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FACT SHEET
May 21, 2007

**INTENT TO APPROVE A CLOSURE PLAN AMENDMENT, SELECT A FINAL
REMEDY, AND ISSUE A POST-CLOSURE CARE PERMIT UNDER THE
NEW MEXICO HAZARDOUS WASTE ACT FOR THE
SANDIA NATIONAL LABORATORIES CHEMICAL WASTE LANDFILL**

Facility Name: Sandia National Laboratories

EPA ID Number: NM5890110518

Type of Facility: Sandia National Laboratories (SNL), the Facility, is located on Kirtland Air Force Base (KAFB) south of Albuquerque in Bernalillo County, north-central New Mexico.

SNL is an engineering and science laboratory owned by the U. S. Department of Energy (DOE) and co-operated by the DOE and Sandia Corporation. Sandia Corporation is a subsidiary of Lockheed Martin, Inc. SNL designs non-nuclear components for the nation's nuclear weapons, develops and tests conventional military weapons, performs a wide variety of energy research and development projects, and works on assignments that respond to national security threats. SNL generates wastes that are regulated under the federal Resource Conservation and Recovery Act (RCRA), the New Mexico Hazardous Waste Act (HWA, Chapter 74, Article 4 NMSA 1978) and its implementing regulations, the New Hazardous Waste Management Regulations (HWMR), 20.4.1 NMAC. SNL's hazardous waste management operations include four (greater than 90 day) storage units; one thermal treatment unit used for destruction of explosive wastes; a radioactive and mixed waste management unit used for storage, treatment, and packaging of mixed wastes (mixed wastes contain both radioactive and hazardous waste components); five bunkers used for storage of mixed wastes; an auxiliary hot cell unit used for treatment, packaging, and storage of mixed wastes; a corrective action management unit (CAMU) containing remediation wastes and undergoing post-closure care; and the inactive Chemical Waste Landfill (CWL). The (CWL) is the hazardous waste management unit being permitted for post-

closure care and is the subject of the regulatory actions described in this Fact Sheet.

The CWL, now inactive, was an interim status hazardous waste landfill undergoing closure in accordance with 20.4.1.600 NMAC incorporating 40 CFR Part 265, Subpart G and the CWL Final Closure Plan (December 1992, as amended). The New Mexico Environment Department (NMED) proposes to issue a Post-Closure Care Permit (Permit) for the CWL that requires SNL to comply with applicable regulations under 20.4.1.500 NMAC incorporating 40 CFR Part 264 for groundwater monitoring, unsaturated vadose zone monitoring, and various post-closure care activities pursuant to the HWA and the HWMR. The Permit will impose certain requirements on these activities to ensure protection of human health and environment. The Permit will identify the post-closure activities that shall be performed at the CWL for a period of 30 years, and is designed to meet the federal Resource Conservation and Recovery Act (RCRA) post-closure care requirements that have been incorporated into State regulations at 20.4.1.500 NMAC incorporating 40 CFR §264.117 through § 264.120. Once effective, the Permit will immediately supersede the CWL Closure Plan after the NMED certifies, in writing, the closure of the CWL.

In addition, the NMED proposes to approve an amendment for Chapter 12 of the CWL Closure Plan and select a final remedy for the landfill based on the CWL Corrective Measures Study.

Location: Sandia National Laboratories is located on KAFB, south of Albuquerque in Bernalillo County, north-central New Mexico. The CWL is located in the southeast corner of Technical Area III in the central KAFB area. Technical Area means a specific parcel of land under the control of SNL.

Owner: U. S. Department of Energy (DOE)

Operators: DOE and Sandia Corporation

INTRODUCTION

The DOE and Sandia Corporation, as the owner and co-operators (and the Applicants of the Permit) of the CWL, are required to obtain a permit from NMED to conduct post-closure care of the CWL. Prior to issuing a final permit, NMED is required to release a draft permit for public comment pursuant to 20.4.1.901.A (3) NMAC. This Fact Sheet is intended to facilitate public review of the draft Permit.

