

**STATE OF NEW MEXICO  
ENVIRONMENT DEPARTMENT**

**IN THE MATTER OF  
U.S. DEPARTMENT OF ENERGY  
AND SANDIA CORPORATION  
ALBUQUERQUE, NEW MEXICO**

**COMPLIANCE ORDER  
NMHWA**

*Oct 4 '95*

**RESPONDENTS.**

**FEDERAL FACILITY COMPLIANCE ORDER  
(SANDIA NATIONAL LABORATORIES/NEW MEXICO)**

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RESPONDENTS.

FEDERAL FACILITY COMPLIANCE ORDER  
(SANDIA NATIONAL LABORATORIES/NEW MEXICO)

This Order is issued by the New Mexico Environment Department (NMED) to require compliance by the United States Department of Energy (DOE) and Sandia Corporation (Sandia) with a Site Treatment Plan for the treatment of mixed waste at the Sandia National Laboratories/New Mexico (SNL/NM) facility pursuant to the New Mexico Hazardous Waste Act (HWA), NMSA 1978, §§ 74-4-1 et seq. (Repl. Pamp. 1993) and Section 3021(b) of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. § 6939(c), as amended by the Federal Facility Compliance Act of 1992, Pub. L. 102-386, 106 Stat. 1505 (1992) (FFC Act).

I. BACKGROUND/HISTORY

A. NMED is the agency within the executive branch of the New Mexico state government charged with administration and enforcement of the New Mexico Hazardous Waste Act, NMSA 1978, §§ 74-4-1 et seq.

B. Respondents are the DOE and Sandia. DOE is an agency of the federal government and the owner and a co-operator of SNL/NM. Sandia, a wholly-owned subsidiary of Lockheed Martin

Corporation, manages and co-operates SNL/NM pursuant to a management and operating contract with DOE.

C. SNL/NM is principally located on Kirtland Air Force Base on the Southside of Albuquerque, New Mexico.

D. SNL/NM is an "existing hazardous waste management facility" as those words are defined in 20 NMAC 4.1.801. SNL/NM was established in 1945 to conduct research and development of nuclear weapons for the United States military. The mission of SNL/NM has since expanded to include environmental and alternative energy research. In association with these activities, Respondents currently generate and store mixed waste as that term is defined in Section IV.L (Definitions).

E. On October 6, 1992, Congress passed the FFC Act. The FFC Act requires DOE, for each facility at which it generates or stores mixed waste, to submit a Site Treatment Plan (STP) for developing treatment capacities and technologies to treat all the facility's mixed waste, regardless of the time it was generated, to the standards required for waste subject to the land disposal prohibition set forth in Section 3004(m) of RCRA.

F. On December 30, 1992, EPA Region 6 issued a Notice of Noncompliance against DOE alleging violations of the land disposal storage prohibitions under RCRA and HSWA. DOE and EPA did not enter into a Federal Facility Compliance Agreement to resolve the violations of storage prohibitions alleged in the Notice of Noncompliance.

G. The STP required by the FFC Act must be submitted to the appropriate State regulatory officials in the State where the facility is located, provided the State has (1) authority under State law to prohibit land disposal of mixed waste until the waste has been treated, (2) authority under State law to regulate the hazardous components of mixed waste, and (3) authorization from EPA to regulate the hazardous components of mixed waste. The State of New Mexico meets these criteria. Accordingly, on March 31, 1995, DOE submitted its proposed STP to the Secretary of NMED for review, public comment, and approval by NMED. The proposed STP was submitted pursuant to the FFC Act to address violations of the land disposal restrictions under RCRA and the HWA.

H. On April 17, 1995, the public was given notice of and an opportunity to comment to NMED on the draft STP submitted by DOE on March 31, 1995 as required under the FFC Act. NMED provided public notice of the availability of the STP and an opportunity to comment by placing the notice in numerous newspapers throughout the State, including the Albuquerque Journal, a newspaper of statewide circulation. The notice provided a period of ninety (90) days for the submission of public comments. During the period for public comment, NMED placed the draft STP at several locations throughout the State which assured that the Plan was reasonably available to members of the public. NMED considered all public comments which were

submitted within the comment period and determined whether such comments warranted any changes to the draft STP.

I. On August 17, 1995, NMED gave the public notice of an opportunity to comment to NMED on the STP as it was proposed to be approved by NMED with modifications. NMED provided public notice of the availability of the STP and an opportunity to comment by placing the notice in numerous newspapers throughout the State, including the Albuquerque Journal. The notice provided for a period of thirty (30) days to comment. During the period of public comment, the STP was placed at several locations throughout the State to assure that the Plan was reasonably available to members of the public.

J. NMED approved the STP with modifications on October 4, 1995. The approved STP is incorporated by reference and attached hereto as Exhibit A to this Order.

## II. PARTIES BOUND

This Order shall apply to and be binding upon Respondents and their respective successors in interest and assigns. The obligations of Respondents under this Order shall be joint and several. Respondents shall notify their agents, employees, current operating and other contractors at SNL/NM, and all subsequent operating and other contractors at SNL/NM of the existence of this Order, and Respondents shall direct them to comply fully with the requirements of this Order in all contracts and subcontracts entered into to carry out the requirements of

this Order. No change in the contractual relationship between DOE and Sandia shall in any way alter DOE's responsibilities under this Order. DOE shall notify NMED if the present management and operating contract with Sandia is terminated and a new contract is awarded. On the date when the successor contractor assumes responsibility for the management and operation of SNL/NM, the successor contractor shall be substituted for Sandia as a Respondent to this Order.

### III. JURISDICTION AND AUTHORITY

A. This Order is issued pursuant to Section 74-4-1 *et seq.* of the HWA, the New Mexico Hazardous Waste Management Regulations (20 NMAC 4.1), and Section 3021(b) of RCRA, as amended by the FFC Act. Section 3021(b) of RCRA, as amended by the FFC Act, along with Executive Order 12088, requires each department, agency and instrumentality of the federal government engaged in the disposal or management of hazardous waste to comply with all federal and state requirements respecting the control and abatement of hazardous waste disposal and management.

B. NMED is an agency of the State of New Mexico which has (1) authority under State law to prohibit land disposal of mixed waste until the waste has been treated, (2) authority under State law to regulate the hazardous components of mixed waste, and (3) authorization from EPA under Section 3006 of RCRA to regulate the hazardous components of mixed waste, as such authorities are described in Section 3021(b) of RCRA, as amended by the FFC Act.

C. DOE is a department of the executive branch of the federal government which generates, transports, and manages hazardous waste, including mixed waste, at SNL/NM and is therefore subject to and must comply with all applicable federal and state requirements respecting hazardous and mixed waste, including the HWA and 20 NMAC 4.1.

D. This Order fulfills the requirements contained in Section 3021(b)(5) of RCRA, as amended by the FFC Act, and stands in lieu of any other agreements, orders or interpretations of the requirement for DOE to develop and submit a plan for the development of treatment capacities and technologies to treat all of SNL/NM's mixed waste to the standards promulgated pursuant to Section 3004(m) of RCRA.

#### IV. DEFINITIONS

Except as provided below or otherwise explicitly stated herein, the terms used in this Order shall have the same meaning as used in the HWA, 20 NMAC 4.1, RCRA, and EPA's regulations at 40 CFR Parts 124, 260 through 268, and 270.

A. "Atomic Energy Act" or "AEA" means the Atomic Energy Act of 1954, as amended, 42 U.S.C. § 2011 et seq.

B. "Compliance Date" means a fixed, firm, and enforceable date on or before which a task must be completed in accordance with the provisions of the STP.

C. "Days" means calendar days, unless otherwise specified. Any notice, deliverable, or other requirement that under the



terms of this Order would be due on a Saturday, Sunday or a state or federal holiday shall be due the first business day following the Saturday, Sunday, or state or federal holiday.

D. "DOE" means the United States Department of Energy or any successor agencies, and its employees or authorized representatives.

E. "EPA" means the United States Environmental Protection Agency or any successor agencies, and its employees or authorized representatives.

F. "FFC Act" means the Federal Facility Compliance Act of 1992, Pub. L. 102-386, 106 Stat. 1505 (1992).

G. "Fiscal Year" means the federal fiscal year, which begins on October 1 of one calendar year and extends through September 30 of the following calendar year.

H. "Hazardous Waste" means hazardous waste as defined at Section 74-4-3.I. of the HWA and the New Mexico Hazardous Waste Management Regulations (20 NMAC 4.1) as they may be amended, which incorporates, by reference, federal regulations at 40 CFR Parts 260 and 261.

I. "HWA" means the New Mexico Hazardous Waste Act, NMSA 1978, §74-4-1 et seq. (Repl. Pamp. 1993)

J. "SNL/NM" means the Sandia National Laboratories/New Mexico, including its facilities and installations within the boundaries of Kirtland Air Force Base, Albuquerque, New Mexico.

K. "Land Disposal Restrictions" or "LDR" means the land disposal restrictions set forth in the HWA and 20 NMAC 4.1, which incorporates by reference 40 CFR Part 268.

L. "Mixed Waste" means waste that contains both a hazardous waste and source, special nuclear, or byproduct material regulated under the federal Atomic Energy Act of 1954.

M. "NMED" means the New Mexico Environment Department or any successor agencies, and its employees or authorized representatives.

N. "Order" means this document and all Attachments to this document referred to herein, including the STP in two volumes.

