose of them either at NTS or at a commercial disposal facility. In addition, DOE has prepared a Performance Assessment for the disposal of the Fernald silo materials at NTS which demonstrates that disposal of the Fernald silo materials at NTS would meet the disposal requirements set forth in Order 435.1, Manual, Chapter IV, for low-level waste. For example, the Performance Assessment calculated potential doses and potential releases for a 1,000 year period, and concluded that disposal at NTS of the Fernald silo materials would result in a radon flux level of about 3 pCi per square meter per second, a level well below the 20 pCi per square meter per second requirement.

A question has been raised, however, whether the Fernald silo materials exceed the "small quantities" of 11e.(2) material that can be disposed of as low-level waste under Order 435.1 since the volume of the Fernald silo materials is about 14,000 cubic yards. It would be odd to interpret this requirement of the Order as precluding disposal of the Fernald silo materials at NTS since the CERCLA decision to do just that had already been made. In fact, the Guide to Order 435.1 dispels any ground for speculation as to whether the Order *sub silentio* countermanded that CERCLA decision: it specifically mentions (at IV-13) the Fernald materials as an example of 11e.(2) material that can be disposed of as low-level waste. As the Guide explains (at IV-12), the "small quantities" requirement is intended to distinguish the 11e.(2) material that can be disposed of as low-level waste from the material found at byproduct waste tailings sites subject to UMTRCA. UMTRCA sites typically contain two to seven million cubic

7-30-04; 8:58AM;ATTORNEY GRAL NORTH

yards of byproduct material per pile. Seen in this light, it is plain that disposing of the much smaller volume of Fernald materials as low-level waste is not what the "small quantities" requirement of Order 435.1 was intended to prevent.

3. UMTRCA was enacted to deal with uranium mining and processing wastes produced outside of the DOE complex. It established a "Remedial Action Program" for uranium processing sites (Title I), and a framework for "Uranium Mill Tailings Licensing and Regulation" (Title II). Section 206 of UMTRCA added a new section to the Atomic Energy Act, 42 U.S.C. 2022, which required EPA to promulgate "standards of general application * * * for the protection of the public health, safety, and the environment from radiological and nonradiological hazards associated with residual radioactive materials." Sections 202, 203 204 and 205 of UMTRCA added or amended various sections of the Atomic Energy Act to give the NRC regulatory jurisdiction over "Certain Byproduct Material." 42 U.S.C. 2113 (title), 2114 (same).

Pursuant to the authority delegated to it in UMTRCA, the NRC has promulgated 10 C.F.R. Part 40, which sets forth "procedures and criteria for the issuance of licenses" and "provide[s] for the disposal of byproduct material." 10 C.F.R. 40.1(a). By the express terms of part 40, however, the requirements of that part are inapplicable to DOE "except * * * to the extent that its facilities and activities are subject to the licensing and related regulatory authority of the Commission pursuant to section 202 of the Energy Reorganization Act of 1974 [42 U.S.C. 5842] and the Uranium Mill Tailings Radiation Control Act of 1978 [42 U.S.C. 2111-2114]." 10 C.F.R. 40.4. Neither of these exceptions is applicable to the materials stored in the Fernald silos and their disposition: Section 202 of the ERA defines certain specific contexts in which DOE facilities are subject to NRC licensing, none of which is implicated here. And the relevant UMTRCA provisions apply to DOE only where it takes over ownership and custody of byproduct material or a disposal site from an NRC licensee, which also is not the case here. Accordingly, disposition at NTS of the materials stored in the Fernald silos is not subject to NRC regulation under 10 C.F.R. Part 40.

Pursuant to the authority delegated to it in UMTRCA, EPA has promulgated 40 C.F.R. Part 192, which establishes health and environmental protection standards for uranium and thorium mill tailings. Subparts A, B and C of Part 192 are expressly applicable only to sites designated under sections 102 or 108 of UMTRCA, 42 U.S.C. 7912, 7918, and thus are inapplicable here. Subparts D and E of Part 192 by their express terms only apply to the management of byproduct material under section 84 of the Atomic Energy Act, 42 U.S.C. 2114, which "simply authorizes the NRC to implement and enforce the standards to be promulgated by EPA at those sites it licenses as well as at the sites to be remediated by DOE under Title I [of UMTRCA]." NRC DD-00-06 at 13. This too is inapplicable to disposition at NTS of the materials stored in the Fernald silos.