The CWL is a 1.9-acre disposal site. From 1962 until 1985, the CWL was used for the disposal, into unlined pits and trenches, of hazardous, toxic, radioactive, and solid waste generated primarily by SNL research and manufacturing activities. Reportedly, separate pits were used for the disposal of acids, oxidizers, reducers, organic compounds, reactives, bulk materials, metals,

neutral compounds, and salts. Waste was to be separated by type and placed into the appropriate pits. However, based upon evidence, including direct observation during the Landfill Excavation (LE) Voluntary Corrective Measure (VCM), it is apparent that this procedure was not always followed while the landfill was in operation. In addition to pits and trenches, an unlined surface impoundment, approximately 23 by 6 feet in area by 7 feet deep, was used for disposal of chromic acid waste from the early 1970's to 1978. Between 1979 and 1982, a lined surface impoundment, approximately 15 by 15 feet in area by 5 feet deep, was used to dispose of liquid chromic acid waste and ferric chloride. In 1981, all disposal of liquid waste into unlined pits ceased, and in 1982, liquid waste disposal was discontinued in the lined chromic acid pit. It was later determined that the lined surface impoundment had leaked.

From 1981 to 1989, the CWL also operated under interim status as a hazardous waste drum-storage facility with a 300-drum capacity. Waste drums were staged in segregated areas according to waste type. In 1985, groundwater monitoring began at the CWL, with the installation of five monitoring wells. Operations at the CWL were discontinued completely in 1989. The closure process for the CWL was initiated in the early 1980's and formalized in 1988.

In 1990, trichloroethene (TCE) was detected in groundwater at a concentration exceeding the U. S. Environmental Protection Agency (EPA) Maximum Contaminant Level of 0.005 mg/L. This finding led to the development and incorporation of a corrective action program into the Closure Plan. The Closure Plan, which contains mandatory closure requirements for the CWL, was approved by the NMED in February 1993. The Closure Plan defines the schedule and reporting requirements for investigative and corrective action activities required to close the site and move into post-closure care. From 1992 through the present, all groundwater and subsurface soil and soil-gas investigations, as well as two VCMs, were conducted according to Closure Plan requirements and related documents. As the CWL site investigation and corrective action programs progressed, the Closure Plan was updated and revised to reflect new information. Since that time, several investigations and two major VCMs (Vapor Extraction (VE) and LE VCMs) have been completed as part of the closure process.

The Permit will require the Applicants to address monitoring, inspection, maintenance, and reporting activities that will be implemented during the post-closure care period. Further, the Permit will define monitoring data evaluation and the process that will be implemented to determine whether any additional corrective action will be needed in the future based on analytical results of groundwater sampling and soil-gas concentration "trigger" levels.

REGULATORY BACKGROUND

Subtitle C of RCRA provides "cradle to grave" regulation of the management of hazardous waste at hazardous waste treatment, storage, and disposal facilities. The EPA has authorized the State of New Mexico to implement and enforce Subtitle C requirements, including corrective action requirements, under its own hazardous waste management program. The State's enabling authority for the program is the HWA, which authorizes the State's Environmental Improvement Board (EIB) to adopt hazardous waste management regulations and NMED to implement and enforce the provisions of the HWA and the regulations.

As part of the State's program, the EIB has adopted regulations relating to, among other things, the issuance of hazardous waste permits. These regulations incorporate by reference pertinent sections of the code of federal regulations – 40 CFR Parts 260 through 270, 273, and 280 – and are codified in the HWMR at 20.4.1 NMAC.

The HWA and HWMR require each person owning or operating an existing facility or planning to construct a new facility for the treatment, storage, or disposal of hazardous waste to have a permit. *See* 42 U.S.C. 6925 and 40 CFR § 270.1. A treatment, storage or disposal facility in existence on November 19, 1980 is eligible for "interim status." Subject to certain conditions, interim status authorizes an existing facility to operate, subject to the interim status standards set forth in 20.4.1.600 NMAC incorporating 40 CFR Part 265, until NMED issues or denies a permit or until interim status is otherwise terminated.