O. "Parties" means NMED, DOE and Sandia.

P. "RCRA" means the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act, 42 U.S.C. § 6901 et. seq.

Q. "Secretary" means the Secretary of NMED or the Secretary's designee.

R. "Sandia" means Sandia Corporation, a wholly-owned subsidiary of Lockheed Martin, or any successors or assigns, and its employees or authorized representatives.

#### V. COVERED MATTERS

This Order addresses LDR requirements pertaining to storage and treatment of covered waste at SNL/NM regardless of the time of generation and accumulation.

A. Covered Waste. Covered waste is all mixed waste at SNL/NM, regardless of time generated, which is being stored in violation of the land disposal requirements of Section 3004(j) of RCRA, including mixed waste that is newly discovered, identified, generated, or received from off-site; mixed waste that is generated through environmental restoration and decontamination and decommissioning activities; and legacy material that has been evaluated and determined to be mixed waste.

B. Other Matters Covered in this Order. Respondents anticipate that as they characterize, sort and survey mixed waste currently in storage at SNL/NM, they will determine that certain waste previously identified as mixed waste is actually hazardous waste without a radioactive component or radioactive waste without a hazardous component. In those cases where the waste is determined to be a radioactive waste without a hazardous component, Respondents shall provide to NMED all information required for deleted waste under Section IX. C (Deletion of Waste). Upon approval by NMED, such waste shall no longer be subject to the terms of this Order. In those cases where the waste is determined to be a hazardous waste without a radioactive component which is subject to LDR treatment standards, NMED will consider such waste as a covered waste for a period of ninety (90) days upon approval by NMED of Respondents' written determination that the waste is a hazardous waste which is not a mixed waste. NMED will consider such waste as a covered waste only if they receive Respondents' written determination within

fourteen (14) days after Respondents first identify hazardous waste without a radioactive component. Respondents' written determination shall include all the information required for deleted waste under Section IX.C (Deletion of Waste).

#### **VI. SITE TREATMENT PLAN**

The STP contains two volumes and is intended to bring SNL/NM into compliance with LDR storage prohibitions under the HWA and RCRA. The Compliance Plan Volume of the STP provides overall schedules for achieving compliance with LDR storage and treatment requirements for mixed waste at SNL/NM based on compliance dates as defined in Section IV (Definitions). The Compliance Plan includes a schedule for the submittal of applications for permits, construction of treatment facilities, technology development, off-site transportation for treatment, and the treatment of mixed wastes in full compliance with the HWA and 20 NMAC 4.1, which incorporates by reference 40 CFR Parts 260 through 270. The Background Volume of the STP contains information described below in Section VII (Annual Site Treatment Plan Updates). Respondents shall carry out all activities in accordance with the schedules and requirements set forth in the Compliance Plan Volume of the STP and this Order.

#### **VII. ANNUAL SITE TREATMENT PLAN UPDATES**

A. Respondents shall submit an update of the STP for NMED's review and comment on or before March 31, 1996, and

annually thereafter no later than March 31 of each year. Each Annual Update shall bring the STP current to the end of the previous federal fiscal year and, upon approval, shall be incorporated into this Order. The Annual Update shall provide a summary of the current status of DOE's progress in implementing the STP, including proposed revisions, technology development, funding and other concerns that may affect the implementation of the STP.

B. The Annual Update to the STP shall be divided into two volumes: an update to the Background Volume and an update to the Compliance Plan Volume.

*Background Volume.* The update to the Background Volume shall provide the following information:

1. the amount of each covered waste stored at SNL/NM as follows: (1) the estimated volume in storage at the end of the previous fiscal year; and (2) the estimated volume anticipated to be placed in storage in the next five fiscal years.
2. a progress report from the end of the previous federal fiscal year describing treatment progress and treatment technology development for each treatment facility and activity scheduled in the STP. If applicable, Respondents will also describe current or anticipated alternative treatment technology that is being evaluated for use instead of treatment technologies or capacities identified in the STP. This description

will include potential alternative commercial treatment and off-site DOE treatment capacity or technology development.

3. a description of DOE's funding for STP-related activities and any funding issues that may affect the schedule.
4. the status of the "No-Migration Variance Petition" or any treatability variance(s).
5. a progress report on characterization and/or treatment capabilities or plans for mixed transuranic waste related to the waste treatment standards, if any, at the WIPP facility.

*Compliance Plan Volume.* The update to the Compliance Plan Volume shall contain changes and revisions to the Compliance Plan Volume occurring since the previous Annual Update; proposed revisions and amendments, including compliance date changes; a description of waste deleted in accordance with the requirements in Section IX (Deletion of Waste); documentation of new covered waste in accordance with the requirements in Section VIII (Addition of New Covered Waste); and any other changes to the overall schedule in the Compliance Plan Volume of the STP. The Annual Update to the Compliance Plan Volume shall identify changes which require NMED approval as a revision under Section X (Revisions) or an amendment under Section XI (Other Amendments to the STP).

C. NMED approval of revisions and other amendments proposed by Respondents shall be in accordance with the procedures set forth below in Section X (Revisions) and Section XI (Other Amendments to the STP).

D. The Annual Update will be publicly available during regular business hours at the following locations: NMED Library, 1190 St. Francis Drive, Santa Fe, N. M. 87502 and the public reading room for the SNL/NM STP at the National Atomic Museum, Building 20358, Wyoming Blvd., Kirtland Air Force Base, New Mexico 87185, phone (505) 845-4378.

#### VIII. ADDITION OF NEW COVERED WASTE

A. All waste which Respondents request to be included in the Compliance Plan Volume of the STP as a covered waste under this Order shall be proposed for NMED's approval as a revision pursuant to the procedures in Section X (Revisions).

B. Respondents' request shall include, in addition to the required information for revisions pursuant to Section X (Revisions), the following information: a description of the applicable waste code, waste form, volumes, technology and capacity needs, and schedules for treatment or developing treatment technology for such covered waste consistent with the relevant provisions of this Order. If Respondents cannot provide the information or schedules required by this Section because of inadequate characterization or it is otherwise impracticable to do so, Respondents' request shall include appropriate

justification, including the characterization methodology used, supporting information, and proposed plans for developing such information and schedules. In no event shall the provision of such information or schedules be postponed for two consecutive annual updates.

#### **IX. DELETION OF WASTE**

A. With the exception of hazardous waste or radioactive waste addressed under this Order pursuant to Section V.B. (Covered Matters), all waste which Respondents request to be deleted from the Compliance Plan Volume of the STP as a covered waste under this Order shall be proposed for NMED's approval as a revision pursuant to the procedures in Section X (Revisions).

B. Mixed waste may be deleted as a covered waste under this Order when:

1. documentation is provided to NMED that the waste has been received at an off-site facility for treatment, disposal, or storage pending treatment or disposal;

2. it is determined by NMED to no longer be subject to LDR under the HWA or 20 NMAC 4.1; or

3. changes to applicable statutes or state regulations cause a mixed waste or waste category to be no longer subject to the LDR requirements of the HWA.

C. Respondents' request shall include, in addition to the required information for revisions pursuant to Section X, the following information: a description of the applicable waste



code, waste form and volumes; if applicable, characterization methodology used along with supporting information; and other relevant information regarding deleted waste, including schedules for the treatment of hazardous waste, subject to LDR treatment standards, which was previously identified as mixed waste covered by this Order.

#### X. REVISIONS

A. A revision is an amendment to the Compliance Plan Volume of the STP that is either required by NMED, or proposed by Respondents and approved by NMED, after public comment in accordance with Section 3021(b)(4) of RCRA as amended by the FFC Act. NMED shall approve, approve with modifications, or disapprove all revisions in accordance with this Section and the requirements of Section 3021(b)(4) of RCRA, as amended by the FFC Act. Revisions may be proposed to NMED in the Annual Site Treatment Plan Update or at such other times which Respondents deem necessary.

B. A revision is:

1. The addition of a treatment facility at SNL/NM or treatment technology development not previously identified in the STP;
2. Any change to a compliance date of more than ninety (90) days;
3. Any addition or deletion of a treatability group in the STP;

4. an increase in volume in a treatability group in the STP; or

5. Any other amendment to the Compliance Plan Volume of the STP which NMED determines is of such significance as to warrant public comment.

C. Revisions shall be made as follows:

1. When NMED requires a revision, it will provide Respondents with a written description of the revision and rationale for the revision.

2. When Respondents propose a revision, they shall provide NMED a written proposal which includes:

a. A detailed description of the proposed revision;

b. The rationale for the proposed revision;

c. The anticipated length of any delay in performance that would result from the proposed revision, including all compliance dates that would be affected; and

d. If the proposed revision would result in a delay in performance, a plan for implementing all reasonable measures to address the cause of the delay, to avoid or minimize the delay, and to avoid such delays in the future, and a schedule for implementing such plan.

3. All proposed or required revisions shall be available for public review and comment. NMED will publish a Notice of Availability in a newspaper of statewide circulation and at least one newspaper serving the area in and around Los

Alamos, New Mexico within thirty (30) days after a revision is required by NMED or proposed by Respondents. NMED's written description of a required revision, or Respondent's written proposal for a proposed revision, shall be made available to the public for review at appropriate locations. NMED will accept public comment on the revisions for at least thirty (30) days.