* * *

7-30-04; 8:59AM;ATTORNEY GRAL NORTH

The foregoing legal analysis of the issues raised in your April 13 letter to Assistant Secretary Roberson summarizes the legal basis for proceeding with the planned disposition at NTS of the materials that are currently being stored in the silos at Fernald. It is provided partly in the hope that it will persuade you that it is correct, but also in the hope that it is at least sufficient to persuade you that there are grounds for seeing whether we can set our legal differences aside and instead work together to develop a process that will provide assurances that disposal at NTS of the Fernald silo materials will be, as DOE believes, consistent with the protection of human health and safety and the environment. For example, although we believe that the requirements of 40 C.F.R. Part 192 are inapplicable as regulations, we also believe that disposing of the Fernald materials at NTS would in fact conform with those requirements, and we are willing to work to devise a process that would let the NRC review this question.

Please let me know at your earliest convenience whether you are interested in pursuing this path.

Sincerely,

Lee Liberman Otis
General Counsel

7-30-04; 8:59AM;ATTORNEY GRAL NORTH ;1 775 684 1108 # 6/

5802

ATTORNEY GENERAL
NEVADA DEPARTMENT OF JUSTICE
100 North Carson Street
Carson City, Nevada 89701-4717

BRIAN SANDOVAL
Attorney General

ANN WILKINSON
Assistant Attorney General

August 23, 2004

Ms. Lee Liberman Otis
General Counsel
U.S. Department of Energy
Room 6A-245
1000 Independence Ave. S.W.
Washington, D.C. 20585

Re: Proposed Shipments of 11e.2 wastes from Fernald to Nevada Test Site

Dear Ms. Otis:

Thank you for your letter of July 28, 2004, explaining DOE's position concerning disposition of the Fernald silo wastes at the Nevada Test Site (NTS). After studying it, I am even more certain that these dangerous wastes cannot legally be disposed of at NTS, and in any event, it would be inappropriate for me to enter into an agreement with you that would violate applicable laws. While I appreciate the dilemma DOE is in with respect to these wastes, the solution is not to disregard the law to facilitate an expedient disposal option. Instead, DOE should take the appropriate steps now to secure placement of these materials for storage or disposal at an NRC or Agreement State licensed facility.

We disagree with you on your interpretation of Section 312 of Public Law 108-137. Having defined the Fernald silo wastes as 11e.2 wastes, that law goes on to state that "[t]he Nuclear Regulatory Commission or an Agreement State, as appropriate, shall regulate the material as 11e.2 byproduct material for purpose of disposition of the material in an NRC-regulated or Agreement State-regulated facility." If this sentence means what you advocate—that it simply directs NRC (or an Agreement State) to regulate the materials in the event DOE elects to dispose of those materials in a regulated facility—then the sentence itself is wholly unnecessary and redundant, since no waste materials (including DOE wastes) can ever be disposed of in a "regulated" facility without being regulated by NRC or an Agreement State.

Having defined the wastes as 11e.2, Congress needed to do nothing more to arrive at your interpretation. But Congress wisely did otherwise.

Telephone 775-684-1100 • Fax 775-684-1108 • www.ag.state.nv.us • E-mail aginfo@ag.state.nv.us

Moreover, the legislative history provisions you cite strongly support the view that, in enacting the actual language of the statute, Congress deliberately removed the elective element of previous drafts. Indeed, we know that Envirocare and its lobbyists were pushing the drafters for this precise result because they wanted to emerge from the appropriations process as the exclusive disposal option for the Fernald silo wastes. Of course, the wastes later proved to be too hazardous for Envirocare's state regulators to allow disposal there, but that does not negate the intent of the statute.