The HWA and HWMR further require corrective action for all releases of hazardous waste or constituents from any solid waste management unit (SWMU) at a facility seeking a permit, regardless of the time at which waste was placed in such a unit. [42 U.S.C. 6924(u), Section 74-4-4.2(B), NMSA 1978, and 40 CFR § 264.101(a)]. Corrective action is also required for releases extending beyond the facility boundary. [42 U.S.C. 6924(v) and 40 CFR § 264.101(c)].

PROCEDURAL BACKGROUND FOR THE SNL CWL PERMIT APPLICATION

General Permit Application Requirements: Owners or operators of hazardous waste management facilities, including interim status facilities, are required to submit a comprehensive permit application covering all aspects of design, operation, maintenance, closure, and post closure (if required) of their facilities. The Permit Application consists of Parts A and B. Part A of the Permit Application (Part A Application) is a relatively short, standard form that summarizes general information about a facility including the name of the owner/operator, a list of the types of wastes managed, a facility layout diagram, and the hazardous waste management activities requiring a permit. Part B of the Permit Application (Part B Application) is an extensive document submitted in a narrative, tabular, and schematic format that describes the facility operations in detail and includes information necessary to establish corrective action requirements for any releases from SWMUs and Areas of Concern. The CWL is a SWMU.

Part A Permit Application: In February 2007, SNL submitted, in a timely manner, to NMED its Part A Permit Application for the CWL. The Part A Permit Application listed one hazardous waste management unit, the CWL, which is the subject of this Fact Sheet.

Part B Permit Application: In September 2005, SNL submitted, in a timely manner, its Part B Post-Closure Care Plan (PCCP) for the CWL, and requested that the Plan be incorporated as part of the Facility's Part B Permit Renewal Application previously submitted in February 2002. In February 2007, SNL submitted, in a timely manner, to NMED its Part B Post-Closure Care Application (along with its Part A) for post-closure care of the CWL, as a stand alone Permit.

TYPE AND QUANTITY OF WASTES

Type of Wastes: The following hazardous wastes are associated with the CWL. Soil excavated from the landfill also contained polychlorinated biphenyls (PCBs) and low activity levels of tritium.

D Waste Codes (Hazardous wastes exhibiting the characteristics of ignitability (D001), corrosivity (D002), reactivity (D003), or toxicity (D004, D005, D006, D007, D008, D009, D010, D011, D018, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D031, D032, D033, D034, D035, D036, D037, D038, D039, D040, D041, and D042).

F Waste Codes (Hazardous wastes from non-specific sources): F001, and F002 (spent halogenated solvents), F003, F004, and F005 (spent non-halogenated solvents).

P Waste Codes (acute hazardous wastes from commercial chemical products): P087, and P120 (toxic oxidizers).

U Waste Codes (toxic hazardous wastes from commercial chemical products): U061, U117 U134, U151, U154, and U165 (waste fuel and fuel contaminated water)

The “D,” “F,” “P,” and “U” Codes are EPA Hazardous Waste Numbers that are assigned to types of hazardous wastes. These codes are specified at 20.4.1.200 NMAC, incorporating 40 CFR Part 261 Subparts C and D.

Quantity of Wastes: During the CWL LE VCM, all former disposal areas were completely excavated, generating more than 52,000 cubic yards of contaminated soil and debris from the CWL. Hundreds of intact containers with waste in them were also removed and disposed of off-site.

TYPE OF UNIT TO BE PERMITTED

The CWL is an inactive interim status hazardous waste landfill presently undergoing closure.

DESCRIPTION OF THE DRAFT PERMIT

The draft Permit is organized into three Permit Parts and six Attachments. The draft Permit generally follows the format, style, and general conditions in EPA permitting guidance including, but not limited to: *Model RCRA Permit For Hazardous Waste Management Facilities* (Draft), U.S. EPA (September, 1988); *Model Permit For Hazardous and Solid Waste Amendments* (Draft), U.S. EPA (July, 1995, 1998); and *RCRA Guidance Manual for Subpart G Closure and Post Closure Care Standards and Subpart H Cost Estimating Requirements*, OSWER 9476.00-5 (January, 1987). Because of the unique conditions at SNL, NMED proposes to impose, in addition to general permit conditions, several permit conditions that are necessary to protect human health and the environment pursuant to NMED’s “omnibus authority” [see 20.4.1.900 NMAC incorporating 40 CFR 270.32(b)(2)]. In addition, the Permit will impose requirements to address any new releases from the unit to the groundwater.

