

JAN 14 1991

MEMORANDUM FOR: George Beveridge, Chief  
Program Implementation Branch  
Program Management, Policy Development  
and Analysis Staff, NMSS

FROM: Paul H. Lohaus, Chief  
Low-Level Waste Management Branch  
Division of Low-Level Waste Management  
and Decommissioning, NMSS

SUBJECT: FIN-3175 - TASK ORDER NO. 11, "REVIEW OF DOE'S PROCESS  
CONTROL AND QUALIFICATION TEST PROGRAMS FOR  
CEMENT-SOLIDIFICATION OF SLUDGE-WASH WASTE AT THE WEST  
VALLEY DEMONSTRATION PROJECT"

Please prepare a Standard Order for DOE Work (NRC Form 173) for the subject  
task, which is enclosed. The estimated level of work is three staff months.

(SIGNED) PAUL H. LOHAUS

Paul H. Lohaus, Chief  
Low-Level Waste Management Branch  
Division of Low-Level Waste Management  
and Decommissioning, NMSS

Enclosure: As stated

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ACNW YES      NO X

SUBJECT ABSTRACT: FIN A-3175-1 - TASK 11

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OFC :LLWM *Law* :LLWM *Law* :LLWM  
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FIN A-3175, "ANALYSES OF SPECIAL WASTE PROBLEMS"  
TASK ORDER NO. 11  
"REVIEW OF DOE'S PROCESS CONTROL AND QUALIFICATION TEST PROGRAMS  
FOR CEMENT-SOLIDIFICATION OF SLUDGE-WASH WASTE  
AT THE WEST VALLEY DEMONSTRATION PROJECT"

## 1.0 BACKGROUND

The Department of Energy (DOE) is engaged in numerous activities associated with the glassification of high-level radioactive waste being carried out at the Western New York Service Center in West Valley, NY. The West Valley Demonstration Project Act of 1980 that established the project at the Service Center requires the DOE to consult with the Nuclear Regulatory Commission (NRC) on these activities. The disposal of low-level radioactive waste produced by the project at West Valley is one such activity. DOE has already conferred with the NRC on a variety of aspects of the disposal of low-level wastes (LLW) at the Service Center, and additional topics are expected to be discussed in the future.

Recently, the NRC has agreed to review two documents that will describe the cement-solidification of sludge-wash waste at the West Valley facility. These documents will consist of the Process Control Program (PCP) that describes the system and procedures for the solidification of the waste and the Qualification Test Program (QTR) Topical Report (TR) which describes the tests to be performed on the solidified product and the acceptance criteria. These reviews are to determine whether the cement-solidified sludge-wash waste form will meet the Part 61 structural stability requirements for waste forms.

The performing organization, Brookhaven National Laboratory (BNL), has provided the NRC with technical assistance on reviews of West Valley documents under Task Order Nos. 3 and 4 of this FIN No. A-3175. This assistance has included reviewing numerous documents on solidification of the supernatant and other waste streams and the PCP for solidification of the supernatant. The NRC requires continuing assistance from BNL under this FIN. The continuing assistance includes review of additional West Valley documents on solidification of LLW, documentation of the results of the reviews, attendance at meetings where West Valley LLW solidification topics and issues are discussed, and for short-notice, short-turnaround assistance on small documents.

## 2.0 WORK REQUIRED

The performing organization (BNL) shall provide facilities, technical staff, and support personnel to perform the required work within the schedules and levels of effort defined in each of the following subtasks.

2.1 Subtask 1: Review of PCP for Cement-Solidification of Sludge-Wash Waste

BNL shall review the subject PCP for adequacy, completeness and open technical issues. Needs for additional technical information shall be identified. The results of this review shall be submitted to the NMSS PM as a draft technical letter report no later than two months after receipt of the PCP.

