

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 10, 1995

MEMORANDUM
FOR: G. W. Cunningham, Technical Director
COPIES: Board Members
FROM: Daniel G. Ogg, Program Manager, INEL
SUBJECT: Waste Management and Environmental Restoration, Idaho National Engineering Laboratory, Report of Site Visit, February 7 - 9, 1995

1. **Purpose:** This memorandum documents the results of the Defense Nuclear Facilities Safety Board (Board) staff visit to the Idaho National Engineering Laboratory (INEL). The review concentrated on waste management activities at the Waste Experimental Reduction Facility (WERF) and the Pit 9 Remediation Project at the Radioactive Waste Management Complex (RWMC). Additionally, radiological hazard data associated with environmental restoration projects were gathered. The review team included Board's staff members Daniel Ogg and Steven Stokes.
2. **Summary:** Observation of operations at the WERF facilities and discussions with operators and supervisors indicated to the Board's staff that the fundamentals of conduct of operations were present. With minor exceptions, the management, training, and operations programs in place at the WERF are adequate to protect the workers and the public from operation of the sizing and compaction facilities.

The Board's staff received briefings on the Pit 9 Project at the RWMC. Certain aspects of the contracting and management of the project are unique among DOE contracts and reflect a move towards privatization. These features will require further consideration and observation by the Board's staff to determine their real impact on the safety of the project. Included are:

- a. full subcontractor ownership of the Pit 9 remediation facility,
- b. processing waste for a fixed price per cubic foot,
- c. technical direction from LITCO and the DOE Idaho Operations Office (DOE-ID) only for safety related issues.

Details of the radiological hazards associated with the Pit 9 Project will be covered in a separate Board's staff report on the risks of environmental restoration activities at the INEL.

3. **Background:** Low level radioactive waste (LLW) management activities at the WERF include sizing of large contaminated wood and metal objects, compaction of various compactable wastes, and incineration of combustible wastes and eventually mixed

LLW. The facility management and operations programs were re-designed from October 1991 through November 1993. A contractor Operational Readiness Review and a DOE Operational Readiness Evaluation were completed in 1994 and sizing and compaction activities resumed in October 1994.

Pit 9 is a transuranic (TRU) waste burial pit located in the Subsurface Disposal Area of the RWMC. In the late 1960s and early 1970s, Pit 9 received TRU waste sludges from the Rocky Flats Plant and LLW from generators at the INEL. In 1989, when the INEL was placed on the National Priorities List, Pit 9 was identified as one of the sites to be remediated. Pit 9 has approved NEPA documentation, and the Pit 9 Record of Decision was signed in October 1993. The contract to remediate Pit 9 was awarded in October 1994 to Lockheed Environmental Systems and Technologies (LESAT). Preliminary design work is mostly complete, initial construction is in progress, and full scale remediation is scheduled to begin in February 1997.

4. Discussion:

- a. WERF Operations: The Board's staff received briefings from LITCO on conduct of operations, training, and procedure verification and validation. The staff also spoke with the DOE-ID facility manager, environmental engineer, and facility representative about DOE assessment of the contractor activities at WERF. Operations in progress during the visit included sizing activities and preparations for compaction. The staff observed sizing operations, a pre-job briefing for the compactor operation and spoke with several of the operators.
 1. LITCO Briefings: Information presented on the LITCO Conduct of Operations program indicated that there is appropriate management attention given to the discipline of operations at WERF. A LITCO Conduct of Operations Manual has been issued that procedurally implements the requirements of DOE Order 5480.19, *Conduct of Operations Requirements for DOE Facilities*. WERF Management has also submitted a Conduct of Operations Matrix as required by EM-25. WERF procedure verification and validation were also discussed and found by the staff to be consistent with good practices. Reviews of procedures in the field indicated that up to date revisions were annotated as such and were checked by the operators.

The WERF training program, as presented to the Board's staff, also appeared to be well designed. Operator qualification includes classroom training followed by written and oral examinations and supervisor training is more extensive than operator training. The program also includes elements of performance based training.

2. DOE Assessments: Discussions between the Board's staff and DOE line management addressed DOE assessments, evaluations, and audits of the contractor. Little guidance on this subject is provided by the upper management of DOE-ID, therefore, the development of an assessment plan is left to the best judgement of DOE facility management. In the case

of WERF, a reasonable approach has been taken. However, without additional guidance from upper management, it is unclear to the Board's staff that the requirements for independent assessment are being met as delineated in DOE Order 5700.6C, *Quality Assurance*.

- b. Pit 9 Project: LESAT, LITCO, and DOE-ID briefed the staff on the design, schedule and proposed management for the Pit 9 Remediation Project at the RWMC. As part of the contract bidding process, potential contractors were required to demonstrate processing technologies for hazardous and radioactive waste segregation, soil washing, and waste treatment using a plasma melter. Proof of Process demonstration tests were completed in December 1993 and the contract was awarded to LESAT in October 1994. Design work is still in progress, although preliminary design is essentially complete. Ground breaking for the Pit 9 Project took place in December 1994.

Technical management for the Pit 9 Project is to be the sole responsibility of LESAT. The contract for Pit 9 essentially privatizes the project such that DOE will pay LESAT for its waste processing services and LESAT will have full ownership and responsibility for the treatment facility. LITCO serves a role as a program manager for Pit 9 and will provide some oversight for the project along with DOE-ID. However, by contract, LESAT assumes all responsibility for the technical success of the project and DOE-ID and LITCO are not to interfere with technical management decisions. Intervention by DOE-ID and LITCO is to be allowed only in cases where their oversight uncovers a threat to public or worker safety.

The Board's staff believes that close safety oversight by DOE-ID may be more difficult under this arrangement, since they are removed from the project by an additional organizational layer. A review of portions of the LESAT contract show that most DOE Orders related to health and safety apply. However some safety-related orders are not required. These include, among others: 4330.4A, Maintenance Management System; and portions of 4700.1, Project Management System.

5. **Future Staff Reviews:** The staff plans to review operations at WERF including sizing and compaction operations and the planned restart of the WERF Incinerator approximately twice per year. The staff will also closely follow the further design, construction and operation of the Pit 9 Project throughout its life cycle. A staff report will be prepared on the radiological hazards associated with environmental restoration projects at INEL including Pit 9.