Each Permit Part is briefly described below and certain permit conditions are noted. The general regulatory authority for the conditions set forth in each Section is noted, more specific citations are provided throughout the draft Permit at the end of each condition.

Permit Part 1: (General Permit Conditions) contains permit conditions that apply to all hazardous waste management permits, most of which are based upon mandatory permit conditions set forth at 20.4.1.500 NMAC incorporating 40 CFR Part 264, and 20.4.1.900 NMAC incorporating 40 CFR Part 270.

Permit Part 2: (General Facility Conditions) contains mandatory permit conditions for operation of hazardous waste management facilities set forth at 20.4.1.500, incorporating 40 CFR Part 264, Subparts B through E. Permit Part 2 references Permit Attachments that provide more information regarding the CWL, namely Permit Attachment 1 (*Post-Closure Care Plan for the Chemical Waste Landfill*), Permit Attachment 2 (*Ground Water Sampling and Analysis Plan*), Permit Attachment 3, (*Soil-Gas Sampling and Analysis Plan*), Permit Attachment 4 (*Inspection Forms*), Permit Attachment 5 (*Personnel Training Program*), and Permit Attachment 6 (*Site-Specific Contingency Plan*).

Permit Part 3: (Post-Closure Care Requirements for the Chemical Waste Landfill) contains permit conditions necessary for the activities described in Permit Attachment 1 to meet the post-closure care requirements, and provides the context within which post-closure care activities at the CWL shall occur. Part 3 also includes information on the types of waste disposed of in the CWL, a list of waste numbers associated with soil and wastes that were removed from the CWL, and requirements for the length of post-closure care, planned monitoring and maintenance activities, and other requirements for post-closure care. More detailed post-closure care procedures for the CWL are presented in the Permit Attachments.

In addition to the post-closure care requirements of 20.4.1.500 NMAC incorporating 40 CFR §§ 264.117 through 264.120, the Permittees must comply with the groundwater protection standards at 20.4.1.500 NMAC incorporating 40 CFR § 264.92. Trichloroethene (TCE), chromium, and nickel have been detected in groundwater in the uppermost aquifer underlying the CWL. Therefore, in accordance with 20.4.1.500 NMAC incorporating 40 CFR § 264.91(a)(1), the Permittees must institute a compliance ground water monitoring program meeting the requirements of 20.4.1.500 NMAC incorporating 40 CFR § 264.99.

PROPOSED CHAPTER 12 CLOSURE PLAN AMENDMENT

In addition to issuing the draft Permit, the NMED proposes to approve an amendment to the CWL Closure Plan, pending public input. Once approved, the proposed amendment would modify Chapter 12 of the CWL Closure Plan. Chapter 12 provides information and sets forth requirements regarding corrective action conducted at the CWL and the closure process that must be completed prior to transitioning the landfill from closure as an interim status unit to becoming a permitted unit subject to post-closure care. The proposed Chapter 12 revision updates this part of the Closure Plan to be consistent with current NMED direction. Because the updates are extensive, the new version of Chapter 12 will replace in whole the original text. The closure process for the CWL will be terminated once the Post-Closure Care Permit becomes effective

CORRECTIVE MEASURES STUDY REPORT AND PROPOSED FINAL REMEDY

As mentioned previously, corrective action has been conducted at the CWL under the Closure Plan and related plans. Samples of surface and subsurface soil and soil gas, and groundwater have been collected and analyzed at various times as required by the Closure Plan. Groundwater monitoring continues to the present. TCE, chromium, and nickel have been detected in soil and in groundwater in the uppermost aquifer underlying the CWL. Other contaminants such as PCBs and tritium have been detected in soil. Volatile organic compounds, including TCE, have been detected in subsurface soil vapor.

As a result of this characterization effort, the CWL was excavated from September 1998 through February 2002 to remove waste and contaminated soil (the LE VCM). Soil-vapor extraction was conducted prior to excavation of the landfill to reduce the concentrations of soil vapor in the vadose zone (the VE VCM). Intact containers of waste removed from the excavation of the landfill were treated and disposed of off-site. Soil having the highest levels of contaminants was treated as necessary and placed permanently into the containment cell at the nearby CAMU.