4. NMED will provide the Respondents with advance written notice of a determination to approve with modification or disapprove a proposed revision. Such notice will include the rationale for the modification or disapproval. Within thirty (30) days after receipt of the notice, the Respondents may respond in writing to the notice and shall have the opportunity to discuss the determination with NMED. This time period may be extended or shortened by mutual agreement of the Parties.

5. NMED will make every reasonable effort to issue its decision on a revision expeditiously, and will issue such decision within six months from the date NMED provides the Respondents with a written description of a required revision or six months from the date NMED receives a written proposed revision from the Respondents. This time period may be extended by mutual agreement of the Parties.

D. In making a determination on a revision, NMED will make every reasonable effort to consult with EPA and any other State in which a facility affected by the revision is located.

E. In making a determination on a revision, NMED will consider the following factors: the need for regional treatment

facilities; funding availability; new or emerging technologies; new technical information that may affect waste treatment options; site priorities identified through consultation among DOE, regulatory agencies and other stakeholders; and any other factors which are relevant.

#### XI. OTHER AMENDMENTS TO THE STP

A. Amendments to the STP that are not revisions may be required by NMED, or may be proposed by Respondents and approved, approved with modifications, or disapproved by NMED in accordance with this Section.

B. Amendments other than revisions shall be made as follows:

1. When NMED requires an amendment, it will provide the Respondents with a written description of the amendment and the rationale for the amendment.

2. When the Respondents propose an amendment, they shall provide NMED with a written proposal which includes:

- a. A detailed description of the proposed amendment;

- b. The rationale for the proposed amendment;

- c. The anticipated length of any delay in performance that would result from the proposed amendment, including all compliance dates that would be affected; and

- d. If the proposed amendment would result in a delay in performance, a plan for implementing all reasonable

measures to address the cause of the delay, to avoid and minimize the delay, and to avoid such delays in the future, and a schedule for implementing such plan.

3. NMED will provide the Respondents with advance written notice of a determination to approve with modification or disapprove a proposed amendment. Such notice will include the rationale for the modification or disapproval. Within thirty (30) days after receipt of the notice, the Respondents may respond in writing to the notice and shall have the opportunity to discuss the determination with NMED. This time period may be extended or shortened by mutual agreement of the Parties.

4. NMED will make every reasonable effort to issue its decision on an amendment expeditiously, and will issue such decision within ninety (90) days from the date NMED provides the Respondents with a written description of a required amendment or ninety (90) days from the date NMED receives a written proposed amendment from Respondents. This time period may be extended by mutual agreement of the Parties.

C. In making a determination on an amendment, NMED will consider the following factors: the need for regional treatment facilities; funding availability; new or emerging technologies; new technical information that may affect waste treatment options; site priorities identified through consultation among DOE, regulatory agencies and other stakeholders; and any other factors which are relevant.

## XII. AMENDMENTS TO THE ORDER

Except for the STP, this Order may be amended by agreement of the Parties. An amendment shall be in writing and signed by the Parties and shall not become effective until approved in writing by the Secretary.

## XIII. FORCE MAJEURE

A. If Respondents are unable to comply with any requirement of this Order due to circumstances beyond their control, as defined herein, they may make a claim of *force majeure*. A *force majeure* is any event arising from a cause not foreseeable and beyond the control of the Respondents that could not be avoided or overcome by due diligence and that delays or prevents performance of an obligation required by this Order. A *force majeure* shall include a delay in NMED's review of a permit application or issuance of a permit or permit modification required to meet a compliance date or other obligation specified in the STP, provided, that the delay otherwise meets the definition of "*force majeure*."

### B. Procedure.

1. To assert a claim of *force majeure*, the Respondents shall provide oral notification to NMED as soon as practicable after the event which Respondents knew or should have known constitutes *force majeure*, and shall provide written notice within seven (7) days after the event.

2. Written notice shall contain the following:

A. A detailed description of the *force majeure* event;

B. The anticipated length of delay in performance that would result from the *force majeure*, including all compliance dates or other obligations that would be affected; and

C. A plan for implementing all reasonable measures to address the cause of the delay, to avoid and minimize the delay, and to avoid such delays in the future, and a schedule for implementing such plan.

3. Respondents' failure to provide written notice in a timely manner shall preclude the Respondents from asserting any claim of *force majeure*. Respondents' failure to identify in the written notice all compliance dates or other obligations affected by the *force majeure* event shall preclude the Respondents from asserting any claim of *force majeure* as to all compliance dates or other obligations not so identified.

4. Within fourteen (14) days of receipt of a written notice of a claim for *force majeure*, NMED will provide to Respondents a written decision approving, approving in part, or denying the claim. If NMED approves in part or denies the claim, it will explain in such written decision its reasons for the partial approval or denial.

5. Within fourteen (14) days of receipt of the NMED's written decision to approve in part or deny a *force majeure*

claim, the Respondents may invoke the dispute resolution procedures of Section XVII (Dispute Resolution). Respondents' failure to invoke the dispute resolution procedures within this time period shall be deemed to be an acceptance by the Respondents of NMED's decision.

6. If NMED approves or approves in part a claim of *force majeure*, the STP shall be revised or amended accordingly pursuant to the applicable provisions of Section X (Revisions) or Section XI (Other Amendments to the STP).

#### XIV. FUNDING

A. It is the expectation of the Parties that all obligations and commitments established by this Order will be fully funded by DOE. DOE shall take all necessary steps and use its best efforts to obtain timely and sufficient funding to meet its obligations and commitments under this Order, including but not limited to the submission of timely budget requests.

B. DOE shall provide NMED an opportunity to participate in formulating the SNL/NM Environmental Management budget and setting the SNL/NM Environmental Management budget priorities as outlined in the addendum to the STP, "Compliance Date Approach and Environmental Management Budget Formulation Process."

C. Respondents understand that if, at any time, adequate funds or appropriations are not available to comply with this Order and the STP, they shall notify NMED in writing within thirty (30) days of learning that funds are not available and



Respondents may request a revision or other amendment, as applicable, of any affected compliance dates pursuant to Section X (Revisions) or Section XI (Other Amendments to the STP).

D. Failure to obtain adequate funds or appropriations from Congress does not in any way relieve Respondents from their obligation to comply with the FFC Act or this Order. If adequate funds or appropriations are not available to fulfill Respondents' obligations under this Order, NMED may exercise any or all of its applicable statutory and regulatory authority.

#### XV. MIXED TRANSURANIC WASTE

A. DOE intends to dispose of mixed transuranic waste (MTRU) from SNL/NM at the Waste Isolation Pilot Plant (WIPP) located near Carlsbad, New Mexico. WIPP is currently scheduled to open for receipt of waste in June of 1998. DOE intends to file a "No-Migration Variance Petition" with EPA pursuant to Section 3004(d), (e) and (g) of RCRA, 42 U.S.C. § 6924(d), (e) and (g), and 40 C.F.R. § 268.6, seeking to demonstrate that there will be no migration of hazardous constituents from the WIPP disposal units for so long as the waste remains hazardous, and seeking a variance from the treatment standards for land disposal of MTRU waste that DOE intends to dispose at WIPP. As of the date of this Order, however, it is impossible to determine whether WIPP is a practicable disposal option for at least the following reasons: (1) it is not known whether WIPP will open or, if it does, when it will open; (2) it is not known whether

EPA will grant DOE's "No-Migration Variance Petition"; and (3) it is not known whether a variance from the treatment standards for MTRU waste will be approved by EPA and NMED.

B. Accordingly, Respondents shall develop treatment technologies and treat MTRU waste at SNL/NM according to the schedule set forth in the STP. Such schedule is not based on the assumption that WIPP will be a disposal option or that DOE will receive a variance from treatment standards for land disposal of MTRU waste to be disposed at WIPP.

C. In the event that WIPP opens for receipt of waste, EPA grants the "No-Migration Variance Petition," and EPA and NMED approve any proposed variance from treatment standards for MTRU waste, DOE shall immediately notify the NMED Project Manager in writing. DOE shall thereafter request approval from NMED for treatment of MTRU waste to be disposed at WIPP in accordance with Section X (Revisions) of this Order.

D. Compliance with any treatment standards approved by EPA in granting the "No-Migration Variance Petition" shall not constitute compliance with the FFC Act unless and until approved by NMED pursuant to the FFC Act, HWA and this Order.

E. This Order does not in any way resolve any issue related to engineered barriers, waste form modifications, or any other waste treatment that may be required or adopted pursuant to the radioactive waste disposal regulations at 40 C.F.R. Part 191, or pursuant to the Waste Isolation Pilot Plant Land Withdrawal Act of 1992, Pub. L. 102-579 (1992).

## XVI. PROJECT MANAGERS

Within ten (10) days of the effective date of this Order, the Parties shall each designate a Project Manager. Each Party shall notify the other in writing of the Project Manager it has selected and that Project Manager's address. Each Project Manager shall be responsible for overseeing the implementation of this Order. Either Party may change its designated Project Manager by notifying the other Party, in writing, ten (10) days before the change, to the extent possible. To the extent possible, communications between the Parties concerning the terms and conditions of this Order shall be directed through the Project Managers at the address listed below:

### NMED Project Manager:

Benito Garcia, Bureau Chief  
Hazardous & Radioactive  
Materials Bureau  
New Mexico Environment Department  
P.O. Box 26110  
Santa Fe, NM 87502  
(505) 827-1558

### DOE Project Manager:

Mr. Ted Pietrok  
Waste Management Program  
U.S. Department of Energy  
Kirtland Area Office  
Albuquerque, NM 87115  
(505) 845-5649

### The Sandia Project Manager:

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## XVII. RESOLUTION OF DISPUTES

A. General. Except as otherwise specifically provided in this Order, any dispute arising out of this Order shall first be

subject to this Section and this Section shall be followed and exhausted before pursuing any other legal remedy in any other forum. The failure of Respondents to enter into dispute resolution within the time period specified in this Section shall constitute a waiver of Respondents' right to invoke dispute resolution. Exchange of documents under this Section shall be in accordance with Section XIX (Exchange of Documents). For purposes of this Section only, the term "days" shall mean work days.