It is unreasonable to believe that, having reclassified these wastes in a non-conservative direction relative to safety in the first sentence of the legislation, Congress would then, in the second sentence, give DOE the option to simply dispose of the wastes in an unlicensed, unlined facility that does not even remotely meet the protections required by NRC or Agreement States for 11e.2 disposal.

Precisely because Congress knew it was cutting corners to facilitate cleanup by redefining the Fernald silo wastes, it is far more plausible that it wished to ensure that the precautions of an NRC or Agreement State license be applied.

In short, even giving DOE the full benefit of *Chevron*, we think your reading of the statute is irrational, contrary to the normal precepts of statutory construction, contrary to the legislative history, contrary to sound safety policies implicit in all regulatory regimes for 11e.2 wastes, and impermissible under the law.

Similarly, your argument with respect to DOE's Order 435.1 is unpersuasive. After all, that rule begins with the mandate that 11e.2 wastes are *precluded* from being disposed of in a low-level disposal site. Such a mandate is necessary because low-level sites have none of the protections customarily associated with hazardous as well as radioactive constituents, unless, *unlike* NTS's Pit 5, they are also permitted for RCRA wastes and/or 11e.2 wastes.

Moreover, it is difficult to believe that any judge would consider 3,750 truckloads of wastes, wastes *more* dangerous than all other 11e.2 wastes, as a "small quantity" qualifying for a wholesale exemption from your own disposal rule. Indeed, that quantity substantially exceeds the annual quantity of all hazardous wastes disposed in Nevada at every permitted RCRA facility *combined*.

If it is DOE's desire to radically redefine "small quantity" to actually mean "large quantity," then you are required to follow the APA's rulemaking requirements. You cannot obliterate one of your own rules by the mere stroke of a pen in a CERCLA order.

Finally, your discussion of UMTRCA appears to illustrate exactly why your proposal to dispose of the Fernald silo wastes at NTS is, like your other self-serving "interpretations," out of bounds. As you note, Part 40 and Part 192, regulating 11e.2 tailings, indeed do not apply to DOE's disposal facilities. That is undoubtedly why the drafters of Order 435.1 precluded disposal of 11e.2 materials in DOE's low-level disposal sites.

If such materials were disposed of in DOE's low-level sites, they would not be subject to the kind of protections needed for waste this dangerous. It is precisely because Part 40 and Part 192 do not apply to NTS that Nevada objects to your proposal and believes your interpretation of the law to be incorrect. Put simply, your interpretation strains to avoid the application of any of the established disposal standards by which Nevada's citizens and environment can be protected from this dangerous waste.

In conclusion, on behalf of the citizens of Nevada, I will continue to oppose any effort by DOE to dispose of these unauthorized and highly dangerous wastes at NTS, a site that is wholly inappropriate and unlicensed to accept the Fernald wastes. Moreover, despite your suggestion otherwise, I will not enter into an agreement with DOE that compromises the law.

Specifically, I do not understand how DOE could ask NRC to vouch for the safety of disposal of wastes at NTS when NRC has no jurisdiction to do so. Your suggestion contradicts former acts of DOE. For example, DOE expressly rejected this sort of voluntary oversight role by NRC in *Waste Control Specialists v. DOE*, 141 F.3d 564 (5th Cir. 1998).

If you are confident that NTS can meet the requirements of Part 192, then perhaps you should simply apply for an 11e.2 disposal license for the site. Nevada would not, and could not, object to disposal of this material in an appropriately licensed and properly lined and regulated landfill.

If you are seeking other disposal options, I understand that Waste Control Specialists (WCS) has applied for an 11e.2 disposal license for its site in West Texas. This site has rail access and WCS is both legally able and willing to store the wastes there pending issuance of its 11e.2 license. Unlike DOE's NTS proposal, this option would be legal, cost effective, and provide a permanent solution that protects the health and safety of the citizens of Nevada and Ohio.

Sincere regards,

BRIAN SANDOVAL
Attorney General

By United States Mail and Facsimile (202-586-1499)

TOTAL P.05

ATTACHMENT 2

TEXT OF PUBLIC COMMENTS

AND

RESPONSIVENESS SUMMARY

Comment 1: Edwa Yocum

"DOE has not addressed the issue of what happens after two years off-site temporary storage. So my comment is that the Fernald facility must never become a permanent disposal or storage site for Silos 1, 2, and 3 materials.