2.2 Subtask 2: Review of West Valley Responses to NRC PCP Comments

BNL shall review the DOE responses to the NRC comments on the "Process Control Program (PCP) for Cement-Solidification of Sludge-Wash Waste," and provide comments on the responses to the NRC. The DOE responses shall be reviewed for adequacy, completeness and open technical issues. Needs for additional information shall be identified. The bases for the review of the responses shall be those utilized in the initial PCP review plus any additional information acquired during meetings with DOE and its contractors. The results of this review shall be submitted to the NMSS PM as a draft technical letter report no later than 30 days after receipt of the DOE responses.

2.3 Subtask 3: Review of QTP TR for Cement-Solidification of Sludge-Wash Waste

BNL shall review the subject QTP TR for adequacy, completeness and open technical issues. Needs for additional technical information shall be identified. The results of this review shall be submitted to the NMSS PM as a draft technical letter report no later than two months after receipt of the QTP TR.

2.4 Subtask 4: Review of West Valley Responses to QTP TR Comments

BNL shall review the DOE responses to the NRC comments on the Qualification Test Program (QTP) TR for Cement-Solidification of Sludge-Wash Waste and provide comments on the responses to the NRC. The DOE responses shall be reviewed for adequacy, completeness and open technical issues. Needs for additional information shall be identified. The bases for the review of the responses shall be those utilized in the initial (QTP) TR review plus any additional information acquired during meetings with DOE and its contractors. The results of this review shall be submitted to the NMSS PM as a draft technical letter report no later than 30 days after receipt of the DOE responses.

2.5. Subtask 5: Preparation of Staff Evaluation Memorandum on PCP and QTP

BNL shall prepare a Staff Evaluation Memorandum documenting the review of the solidification of the sludge-wash waste. The Memorandum shall include a summary of the sludge-wash waste process, of the documents submitted to the NRC for review, of the NRC and contractor reviews, and conclusions and findings regarding the sludge-wash waste process and final waste product. Findings and conclusions shall be based on review criteria utilized during earlier reviews and resolution of the comments and concerns of NRC Staff and BNL. Open items shall be identified, and discussions should be included on any work that needs

to be accomplished in the near future, e.g., revisions to the PCP, revisions to the QTP, or additional testing. This Technical Evaluation Memorandum shall be submitted as a draft technical letter report no later than thirty (30) days after satisfactory resolution of NRC/BNL comments.

#### 2.6 Subtask 6: Other West Valley LLW Document Reviews

BNL shall review other documents describing solidification of LLW at the West Valley Nuclear Services (WVNS) facility. These documents cannot be identified now but shall include, solidification processes, systems and procedures, the LLW form, and testing of the LLW forms for structural stability. Unless otherwise agreed to, results of these reviews shall be technical letter reports submitted three (3) weeks following BNL's receipt of the report for review.

#### 2.7 Subtask 7: Meeting Attendance and Participation

BNL shall attend meetings between NRC and the DOE and its contractors, or other organizations as necessary, to discuss findings, recommendations, and conclusions resulting from the reviews of the PCP and QTP. Times and locations of meetings, and their frequency, are not known at this time. The NMSS PM shall inform BNL of the arrangements for any meetings as early as possible. Reports of such meetings by BNL personnel shall not be required unless the BNL personnel are attending a meeting without the presence of the NMSS PM or his designee.

#### 2.8 Short Turnaround Document Reviews

BNL shall provide short-notice, short-turnaround reviews of documents that are related to the solidification of LLW at the West Valley facility. These reviews will not require detail to the extent performed on documents under Subtask 6. Rather, reviews for gross error or completeness only will be required. The results of reviews shall be submitted to the NMSS PM as a draft technical letter report, unless it is agreed upon with the NMSS PM that review results may be transmitted verbally, or by letter or telefax. The schedule for review will be agreed upon with the NMSS PM with delivery of the document(s) for review.

### 3.0 PERIOD OF PERFORMANCE

The period of performance for completion of work described in this Task Order No. 11 shall extend from December 1, 1990, through December 31, 1991.

### 4.0 LEVEL OF EFFORT

The estimated level of effort for completion of this Task Order No. 11 is 3.0 staff months.