B. Invoking dispute resolution. To initiate dispute resolution, the disputing party shall submit to the other Project Manager(s) a written Statement of Position within fourteen (14) days after the event which the disputing party knew or should have known would be disputed. The Statement of Position shall set forth the nature of the dispute, the work affected by the dispute, including specific compliance dates, and any factual data, analysis, opinion, or documentation supporting the disputing party's position.

C. Informal resolution. Any dispute subject to this Section shall in the first instance be the subject of informal negotiation between the Project Managers and/or their immediate supervisors. The period for informal negotiation shall not exceed twenty (20) days from the time the disputing party notifies the other parties in writing that it wishes to commence informal dispute resolution. The Parties shall meet and confer as necessary to attempt to resolve the dispute within the twenty

(20)-day informal resolution period. The Parties may agree in writing to extend or reduce this time period, but in no event shall the time period exceed sixty (60) days.

D. Formal Resolution by Advisory Group. In the event informal resolution cannot be reached, the disputing party shall, within fifteen (15) days after such informal dispute resolution period, submit to the Advisory Group copies of all documents furnished to the Project Managers for informal resolution. The Advisory Group shall consist of the Kirtland Area Office Assistant Area Manager for Environmental Programs for DOE, the Advisory Group - SNL/NM Representative, the Director, Environmental Operations Center (Organization 7500) for Sandia and the NMED Director for the Water and Waste Management Division. After receipt of this documentation, the Advisory Group shall have fifteen (15) days to resolve the dispute.

E. Final Decision by the Secretary. In the event the Advisory Group has been unable to resolve the dispute within the time prescribed, the disputing party shall submit a written Request for Final Decision to the Secretary. The written request shall be accompanied by all documentation furnished to the Project Managers and Advisory Groups. Within thirty (30) days of receipt of the written Request for Final Decision, the Secretary will issue a final decision, including a written statement of the reasons for the decision. The Secretary's decision shall constitute a final agency action.

F. Extension of Time for Formal Dispute Resolution. If, during the formal dispute resolution process, it appears that resolution may be achieved by an extension of time, the Advisory Group may petition the Secretary for an extension of time in which to resolve the dispute.

G. Consultation with the Governor of New Mexico and with Other Affected States. The requirements of this Order have the potential to affect national interests and the interests of other States and, in some instances, it may be necessary for Respondents to consult with the Governor of New Mexico and for the Parties to consult with officials of other affected States in order to resolve issues under this Section in an equitable manner. Such consultations shall occur as agreed upon by the Parties consistent with the needs of the particular situation.

H. Effect of Dispute Resolution on Respondents' Obligations. Respondents' obligations under this Order are not waived by the invocation of this dispute resolution process. However, the time period for completion of any work directly affected by a dispute shall be extended for at least a period of time equal to the actual time taken to resolve it through informal or formal dispute resolution, provided that NMED determines that the resulting delay in performance will not cause an undue risk to human health or the environment. All requirements of this Order not directly affected by the dispute shall continue and be completed in accordance with the terms of this Order.

I. Incorporation by Amendment. Any mutually agreed upon resolution shall be issued in writing, and signed by all Parties. Such writing shall operate as an amendment to this Order pursuant to Section XII (Amendments to the Order) and, as applicable, a revision under Section X or other amendment to the STP under Section XI.

#### XVIII. SITE ACCESS

Respondents shall at all reasonable times afford NMED, its contractors, designees, and agents access to SNL/NM, with or without prior notice, for the purpose of verifying compliance by Respondents with this Order. Respondents shall provide an authorized representative to accompany NMED's employees or contractors while at SNL/NM. NMED shall be permitted to enter SNL/NM to review the progress of Respondents and their contractors in carrying out the activities under this Order including, but not limited to, the following: conduct tests and sampling which NMED deems necessary; verify data submitted to NMED by Respondents; and conduct interviews, as necessary, with Respondents' personnel. NMED, its contractors, designees, and agents shall abide by DOE and SNL/NM site-specific safety and security requirements and procedures for access to and while at SNL/NM. Nothing in this Order shall preclude NMED from exercising any authority to gain access to SNL/NM or to obtain or gather data and information at SNL/NM otherwise provided for by law.

## **XIX. EXCHANGE OF DOCUMENTS**

Whenever the terms of this Order require exchanges of documents, such exchanges shall be made by mail, by facsimile if followed within twenty-four (24) hours by a mailed copy, or by hand delivery to the Project Managers at the address listed above in Section XVI (Project Managers), unless those individuals or their successors give notice in writing to the Parties of a change in designated recipient or address. Exchanges of documents required under this Order shall be complete upon mailing or upon hand delivery to the Project Managers.

## **XX. DOCUMENTS, INFORMATION, AND REPORTING REQUIREMENTS**

A. **Exchange of Information.** Respondents shall cooperate fully in providing information concerning the status and progress of the activities covered by this Order as requested by NMED. No communications of this type shall alter or waive any obligations of Respondents under this Order, and no guidance, suggestions, or comments by NMED shall be construed as relieving Respondents of their obligation to obtain formal approval where such approval is required by this Order and to comply with the terms of this Order. Respondents are encouraged to confer with NMED at any time prior to the submission of any proposals, plans, studies, reports, updates, or notifications required by this Order.

B. **Records Inspection and Copying.** Respondents shall permit NMED, its contractors, designees and agents to inspect and copy all records, files, photographs, documents, and other



writings, including all sampling and analytical data, in any way pertaining to the activities required by this Order, with the exception of privileged material, and subject to the limitations of the AEA concerning the handling of unclassified controlled nuclear information, restricted data, and national security information. If Respondents assert a claim of privilege over any material, they shall identify the specific record, file, photograph, document, or writing, or portion thereof, over which the claim of privilege is asserted, and shall describe the nature of the privilege with sufficient specificity for a court to rule on the propriety of the claim. Respondents shall not assert privilege over any sampling or analytical data.

C. Reporting Requirements.

1. Respondents shall as expeditiously as possible, but in no event more than ten (10) days after a compliance date, provide notice in writing to NMED of the completion of the activity required to be completed by that compliance date.

2. Respondents shall submit an Annual Update to the STP as required by the relevant provisions of the Compliance Plan Volume of the STP, in accordance with Section VII (Annual Site Treatment Plan Updates).

3. Respondents shall carry out all other reporting requirements through the designated Project Managers.

D. Certification Statement. Respondents shall provide a certification statement with the submission of any documentation required pursuant to the Order, including without limitation,

annual STP updates under Section VII, proposed revisions under Section X, proposed amendments to the STP under Section XI and the Certificate of Completion required to terminate this Order under Section XXIV (Termination). Each such certification statement shall be signed by a responsible official of DOE or Sandia. Each such certification statement shall aver that the document or other submission is "true, accurate, and complete." If personal verification by the responsible official is not possible, then the certification statement shall aver that another person, acting under the direct instructions and under the supervisory authority of the responsible official, verified that the document or other submission is "true, accurate, and complete."

#### XXI. RESERVATION OF RIGHTS/ENFORCEABILITY

A. Reservation of rights. Notwithstanding any other provision of the Order, NMED reserves the right to pursue civil or administrative relief or refer a criminal action for any violations of state or federal law, past or future, which are not the subject matter of this Order. NMED reserves the right to take emergency response action at property owned or controlled by Respondents in the event conditions pose an imminent and substantial endangerment to human health or the environment. NMED specifically retains the right to conduct other environmental studies, investigations, monitoring, or emergency activities at property owned or controlled by

Respondents, and to enforce all laws, statutes and regulations NMED is authorized to enforce. NMED's failure to exercise any power, authority, or rights in this Order shall not be construed as a waiver or relinquishment of such power, authority or right at other times or under other circumstances.

B. Enforcement. In the event Respondents fail to comply with the terms of this Order, including those that have not been resolved pursuant to the dispute resolution mechanism under Section XVII (Dispute Resolution), this Order shall be enforceable by NMED by the filing of a civil action either in the First Judicial District Court for Santa Fe County or in the United States District Court for the District of New Mexico.

#### XXII. CIVIL PENALTIES

If Respondents fail to comply with the obligations of this Order, NMED may assess a civil penalty as provided for pursuant to the HWA.

#### XXIII. CREATION OF DANGER

A. Notwithstanding any other provision of this Order, if NMED determines that any activity set forth in the STP, even though carried out in compliance with this Order, have caused or may cause a dangerous release of a hazardous pollutant, or may pose a threat to public health or the environment, NMED may direct Respondents to stop further implementation of this Order as it relates to the activities creating the danger for such

period of time as may be needed to abate any such release or threat or to undertake any action which NMED determines is necessary to abate such release or threat.