The surrounding Fernald community after many meetings with DOE, Fernald decides to support the balance approach towards the model towards the cleanup of the Fernald Site. And I hope DOE headquarters and Fluor Fernald will continue to support that balance of approach model because by working together, DOE, Fluor Fernald, and community members will have accomplished a safe environment for future generations."

Response:

The role of permanent protective offsite disposal of the Silo materials as a key component of the 'balanced approach' to disposal of waste from closure of the FCP is identified as a key driver for the decision to consider temporary offsite storage in Section 1.2 of the ESD. In section 3.1, the ESD addresses the concerns raised in this comment by imposing specific constraints on offsite storage, including the prohibition on return of Silo material to the FCP once it has been accepted at an offsite facility, and the two-year limit on temporary storage. Upon final approval of this ESD, these limitations will become enforceable by the U.S. EPA under CERCLA and the 1991 *Consent Agreement as Amended under CERCLA Sections 120 and 106(a)* between the U.S. EPA and the DOE.

In November 2004, Fluor Fernald issued Requests for Proposal (RFP's) for temporary offsite storage and/or permanent disposal of Silo 1, 2, and 3 materials in accordance with this ESD. To ensure the ability to satisfy the two-year limit on offsite storage, these RFPs required that proposals for temporary offsite storage include evidence that the facility has the ability to obtain approval of the necessary license for disposal license amendment within 18 months of contract award. The RFPs also specify that the DOE will retain ownership of the Silo material during any offsite storage period, and will be responsible for transferring the material to another facility for disposal if necessary to ensure disposal within the two-year period.

Comment 2: Vicki Dastillung:

"While the ESD answers some of our problems of what to do with the waste so that we can go forward with our clean-up, it opens up a lot of questions and fears for residents. It makes us worry that once the waste leaves, it could come back to us again or that it could become a case of national musical chairs where the waste just keeps traveling around and/or we pay for it indefinitely with no real pressure to make a permanent solution.

The waste needs to find a permanent home, not at Fernald, but if it goes into a situation temporarily where the public can't trust DOE's word as far as its previous agreements, future agreements could be in jeopardy because of the lack of credibility."

Response:

As stated in Section 1.2 of the ESD, the DOE's primary goal in adding the option for temporary offsite storage to the remedy for OU4 is to "maintain continuing progress towards completing treatment and offsite disposal of the silo materials in the most cost-effective and expeditious manner." Further, in order to ensure that adding this option does not result in a fundamental change to the scope, performance, or cost of the OU4 remedy, the revised remedy will 1) maintain the current final remedy of protective offsite disposal; 3) maintain all current criteria for treatment, packaging, transportation and disposal; and 4) preclude return of the material to the FCP. The ESD maintains the commitment, enforceable by the U.S. EPA under CERCLA and the 1991 *Consent Agreement as Amended under CERCLA Sections 120 and 106(a)*, that DOE complete final, protective disposal of the Silo 1, 2 and 3 materials no more than two years from initiating offsite storage.

Comment 3: Robert Vogel

"The need for offsite interim storage of Operable Unit 4 material is unfortunate since a great deal of effort has been expended to establish that following treatment K-65 material will meet an acceptable leach rate for lead. The effort to examine and enhance treatment of the material was lengthy and from the amount of data alone indicated DOE's commitment to meet TCLP goals for the treated material. After having been involved in this effort well more than a decade, I am very familiar with the data both before and following treatment. As a result I have previously raised the issue on several occasions of the difference between TCLP data from the most recent treatability testing as opposed to previous testing. The difference being primarily that the treated material appears to have come from the 1989 sampling event, resulting in much lower pretreatment TCLP data and extremely low TCLP data following treatment. Neither of these conditions occurred in previous testing. The point here is that of all the very good data which was developed to support meeting the regulatory requirements for K-65 material (irregardless of 1.1e.(2) status) the most recent data is weakest in terms of credibility. And credibility of data may be the deciding issue for where the material ultimately resides following interim storage.