After excavation was completed, the CWL site was backfilled with soil to a uniform depth of four feet below ground surface. Some of the soil used as backfill was originally excavated from the landfill. Concentrations of contaminants in the soil backfill meet industrial risk levels; the future land use for the CWL site is industrial. Additionally, since completing excavation and vapor extraction at the landfill, levels of contaminants in the groundwater have dropped to concentrations below the appropriate EPA Maximum Contaminant Levels or New Mexico Water Quality Control Commission water quality standards.

On May 20, 2003, SNL submitted a compilation of documents for the CWL including a Corrective Measures Study (CMS) Report, Remedial Action Proposal (RAP), and a Post-Closure Care Plan and Permit Application. On December 12, 2003, the NMED rejected the CMS Report and postponed the review of the RAP pending the approval of a revised CMS Report. SNL submitted a revised CMS in December 2004. The December 2004 CMS Report was deemed complete by the NMED on May 21, 2007.

Rejection of the May 2003 CMS Report led to a request by DOE for approval to install the at-grade vegetative soil cover proposed in the May 2003 RAP as an interim measure. This request was made because the NMED-approved risk-based cleanup levels established for the LE VCM was based on the eventual construction of a cover over the CWL and it was further intended for the landfill to be maintained in a protective manner pending selection of a final remedy and issuance of a Post-Closure Care Permit. NMED approved the interim request with conditions in September 2004, and the conditions of approval were addressed in the revised CMS Report submitted in December 2004. Construction of the at-grade landfill cover was completed in September 2005.

The completion of the LE and VE VCMs appears to have remediated the CWL to meet risk-based standards, therefore the primary purpose of the CMS was to: 1) provide a summary of the corrective action history of the CWL; 2) establish current conditions based upon recent analytical results for groundwater, soil, and soil gas; 3) determine if further corrective action was

warranted after soil-vapor extraction and excavation of the landfill had been completed; and 4) recommend a final corrective measure for the landfill. SNL has proposed that the at-grade cover that was placed over the CWL as an interim measure be accepted as the final remedy for the landfill, in addition to conducting long-term monitoring of groundwater and soil gas, and implementing inspections, maintenance, and institutional controls typical of post-closure care activities. The NMED intends to select the at-grade cover (essentially an evapotranspiration cover) as the final remedy for the landfill, pending public comment. The at-grade cover will be protective of human health and the environment by 1) providing a physical barrier to residual contamination in the landfill, and 2) minimizing the potential infiltration and subsequent percolation of precipitation through the former disposal area. In addition, the NMED intends to require long-term monitoring of groundwater and subsurface soil gas, as well as implementing typical post-closure activities such as implementing institutional controls, conducting inspections and maintenance of monitoring equipment and the cover, and submitting annual reports. The requirements for monitoring and other post-closure care activities are to be set forth in the Post-Closure Care Permit.

PUBLIC REVIEW OF THE DRAFT PERMIT, CLOSURE PLAN AMENDMENT, AND CORRECTIVE MEASURES STUDY REPORT

The Administrative Record for this proposed action consists of the Permit application, draft Permit, the Chapter 12 Closure Plan amendment, the CWL Closure Plan and related documents, the CMS Report, Public Notice, this Fact Sheet, and other supporting documentation. The Administrative Record may be reviewed, with prior appointment, at the following location during the public comment period.

NMED - Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Phone: (505) 476-6000
Monday – Friday: 8:00 a.m. to 5:00 p.m.
Contact: *Pam Allen*

A copy of the draft Permit, the Chapter 12 Closure Plan amendment, the CMS Report, Public Notice, and this Fact Sheet, are also available on the NMED website at www.nmenv.state.nm.us/HWB/snlperm.html under Draft Chemical Waste Landfill Post-Closure Care Permit. To obtain a copy of the Administrative Record or a portion thereof, please contact Ms. Pam Allen at (505) 476-6000, or at address given above. NMED will provide copies, or portions thereof, of the Administrative Record at a cost to the requestor.