B. Following a stoppage of work pursuant to this Section, the Parties shall meet to discuss the resumption of activities and any amendments to this Agreement necessary as a result of the stoppage of work. NMED agrees that any compliance date dependent on activities which were stopped pursuant to an NMED directive shall be extended for a period equal to the period during which the work was stopped plus a reasonable amount of time to resume activities.

#### XXIV. TERMINATION

This Order shall terminate when Respondents attain full compliance with the storage prohibitions under 3004(j) of RCRA and the HWA for covered waste. When Respondents have attained such compliance, they shall submit for NMED's written approval of a Certification of Completion. NMED's approval of the Certification of Completion does not, in any manner, relieve Respondents from their obligation to comply with the requirements of the HWA and Section 3004 of RCRA, and further, does not constitute an independent determination by NMED of such compliance. This Order shall terminate upon NMED's written approval of the Certificate of Completion.

**XXV. COMPLIANCE WITH OTHER APPLICABLE LAW**

This Order shall not in any way relieve Respondents from their obligation to comply with any of the applicable provisions of the HWA or its implementing regulations, the RCRA or its implementing regulations, or any permit, closure or post-closure plan, hazardous waste management requirement, order or agreement issued or entered into thereunder. This Order shall not relieve Respondents from their obligation to comply with any other applicable federal, state, or local law, regulation, order, permit or any other agreement.

**XXVI. COVENANT NOT TO SUE**

Except as provided for in Section XXI (Reservation of Rights/Enforceability) and Section XXIII (Creation of Danger), as long as Respondents remain in compliance with the terms of this Order NMED will not initiate or pursue civil, criminal, or administrative relief of any kind in any forum for violations of the storage prohibition under Section 3004(j) of RCRA with respect to covered waste at SNL/NM which might otherwise be available under New Mexico or federal law, including without limitation, the right to seek and recover damages or penalties against Respondents or their contractors, successors, assigns, and employees for such violations. NMED expressly reserves the right to pursue civil or administrative relief, or refer a criminal action to the New Mexico Attorney General's Office, for

any other violations of New Mexico or federal law, past or future, which are not the subject of this Order.

XXVII. SEVERABILITY

The provisions of this Order are severable. If any provision of this Order is declared by a court of law to be invalid or unenforceable, all other provisions of this Order shall remain in full force and effect.

XXVIII. FINALITY OF ORDER

The Order shall become final unless Respondents file a written Request for Hearing with an Answer within thirty (30) calendar days of the service of this Order pursuant to the HWA. For the purposes of this Order, failure by the Respondents to file an Answer constitutes a waiver of Respondents right to a hearing under NMSA 1978, §74-4-10 (Repl. Pamp. 1993).

MARK E. WEIDLER, SECRETARY

4 Oct 1995  
DATE

By:

Ed Kelley  
ED KELLEY, Division Director  
Water and Waste Management  
Division

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing Federal Facility Compliance Order (Sandia National Laboratories/New Mexico) was sent by first-class mail on this 4<sup>th</sup> day of October, 1995, to the following attorneys of record:

Karen Griffith  
Albuquerque Operations Field  
P.O. Box 5400  
Albuquerque, NM 87185-5400

Tom Vandenberg  
Sandia Counsel  
Organization 0210  
P.O. Box 5800  
Albuquerque, NM 87185-0141

  
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SUSAN MCMICHAEL

## 6.0 FUTURE GENERATION OF MIXED WASTE

This chapter addresses wastes expected to be generated within the five year period beyond the MWIR (1993-1997), e.g., ER wastes and wastes resulting from decontamination and decommissioning (D&D) activities and from the evaluation and excessing of legacy materials.

Regarding these types of wastes, discussion of potential, projected, or estimated generation of mixed waste for which RCRA LDR treatment may be required, is provided below for general planning purposes.

Due to the uncertainty of how ER, D&D, and legacy material evaluation projects will be managed, their inclusion into the Compliance Plan Volume of this PSTP (and therefore the specification of how and when they will be treated) will not occur until a final cleanup decision or approved management process and implementation plan are in place. Final decisions will be made in compliance with applicable regulatory requirements and the procedures for adding waste streams, as described in the Order.

### 6.1 Environmental Restoration Waste

There are currently no compliance agreements in place that are applicable to the treatment of mixed waste at SNL/NM. The ER Program (which is being performed under a HSWA permit) will outline the corrective action or cleanup processes at specific sites at SNL/NM. The ER Program currently has no existing mixed waste in inventory. Any newly generated mixed waste that is covered under enforceable agreements with the NMED will be managed under those agreements. Mixed waste not covered under another enforceable agreement will be covered under the STP as a new waste stream. Waste that is determined to be covered waste under the STP will be managed by transferring regulation of such waste from the existing HSWA permit to the STP.

It is likely that the SNL/NM ER program will generate some mixed waste during corrective action activities such as RCRA closures, RCRA Facility Investigations, Corrective Measures Studies, and the implementation of selected corrective measures. The possible waste forms include soil and soil cuttings from drilling and excavation; excavated material such as discarded equipment, contaminated groundwater, decontamination liquid from the cleaning of drilling, and sampling equipment; and dry waste (e.g., PPE). Some of these wastes would fit into the presently identified treatability groups, but others, such as soils contaminated organic solvents, would not. New waste streams and treatability groups will be added to the STP according to the procedures described in the Order.

The latest updated projections of mixed waste generation from ER projects that were submitted to the MWIR for 1993 through 1997 are shown in Table 6-1. The wastewater matrix was estimated at 159 m<sup>3</sup> and would be expected to fit into Treatability Group 5, Aqueous Liquids (corrosives), and Treatability Group 14, Aqueous Liquids (with organic contaminants). Treatment for these groups is solidification (encapsulation) and evaporative oxidation, respectively. Heterogeneous Debris generation was estimated at 155 m<sup>3</sup> and would be divided between Organic Debris with TCLP metals and Organic Debris with organic solvents. Treatment for these groups is macroencapsulation and thermal desorption (extraction), respectively. Contaminated Soils generation was estimated at 89 m<sup>3</sup>. Treatment for soils has not been evaluated or selected, and will depend on the contaminants identified in the soil.



1 Table 6-1. Projection of Mixed Waste Production at SNL/NM for 1993-1997<sup>a</sup>

Treatability Group	Projected Generation 1993-1997
	Volume (m <sup>3</sup> )
TG1, Inorganic Debris (with an explosive component)	<1
TG2, Inorganic Debris (with a water reactive constituent)	<1
TG3, Reactive Metals	<1
TG4, Elemental Lead <sup>b</sup>	<1
TG5, Aqueous Liquids (Corrosives)	<1
TG6, Elemental Mercury <sup>c</sup>	<1
TG7, Organic Liquids I <sup>d</sup>	0
TG8, Organic Debris (with Organic Contaminants) <sup>e</sup>	1
TG9, Inorganic Debris <sup>f</sup> (with TCLP metals)	15
TG10, Heterogeneous Debris <sup>g</sup>	155
TG11, Organic Liquids II	<1
TG12, Organic Debris (with TCLP Metals)	<1
TG13, Oxidizers	<1
TG14, Aqueous Liquids (with Organic Contaminants) <sup>g</sup>	159
TG15, Soils <50% Debris <sup>g</sup>	89
--Suspect Mixed TRU <sup>h</sup>	0

<sup>a</sup> The quantities presented in this table are rough estimates only.

<sup>b</sup> The generation rate for lead solids may change significantly as the Lead Bank Program progresses.

<sup>c</sup> A small amount may be generated at SNL/CA and managed under this Plan.

<sup>d</sup> Because of the use of nonhazardous scintillation cocktails, it is assumed that no organic liquid mixed waste will be generated in the next five years.

<sup>e</sup> The generation rate of mixed waste organic debris may greatly decrease because of the reduction of hazardous solvents.

<sup>f</sup> It is assumed that the generation of mixed waste inorganic debris will remain comparable to the current rate.

<sup>g</sup> These projections are from the Environmental Restoration Program (ER).

<sup>h</sup> It is assumed that no TRU waste will be generated at SNL/NM in the next five years. New projects and the excessing of legacy materials may require a revision of this estimate.

TCLP = Toxicity Characteristic Leaching Procedure

TRU = Transuranic

NA = not available

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3 The DOE/AL Mixed Waste Treatment Plan (DOE, 1994a), discusses five soil substreams with five  
4 preferred treatment options. A summary of the five substreams and their preferred treatment  
5 options is listed in Table 6-2. Details of these preferred treatment options can be found in  
6 Attachment 1 to the DSTP.

7 It is expected that if SNL/NM's soils with < 50% debris would require treatment, a preferred  
8 option will be selected from Table 6-2.

Table 6-2. Preferred Treatment Options for Mixed Waste Soils

Soil Substreams	Preferred Treatment Option
Soil with Organics	Thermal Desorption
Soils with Organics and Metals	Thermal Desorption fb Stabilization
Soils with Mercury	Thermal Desorption fb Amalgamation
Soils with Lead	Physical Separation fb Stabilization; or Chelating fb Stabilization
Soils with barium and debris	Sulfate Precipitation fb Stabilization

## 6.2 Decontamination and Decommissioning Waste

The goal of the SNL decontamination and decommissioning (D&D) program is to assess and decommission surplus facilities and to decontaminate these facilities where necessary. SNL/NM has established a formal facility assessment, decontamination, and demolition (FADD) process to accomplish this goal.