I also realize that the issue of final disposition is not purely technical and that political forces will drive many decisions. But the fact remains that at the core of all of these decisions is the ability to believe in the data. This is essential for the disposition of K-65 material and for other wastes which ultimately must be stored somewhere.

The solution is actually much easier than it was even two or three years ago. This is the result of a great deal of K-65 material being removed from the silo. A few samples of this material of unquestionable origin could be tested using the most recent formulation. TCLP data from these tests would have a great deal of credibility in establishing the benefits of the treatment process and acceptability for permanent offsite disposition."

Response:

The primary issue raised by this comment involves the integrity of the historical data used to demonstrate the effectiveness of the chemical stabilization process in reducing the leachability of lead in Silos 1 and 2 material. First, is must be recognized that the November 2003 *Final Explanation of Significant Differences for Operable Unit 4 Silos 1 and 2 Remedial Actions* removed the Toxicity Characteristic Leaching Procedure (TCLP) analysis as a performance criteria for the chemical stabilization process, requiring only that the Silos 1 and 2 material be treated by chemical stabilization to attain the waste Acceptance Criteria (WAC) of the selected disposal facility.

The November 2003 ESD states that, although sampling and analysis of treated waste to meet TCLP criterion will no longer be required, "Treatability study data collected from past and future studies will be used both to optimize the chemical stabilization process requirements and to obtain the maximum reasonably obtainable reduction in leachability." Available data identifies a direct relationship between the pH of the stabilization mix and the leachability of lead in the treated product. While the studies indicate some variation in the data it does support the position that limiting our product to this specific pH range will provide a meaningful reduction in the leachability of lead. Our intent is to rely on this relationship as a basis for mix design and a fulfillment of the commitment to provide the maximum reasonably obtainable reduction in leachability. During the initial process runs with K-65 material, samples will be obtained to verify the mix. We will examine the pH of these initial mix designs to verify that we are within the target pH range derived from the studies. Adjustments to the mix will be made, if necessary, based on the samples from these initial containers.

5802

FERNALD OU4 ESD PUBLIC COMMENT

- - -

TRANSCRIPT OF PROCEEDINGS

- - -

The above-styled cause came on for hearing before Gary Stegner, Bill Taylor, and John Sattler, at 6:30 p.m. on Tuesday, December 7, 2004, at the Crosby Township Building, 8910 Willey Road, Cincinnati, Ohio.

- - -

(Whereupon, previously an Introduction and Safety Project Updates were given but not transcribed.)

* * *

MR. TAYLOR: I would like to go ahead and fulfill the purpose of the public hearing at this particular point. Right now we're going to start transcribing everything. Does somebody have comments that they would like to enter into the record this evening? If so, please raise your hand, state your name. We have an open floor.

I will remind you that it has to do strictly with the ESD, and I will also remind you that you can give us comments in writing or via e-mail anytime before the 27th, on or before the 27th of December. What we're asking for is flexibility to pursue interim storage of this waste, as a reminder to narrow things down and make it as concise as we can, capsulize it.

MS. YOCUM: I'll go first. Edna Yocum, Y O C U M, [redacted]. This is in reference to the ESD for Operable Unit 4 off-site interim storage. DOE has not addressed this issue of what happens after two

1 years off-site temporary storage. So my comment
2 is that the Fernald facility must never become a
3 permanent disposal or storage site for Silos 1, 2,
4 and 3 material.
5 The surrounding Fernald community
6 after many meetings with DOE, Fernald decided to
7 support the balance approach towards the model
8 towards the clean-up of the Fernald site. And I
9 hope DOE headquarters and Fluor Fernald will
10 continue to support that balance of approach model
11 because by working together, DOE, Fluor Fernald,
12 and community members will have accomplished a
13 safe environment for future generations. Thank
14 you.
15 MR. STEGNER: Do you want to leave
16 that with us?
17 MS. YOCUM: Yeah, I'll leave that
18 with you.
19 MR. STEGNER: Okay, thank you very
20 much. Does anyone else want to comment on the
21 record at this time?
22 MS. DASTILLUNG: I guess I'll make
23 a short one. Vicki Dastillung, D A S T I L L U N
24 G. While the ESD answers some of our problems of