A copy of the draft Permit, the Chapter 12 Closure Plan amendment, the CMS Report, Public Notice, and this Fact Sheet, are also available, with prior appointment, at the following location during the public comment period.

NMED District 1 Office - Hazardous Waste Bureau
5500 San Antonio Avenue, NE
Albuquerque, New Mexico 87109
Phone: (505) 222-9543
Mondays - Fridays from 8:00 a.m. to 5:00 p.m.

Contact: Cornelius Amindyas

Comment Period and NMED Contact: Any person who wishes to comment on the draft Permit or request a public hearing should submit their comments or requests in writing or electronic mail (e-mail) form including with the commenter's name and address to the address below. The comment period begins on **May 21, 2007**, to announce the beginning of a 60-day comment period that will end at **5:00 p.m., July 20, 2007**. Only comments and/or requests received on or before **5:00 p.m. July 20, 2007** will be considered.

John E. Kieling, Program Manager
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Ref: SNL Chemical Waste Landfill

Written comments should be based on all reasonably available information and include, to the extent practicable, all referenced factual materials. Documents in the administrative record need not be re-submitted if expressly referenced by the commenter. Requests for a public hearing shall provide: (1) a clear and concise factual statement of the nature and scope of the interest of the person requesting the hearing; (2) the name and address of all persons whom the requestor represents; (3) a statement of any objections to the draft Permit, Closure Plan amendment, or CMS Report including specific references to any conditions being addressed; and (4) a statement of the issues which the commenter proposes to raise for consideration at the hearing. Written comment and requests for Public Hearing must be filed with Mr. John Kieling on or before **5:00 p.m., July 20, 2007**. NMED will provide a thirty (30) day notice of a public hearing, if one is granted, pursuant to the New Mexico Hazardous Waste Management Regulations, 20.4.2.901.F NMAC.

Final Decision: After consideration of all the written public comments and public hearing requests, in accordance with the New Mexico Hazardous Waste Regulations, 20.4.1.901.A(4) NMAC, if a timely written notice of opposition to the draft Permit, Closure Plan amendment, or CMS Report, and a request for a public hearing is received, NMED, in conjunction with the applicant, will respond to the request in an attempt to resolve the issue giving rise to the opposition. If such issues are resolved to the satisfaction of the opponent, the opponent may withdraw the request for a public hearing.

If NMED modifies the draft Permit based on comment, and issues the Permit, the applicant shall be provided by mail a copy of the modified Permit and a detailed written statement of reasons for the modifications.

NMED must ensure that the approved draft Permit, Closure Plan amendment, and selection of a remedy from the CMS are consistent with the Hazardous Waste Management Regulations (20.4.1 NMAC). All written comments submitted will be considered in formulating a final decision and may cause the draft Permit, Closure Plan amendment, or remedy selection to be

modified. NMED will respond in writing to all public comments. This response will specify which provisions, if any, of the draft Permit, Closure Plan amendment, or remedy selection have been changed in the final decision and the reasons for the changes; and briefly describe and respond to all public comments raised during the public comment period. All persons presenting written comments or who requested notification in writing will be notified of the decision by mail. These responses will also be posted on the Department's website.

After consideration of all the written public comments received, NMED will issue, or modify and issue, the Permit, Closure Plan amendment, and remedy selection. The Applicants shall be provided by mail a copy of any relevant modified documents and a detailed written statement of reasons for the modifications.

The Secretary of the New Mexico Environment Department will make the final decision publicly available. The Secretary's decision shall constitute a final agency decision and may be appealed as provided by the Hazardous Waste Act (Chapter 74, Article 4 NMSA 1978).

ARRANGEMENTS FOR PERSONS WITH DISABILITIES

Persons having a disability and requiring assistance or auxiliary aid to participate in this process should contact Judy Bentley at the New Mexico Environment Department, Human Resources Bureau, P.O. Box 26110, 1190 St. Francis Drive, Santa Fe, New Mexico, 87502, telephone 505-827-9872. TDY users please access her number via the New Mexico Relay Network at 1-800-659-8331.