The FADD process has been established at SNL/NM to ensure that the facilities intended for demolition are managed in a manner that protects human health and the environment. This process provides a mechanism that, upon transfer of these facilities to DOE's Office of Environmental Restoration (EM-40), ensures the requirements described in the "Decontamination and Decommissioning Guidance Document" (DOE, 1994c) will have been met. Thus it provides for the continued surveillance and maintenance of vacated facilities until their decontamination or demolition, and it ensures that these facilities are characterized with respect to radioactive, hazardous, and toxic material contamination. The FADD process also ensures that waste generated during D&D is managed and disposed of safely and in accordance with DOE, federal, state, local, and SNL/NM requirements.

Approximately 60 buildings at SNL/NM have been declared surplus facilities that are likely candidates for D&D. Currently the SNL/NM Engineering Reactor (SER) is the only facility to date with a formalized schedule for surveillance and maintenance (Activity Data Sheet #1292, used for DOE budgeting and planning). This facility is housed in a structure with two other active reactors and a hot cell facility. D&D of the SER will be planned when these other facilities are assumed as surplus and are also scheduled for D&D.

The SNL Facilities Decontamination and Demolition Committee has been actively decommissioning nonhazardous facilities. It is anticipated that decontamination and demolition (D&D) of contaminated facilities, including those that may generate mixed waste, could begin as early as FY95.

There are three facilities that may be investigated, characterized or decontaminated in FY95. Building 805/Rm. B17 is a 500-square-foot chemistry laboratory located in the basement of Building 805. A major use of this laboratory has been to support a neutron activation program conducted in the building. Building 869/Rm. B10 is a 500-square-foot room, comprised of a vestibule, change area, and machine shop, located in the basement of Building 869. This shop was used to machine materials posing special health concerns, including beryllium, lead, magnesium, and depleted uranium. Building 906 is a 900-square-foot laboratory that was previously used to decontaminate radioactively contaminated weapons components.

It is expected that sampling and characterization of these facilities will begin in late FY95. The characterization effort may generate mixed waste in the forms of PPE, decon water, decon rags, and organic and inorganic samples such as smears, sediments, and possible metal particulate, which may be submitted for analysis.

After characterization efforts are complete, it is expected that Bldg. 805/Rm. B17 and Bldg. 906 will be scheduled for decontamination efforts in late FY95 or FY96. Based on the past use of the facilities, it is anticipated that mixed waste may be generated. Organic mixed waste from these efforts may include PPE, decon rags, decon water, etc. Inorganic debris may include building materials, piping, ductwork, concrete, flooring materials, etc. Whenever possible, equipment will be decontaminated and applied for reuse. However, there is a potential that some pieces of equipment may require disposal as mixed waste.

The Facilities Assessment and Decontamination and Demolition committee will be performing building investigation throughout SNL to determine additional facilities that require decontamination. This effort will begin in FY95 and continue through FY96. Additional facilities requiring decontamination will be prioritized and decontaminated as needed. It is probable that future decontamination efforts will generate the same types of waste as described above. Mixed waste streams from D&D activities are expected to fit into currently identified treatability groups. Any new treatability groups would be identified with a preferred treatment option according to the methodology of the DOE/AL Mixed Waste Treatment Plan (DOE, 1994) and added to the STP.

Funding for decontamination has not been identified at this time.

### 6.3 Other Waste

In addition to mixed waste generated as a result of the ER Program (Section 6.1) and D&D (Section 6.2), SNL/NM expects to generate small quantities of mixed waste as a result of routine research and development activities. Table 6-1 presents an estimate of the quantities that will be generated during 1993-1997, the five years following the cutoff date (December 31, 1992) of the Final MWIR. However, because SNL/NM is a research and development facility, the types and quantities of mixed waste generated vary depending on the specific projects performed and are difficult to predict. Regardless of the projects undertaken, SNL/NM will continue to pursue a vigorous waste minimization program that limits the production of mixed waste.

The estimates provided in Table 6-1 differ from the five-year estimates provided in the Interim MWIR (DOE, 1993b), which calculated the five-year generation rates for individual waste streams based on the generation rate from May 8 through December 1992. These dates coincide with the mixed waste moratorium at SNL/NM, when little mixed waste generation was permitted. Thus, the rates may not be representative of laboratory activities. The five-year projections presented in Table 6-1 were calculated for each treatability group using the following general assumptions:

1. The 1992 and 1993 inventories are more reliable indicators of the next five years than the MWIR. It is assumed that the waste included in the Interim MWIR was generated over a four-year period from 1989 through 1992. This starting date coincides with the cessation of on-site disposal of radioactive and mixed waste at SNL/NM. Since that time, the waste that is being generated has been stored. A start date of 1989 for all treatability groups is a conservative assumption because some waste types, such as TG1, inorganic debris containing explosives, were not acceptable for on-site disposal and have been accumulating for a much longer period than four years.
2. It is assumed that waste minimization activities at SNL/NM will reduce the 1993-1997 generation rates.

Where applicable, footnotes are provided in Table 6-1 to describe specific assumptions that have been made in estimating the five-year generation rates. The estimates provided in Table 6-1 are for the purposes of this treatment plan only.

SNL/NM has a large number of legacy materials stored in the Manzano bunkers that are not currently considered waste. Many of these items have been held for historical reasons, training purposes, or may be from unique experiments, and many contain accountable nuclear material. As required by the DOE, SNL/NM is in the process of assessing these items to determine their status in terms of recoverable nuclear material and possible reuse within the DOE complex. This material is being evaluated through the Economic Discard Limit Process for Accountable Nuclear Material to determine its usefulness and recoverability. Recently these items have been inventoried at approximately 3,000 items. Once this process is complete, some of this material will be declared as having no defined use or value and become discardable. As this occurs, additional characterization may be required. Some of the material is presently classified and would be processed through appropriate demilitarization and sanitization procedures.

For items that are declared to be waste, SNL/NM will evaluate the wastes using an approach similar to the one used for the mixed wastes addressed in the STPs as follows:

- characterize the waste,
- screen treatment technologies based on established criteria,
- identify candidate technologies for treatability studies and potential off-site facilities,
- perform the necessary treatability studies,
- select technologies for long-term treatment, and
- implement full-scale treatment as necessary

A small portion of the discardable material may be identified as mixed waste. This material would most probably belong to the TG9, Inorganic Debris with TCLP Metals treatability group, for which the preferred treatment option is macroencapsulation. The other possible treatability group is Soils with Debris, for which a preferred treatment option has not yet been identified. New waste streams and preferred treatment options will be added to the STP as needed according to the procedure described in the Order.

Other material that can be expected to be generated as mixed waste in the next five years is elemental lead now in the SNL/NM Lead Bank Program. This program evaluates lead for its possible reapplication. This material would be included in the Elemental Lead treatability group (TG4), with macroencapsulation as the preferred treatment option.

It is anticipated that most of the mixed waste that will be generated at SNL/NM in the future will fall into one of the existing treatability groups. Treatment of this waste will then be implemented using the approach and options given in Section 3.1.



## 7.0 STORAGE REPORT

DOE is committed to storing waste in compliance with RCRA storage requirements in 40 CFR 264 or 40 CFR 265 pending the development of the mixed waste treatment capacity and the implementation of the STPs.

If mixed waste is shipped off-site to another DOE site for treatment, it will be stored before shipment and after treatment (if residues are returned to SNL/NM) in permitted storage area. This storage will be analyzed on a case-by-case basis between the shipping and receiving sites, in consultation with the affected states. Factors such as inadequate compliant storage capacity at the shipping site and the need to facilitate closure of the shipping site will be considered when proposing shipping schedules.

Currently, mixed waste storage at SNL/NM is managed through the Waste Operations Department of the Environmental Operations Center. There are 9 mixed waste storage units identified in the RCRA Part B Permit Application, as amended December 1994. These units are currently operated under 40 CFR 265 as interim status units. It is anticipated that seven Manzano bunkers, the RMWMF, and Building 6596 will be the main areas for mixed waste storage in the future and that no additional storage capacity will be needed based upon future generation rates. Most of these units are within the Sandia Technical Areas although explosives are stored in the Manzano bunkers, a specially designated area of KAFB.

SNL/NM intends to continue to store mixed waste that is generated by the activities associated with its mission. The strategy for permitting mixed waste storage is being developed in consultation with the NMED. It is not expected that a Part B Permit could be issued before FY96, when it is planned that the Order from the negotiated STP will be in place. The RCRA Permit Application amendments, however, will continue to reflect the planning developed through the STPs.

# SNL/NM PSTP Background Volume

1

## 8.0 PROCESS FOR EVALUATING DISPOSAL ISSUES IN SUPPORT OF THE STP DISCUSSIONS

This section discusses the overall Department Of Energy (DOE) process for evaluating issues related to the disposal of residuals from the treatment of mixed low-level waste (MLLW) subject to the Federal Facilities Compliance Act (FFCA). SNL/NM is among the sites being analyzed further for potential development as a disposal site for residuals from the treatment of MLLW subject to the FFCA. This section outlines the disposal planning process developed by DOE, in consultation with the states, for evaluating potential options for the disposal of residuals from the treatment of MLLW. Importantly, because DOE is not currently developing MLLW disposal sites (with the exception of the Hanford Site) preferred alternatives or final destinations for disposal of treatment residuals are not known at this time. The results of this process are intended to be considered during subsequent planning activities and discussions between DOE and regulatory agencies.