1 what to do with the waste so that we can go
2 forward with our clean-up, it opens up a lot of
3 questions and fears for residents. It makes us
4 worry that once the waste leaves, it could come
5 back to us again or that it could become a case of
6 national musical chairs where the waste just keeps
7 traveling around and/or we pay for it indefinitely
8 with no real pressure to make a permanent
9 solution.
10 The waste needs to find a permanent
11 home, not at Fernald, but if it goes into a
12 situation temporarily where the public can't trust
13 DOE's word as far as its previous agreements,
14 future agreements could be in jeopardy because of
15 the lack of credibility. I guess that's it.
16 MR. STEGNER: Thank you, Vickie.
17 Any other comments for the record
18 this evening?
19 UNIDENTIFIED FEMALE: I would have
20 to take more time.
21 MR. STEGNER: I understand. I want
22 to thank you all for coming, and you have until
23 the 27th for comments, and we will then provide a
24 Responsiveness Summary. Again, thank you all very

1 much.

2 - - -

3 PROCEEDINGS CONCLUDED AT 7:50 P.M.

4 - - -

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

C E R T I F I C A T E

I, LISA CONLEY, RMR-CRR, the undersigned, a notary public-court reporter, do hereby certify that at the time and place stated herein, I recorded in stenotypy and thereafter had transcribed with computer-aided transcription the within (5), five pages, and that the foregoing transcript of proceedings is a complete and accurate report of my said stenotypy notes.

Lisa Conley

MY COMMISSION EXPIRES: LISA CONLEY, RMR, CRR, CCP
JULY 28, 2009 NOTARY PUBLIC-STATE OF OHIO

5802

From: Robert Vogel [redacted]
Sent: Wednesday, December 29, 2004 4:07 PM
To: gary.stegner@ohio.doe.gov
Subject: Comment re ESD for OU4

The need for offsite interim storage of Operable Unit 4 material is unfortunate since a great deal of effort has been expended to establish that following treatment K-65 material will meet an acceptable leach rate for lead. The effort to examine and enhance treatment of the material was lengthy and from the amount of data alone indicated DOE's commitment to meet TCLP goals for the treated material. After having been involved in this effort well more than a decade, I am very familiar with the data both before and following treatment. As a result I have previously raised the issue on several occasions of the difference between TCLP data from the most recent treatability testing as opposed to previous testing. The difference being primarily that the treated material appears to have come from the 1989 sampling event, resulting in much lower pretreatment TCLP data and extremely low TCLP data following treatment. Neither of these conditions occurred in previous testing. The point here is that of all the very good data which was developed to support meeting the regulatory requirements for K-65 material (irregardless of 11e. (2) status) the most recent data is weakest in terms of credibility. And credibility of data may be the deciding issue for where the material ultimately resides following interim storage.

I also realize that the issue of final disposition is not purely technical and that political forces will drive many decisions. But the fact remains that at the core of all of these decisions is the ability to believe in the data. This is essential for the disposition of K-65 material and for other wastes which ultimately must be stored somewhere.

The solution is actually much easier than it was even two or three years ago. This is the result of a great deal of K-65 material being removed from the silo. A few samples of this material of unquestionable origin could be tested using the most recent formulation. TCLP data from these tests would have a great deal of credibility in establishing the benefits of the treatment process and acceptability for permanent offsite disposition.

Robert Vogel

5802

Oxendine, Janis

From: Johnson, Kim
Sent: Thursday, January 06, 2005 3:34 PM
To: Alkema, Ken; Beckman, Stephen; Carr, Dennis; Sizemore, Dennis; Oxendine, Janis; Rayer, Diana
Subject: FW: FINAL EXPLANATION OF SIGNIFICANT DIFFERENCES FOR OU4

For your files.

Kim Johnson
x 3155

DOE-0114-05
1-6-05 Taylor to E...

43