### 8.1 Background

The FFCA requires DOE to develop a plan for the treatment of mixed wastes. The Act does not impose any similar requirement for the disposal of mixed wastes after they have been treated; however, DOE recognizes the need to address this final phase of mixed waste management. The following process reflects DOE's current strategy for evaluating the options for disposal; the evaluation will increase understanding of the strengths and weaknesses of a site's potential for disposal but is not a site selection process. Ultimately the identification of sites that may receive mixed waste for disposal will follow state and federal regulations for siting and permitting, and will include appropriate public involvement.

High-level and mixed transuranic wastes are among the mixed waste subject to the FFCA. Options for disposal of these mixed wastes are not identified by this process because there are established processes for studying, designing, constructing, and operating disposal facilities for these wastes.

The DOE has historically planned to develop MLLW disposal facilities at the six DOE sites currently disposing of low-level waste. These sites are Hanford, Savannah River, Oak Ridge Reservation, Idaho National Engineering Laboratory, Nevada Test Site, and Los Alamos National Laboratory. Currently, the Hanford Site has the only active permitted facility operated by DOE for the disposal of residuals from the treatment of MLLW. This plan has been re-directed in conjunction with the planning efforts of the FFCA to include the results of the disposal planning process (Figure 8-1), and the Environmental Management Programmatic Environmental Impact Statement (EM PEIS). The sites subject to evaluation under this process are the 49 sites reported to Congress by DOE in the Mixed Waste Inventory Report (MWIR), April 1993, that are currently storing or expected to generate mixed waste.

### 8.2 Disposal Planning Process

Although the FFCA does not specifically address disposal of treated mixed wastes, both DOE and the States have recognized that disposal issues are an integral part of treatment discussions. A process was established to evaluate and discuss the issues related to the potential disposal of the residuals from the treatment of DOE MLLW at the sites subject to the FFCA, shown in Figure 8-1. The focus of this process has been to identify, from among the 49 sites that currently store or are expected to generate mixed waste, sites that are suitable for further evaluation of their potential as disposal sites. Sites determined to have marginal or no potential for disposal will be removed or deferred from further evaluation under this process. The remaining sites will be evaluated more



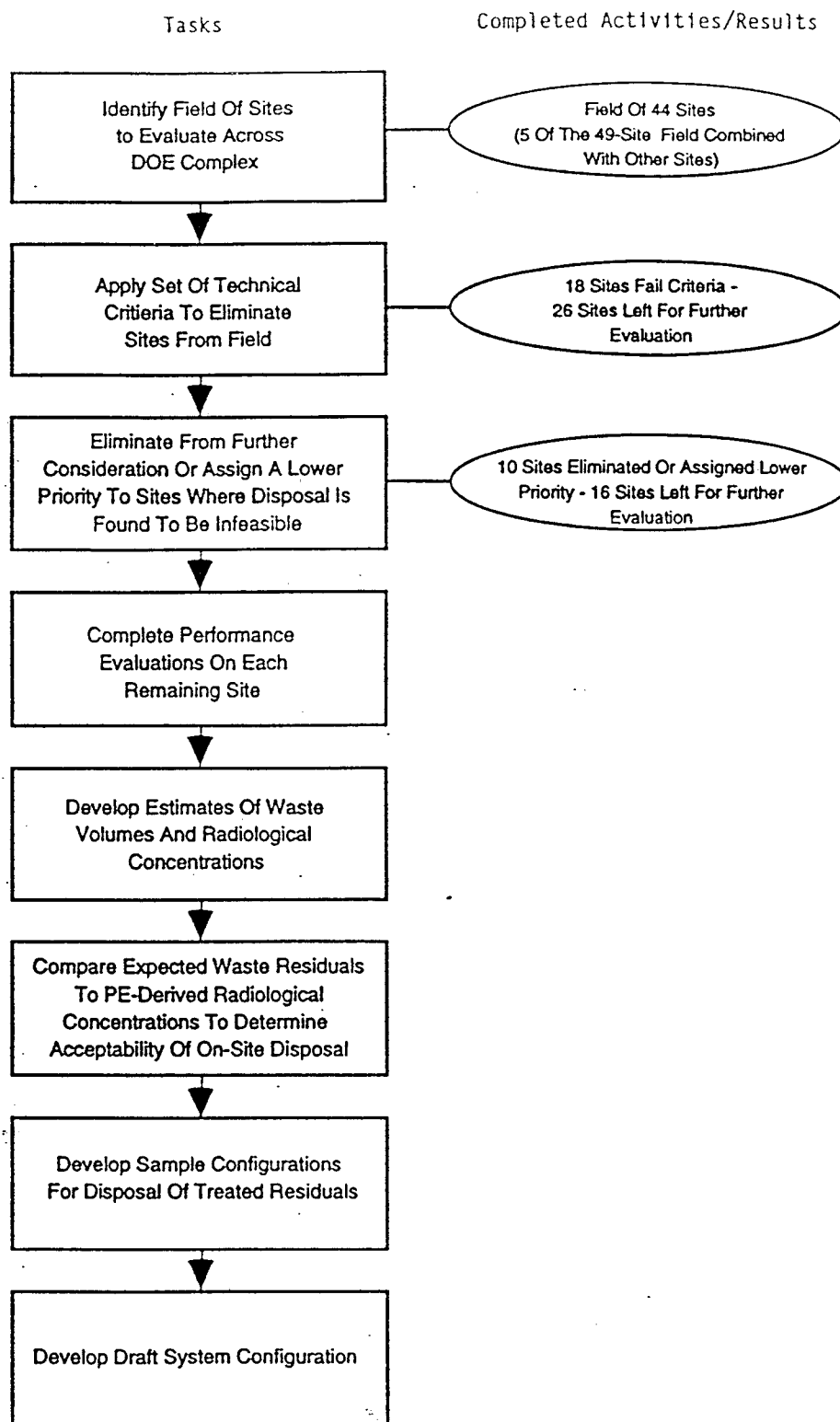


Figure 8-1. Disposal Planning Process

extensively. Ultimately, a number of sites are expected to be identified that are technically acceptable for disposal of treated residuals.

### 8.2.1 Activities to Date

#### *Site Grouping*

The initial step in this process was to examine each of the 49 sites to determine which sites, while individually listed in the MWIR, were in such geographic proximity that further analysis could address them as a single site. This grouping reduced the number of sites to 44, as follows:

- Idaho National Engineering Laboratory and Argonne National Laboratory (West) are located on a single federally-owned reservation near Idaho Falls, Idaho;
- The Sandia National Laboratories, California, and Lawrence Livermore National Laboratory are located on adjoining, federally-owned properties near Livermore, California;
- The Inhalation Toxicology Research Institute and Sandia National Laboratories, New Mexico, are located on the same federally-owned reservation, and;
- The Oak Ridge National Laboratory, Oak Ridge K-25 Site, and Oak Ridge Y-12 are all located within the federally-owned Oak Ridge Reservation, near Oak Ridge, Tennessee.

#### *Initial Site Screening*

At a joint meeting on March 3-4, 1994, DOE and the states agreed on three exclusionary criteria for further screening the 44 remaining sites. These criteria were developed by reviewing federal and state requirements regarding the siting of waste treatment, storage, and disposal facilities. In order to be evaluated further, a site:

- must not be located within a 100-year flood plain;
- must not be located within 61 meters (200 feet) of an active fault, and;
- must have sufficient area to accommodate a 100-meter buffer zone.

The first criterion (100-year flood plain) is derived from both Nuclear Regulatory Commission (NRC) and Resource Conservation and Recovery Act (RCRA) requirements. The second criterion (active fault) was selected from requirements found in RCRA which restrict the location of waste treatment, storage, and disposal facilities. The third criterion (sufficient area for 100-meter buffer) is derived from guidance from the Environmental Protection Agency (EPA), NRC, and DOE for the proper operation of waste facilities.

Evaluation of the 44 sites resulted in identification of 26 sites meeting the above criteria. At a joint meeting on March 30-31, 1994, DOE and the states agreed to remove from further evaluation those sites not meeting the screening criteria. Also at that meeting, DOE agreed to collect additional, more detailed information on the remaining 26 sites to identify additional strengths and weaknesses of the sites. It was agreed that DOE or any affected state may propose further elimination of sites from consideration following the site-specific evaluation.

1 *Evaluation of the Remaining 26 Sites*

2 DOE and the states met on July 26-27, 1994, to discuss the site-specific data on the remaining 26  
 3 sites, and to consider proposals for eliminating additional sites from further evaluation. The focus  
 4 of these discussions was to identify sites suitable for further evaluation under this process.

5 The criteria that DOE and the states used to eliminate sites from further evaluation at this stage were  
 6 derived from three main groupings of considerations: Technical Considerations, Potential  
 7 Receptor Considerations, and Practical Considerations. Each of the remaining 26 sites were  
 8 evaluated against criteria in these groupings that included; soil stability and topography,  
 9 precipitation and evapotranspiration, population, proximity to sensitive environment, land  
 10 acquisition, government presence at the site, and regulatory constraints.

11 Sites with marginal or no potential for disposal, based on these criteria, were recommended for  
 12 removal or postponement from further evaluation. As a result of the meeting, DOE and the states  
 13 agreed to eliminate five sites from further evaluation due to their limited potential for disposal.  
 14 These are:

15	<u>Site</u>	<u>State</u>
16	Energy Technology Engineering Center	California
17	General Atomics	California
18	General Electric Vallecitos Nuclear Center	California
19	Pinellas Plant	Florida
20	Site A/Plot M	Illinois

21 Additionally, DOE and the states agreed to merge the evaluation of Knolls Atomic Power  
 22 Laboratory at Niskayuna, New York, and Knolls Atomic Power Laboratory at Kesselring, New  
 23 York, due to their close, geographic proximity.

24 While not eliminated from further evaluation, it was agreed to lower the evaluation priority of an  
 25 additional four sites. Issues such as the technical capabilities of the site, the volume of mixed  
 26 waste that may be generated by the sites, and the acceptability of off-site waste contributed to a  
 27 conclusion that further evaluation of some sites should not be a high priority. DOE and the states  
 28 agreed to evaluate these sites in terms of their capability to dispose of their own mixed waste if no  
 29 other off-site disposal options could be identified. These sites will not be considered for disposal  
 30 of wastes from other sites, and may be eliminated from further analysis if sufficient evidence  
 31 suggests the potential for disposal is too limited. The sites in this category are:

32	<u>Site</u>	<u>State</u>
33	Weldon Spring Remedial Action Project	Missouri
34	Brookhaven National Laboratory	New York
35	Mound Plant	Ohio
36	Bettis Atomic Power Laboratory	Pennsylvania

## 1 *Performance Evaluation*

2 The performance evaluation being conducted for the 16 sites identified for further evaluation entails  
 3 the collection of more detailed site-specific data related to the site characteristics. The performance  
 4 evaluation methodology is based on the principles of radiological performance assessments and  
 5 was developed by DOE performance assessment experts. Additionally, the evaluation will be  
 6 based on RCRA-compliant engineered facilities. This information will be used to evaluate the sites  
 7 and estimate the radionuclide concentration limits of waste that may be disposed at a given site.  
 8 The performance evaluations were initiated in August 1994. The 16 sites for which performance  
 9 evaluations are being prepared are:

10	<u>Site</u>	<u>State</u>
11	Lawrence Livermore National Laboratory, Site 300	California
12	Rocky Flats Environmental Technology Site	Colorado
13	Idaho National Engineering Laboratory	Idaho
14	Argonne National Laboratory	Illinois
15	Paducah Gaseous Diffusion Plant	Kentucky
16	Nevada Test Site	Nevada
17	Los Alamos National Laboratory	New Mexico
18	Sandia National Laboratories	New Mexico
19	Knolls Atomic Power Laboratory-Kesselring	New York
20	West Valley Demonstration Project*	New York
21	Fernald Environmental Management Project	Ohio
22	Portsmouth Gaseous Diffusion Plant	Ohio
23	Savannah River Site	South Carolina
24	Oak Ridge Reservation	Tennessee
25	Pantex Plant	Texas
26	Hanford Site	Washington

27 \* Because the West Valley Demonstration Project Act does not authorize the site to accept off-site  
 28 wastes, the site will only be evaluated for disposal of on-site wastes.

### 29 **8.2.2 Next Steps in the Evaluation Process**

30 As illustrated in Figure 8-1, progress has been made in the planning of the disposal process. The  
 31 following steps outline future activities that are either ongoing or are to be completed to facilitate an

1 informed decision about the disposal of DOE MLLW. Coordination with the states will continue to  
2 ensure stakeholder input and to resolve concerns at the earliest possible stage.

### 3 *Complete Remaining Performance Evaluations*

4 To date, 10 performance evaluations have been completed for the following sites: Savannah River,  
5 Oak Ridge Reservation, Idaho National Laboratory, Hanford, Sandia National Laboratories,  
6 Rocky Flats Environmental Technology Site, Los Alamos National Laboratory, Pantex Plant,  
7 Nevada Test Site, and Lawrence Livermore Laboratory. Performance evaluations for the  
8 remaining 6 sites are scheduled to be completed by June 1995. A progress report for the  
9 performance evaluation activities has been issued at approximately the same time frame as the final  
10 Proposed Site Treatment Plans (PSTPs) in order to keep the states and other interested parties  
11 informed of the progress.

### 12 *Develop Estimates of Waste Volumes and Radionuclide Concentrations in Treated Residuals*

13 Once treatment methods for the MLLW waste streams are finalized through the FFCAct process,  
14 estimates of the volumes and radionuclide concentrations of the treated residuals will be developed  
15 for all waste streams; this analysis will take place after the PSTPs have been approved by the  
16 appropriate regulatory agencies. These estimates are needed to compare to the performance  
17 evaluation-derived radionuclide concentration guides.

### 18 *Compare Estimates of Radionuclide Concentration in Treated Residuals to Performance* 19 *Evaluation-Derived Radionuclide Concentration Guides*

20 Radionuclide concentrations for each treated residual will be compared to those disposal values  
21 derived in the performance evaluation in this step. Comparing radionuclide concentrations in  
22 treated residuals with performance evaluation concentration guides will compare MLLW stream  
23 characteristics to potential disposal sites' capabilities. This evaluation will also include off-site  
24 DOE and commercial disposal site candidates for those treated waste streams which do not have  
25 on-site capabilities. Confirmation of the candidates streams and sites will be attained through  
26 detailed performance assessment efforts.

### 27 *Develop Sample Configurations for Disposal of Treated Residuals*

28 An Options Analysis Team (OAT) approach will be employed to develop sample complex-wide  
29 configurations for the disposal of treated MLLW residuals. These configurations will take into  
30 account such technical issues as compatibility of radionuclides (both handled at the site and those  
31 considered acceptable by the performance evaluations), capacity to handle projected residual  
32 volumes, etc. Under the OAT approach, other types of issues will be weighed during the  
33 configuration discussions such as transportation costs and distances.

### 34 *Develop a Draft Disposal System Configuration*

35 Using the sample configurations as a starting point, DOE will develop with state and stakeholder  
36 input, a draft disposal system configuration. This configuration will be the basis for determining  
37 future funding and schedules for proposed disposal facilities. The Final EM PEIS will provide  
38 bounding analysis of potential environmental impacts for the range of sample configurations  
39 considered. It will identify preferred sites for further development as disposal facilities.  
40 Following the issuance of the Record of Decision (ROD) for the EM PEIS, DOE may initiate site-  
41 specific National Environmental Policy Act (NEPA) evaluations for the proposed disposal  
42 facilities; initiate performance assessment analyses for compliance with DOE Order 5820.2A; and  
43 initiate processes for permitting disposal facilities.

### 8.3 Integration with the STP Process

The FFCAct does not require disposal to be included in the STPs; however, given the complex issues involved, DOE recognizes the importance of state input to facilitate resolution of issues related to disposal. Section 8 information is provided in the PSTP to continue to involve the states and inform them of DOE's continued work on the disposal issue. For more detailed information on the ongoing performance evaluation process, refer to the "Progress Report on Performance Evaluation of DOE Sites' Capabilities for Mixed Low-Level Waste Disposal." As the disposal planning process moves forward, further information will be provided and coordination with the states will continue.

### 8.4 Site Specific Disposal Process

The SNL/NM site is one of the 16 sites being evaluated as a potential low level mixed waste disposal site as discussed in Section 8.0. Because this evaluation process is in the early stages, it is currently planned that the mixed waste generated by or in storage at SNL/NM will be disposed of after treatment either at other DOE or commercial sites.

SNL/NM submitted an application to the DOE/Nevada Operations (DOE/NVO) in March 1994 according to the prescribed process of NVO-325 (DOE, 1992) for disposal of low level radioactive-only waste at the Nevada Test Site (NTS). An audit by NVO of procedures, controls, etc., at SNL/NM on the first radioactive-only waste stream was conducted in October 1994, and disposal is anticipated to begin in FY95. Presently, the NTS does not accept any mixed waste for disposal but still is working with its regulatory agencies to obtain a permit for mixed waste disposal and possibly mixed waste treatment. A schedule has not yet been set, but these changes are not expected before FY97.

It is expected that, after sorting some of the mixed waste treatability groups, there will be a moderate portion of waste that is not mixed waste because it does not contain RCRA hazardous constituents or does not exhibit RCRA characteristics. That waste will likely be eligible for disposal at the NTS after amendment of the application. Also, waste that is treated by methods that destroy RCRA hazardous constituents (e.g., chemical deactivation and thermal desorption) or that remove the hazardous characteristic (e.g., neutralization) may also become eligible for disposal at the NTS.

Under the LDR program of RCRA (40 CFR 268.35(e)(2)), the last day that mixed radioactive hazardous debris contaminated with characteristic waste could be disposed of without being treated to meet the LDR treatment standards was May 8, 1994. Therefore, SNL/NM has disposed mixed waste at Envirocare of Utah, Inc., in accordance with this requirement. SNL/NM plans to continue to dispose of mixed wastes at Envirocare of Utah, Inc. as appropriate. In the future, any waste disposed at this site will be treated certifiably before disposal.

The organic liquids treatability group is likely to be disposed at a commercial facility. The facility would use incineration or an industrial boiler to destroy the hazardous constituents before disposal of radioactive residue.

Use of commercial facilities requires the approval of an exemption to DOE Order 5820.2A. This exemption can be granted by the DOE/AL Operations Office.