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FEB 20 1992

Mr. John P. Roberts, Acting Associate Director
for Systems and Compliance
Office of Civilian Radioactive Waste Management
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585

Dear Mr. Roberts:

SUBJECT: RESOLUTION OF QUALITY ASSURANCE OPEN ITEM NO. 3-90 "NNWSI CORE
HANDLING PROCEDURES"

The U.S. Department of Energy (DOE), Office of Civilian Radioactive Waste Management (OCRWM), letter to the U.S. Nuclear Regulatory Commission (NRC) dated November 21, 1991, transmitted 12 procedures for NRC staff review in response to NRC/DOE Open Item No. 3-90 "NNWSI Core Handling Procedures" from the Quality Assurance (QA) Open Item List. The NRC staff's interest in reviewing core handling procedures was identified in the November 18, 1985, letter from J. Linehan (NRC) to D. Vieth (DOE); this item was identified as an open item in the July 15, 1988, letter from J. Linehan to R. Stein (DOE) and in the minutes of the December 13, 1989, bimonthly NRC/DOE QA meeting (letter J. Linehan to R. Stein, February 5, 1990).

The NRC staff has reviewed the 12 Yucca Mountain Site Characterization Project (YMP) Administrative Procedures (APs) and Branch Technical Procedures (BTPs) identified by number and revision on Attachment 1, and determined that the procedural controls appear adequate to identify, document and preserve core samples. While no items were identified by the NRC staff which would preclude use of the procedures to handle core samples which may be part of the basis for future repository licensing, some procedural inconsistencies are listed on Attachment 2 that should be corrected.

Although implementation of all these procedures has not been evaluated by the NRC staff, the drilling and core handling process has been observed by the NRC staff at the Apache Leap site (letter J. Linehan to R. Stein, May 8, 1990), OCRWM Audit No. YMP-91-I-01 (letter J. Holonich to J. Roberts dated December 26, 1991) and, more recently, by the NRC On-Site Licensing Representatives at the Yucca Mountain Site (memorandum J. Gilray (NRC) to D. Brooks (NRC) dated December 18, 1991). Further, while the NRC staff will continue to monitor implementation through future audits and surveillances, the implementation which the NRC staff has reviewed to date has been generally adequate, and the Sample Management personnel are clearly using experience gained to modify the BTPs. The NRC staff now considers Open Item 3-90 from the QA Open Item List to be closed.

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Mr. John P. Roberts

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Finally, while the NRC staff is satisfied with DOE's response from a QA standpoint, there are some remaining technical questions related to drilling, transportation, and storage. For example, what temperature and humidity controls are being applied during core storage? These questions can best be resolved as part of a future activity such as an on-site visit or audit to review relevant procedures and observe drilling and core handling for the LM-300 drilling rig. OCRWM is hereby requested to provide the NRC staff with a schedule, and the relevant procedures and work packages related to drilling with the LM-300, to assist the staff in planning an appropriate follow-up activity. Finally, the November 18, 1985, NRC letter expressed a concern about procedures for qualifying existing core. If OCRWM decides to use any data from the existing core and cuttings (Section 5.3.3 of AP-6.4Q), the NRC staff will want to review and comment on the qualification procedure and process.

Sincerely,

JSI

Joseph J. Holonich, Director
Repository Licensing and Quality
Assurance Project Directorate
Division of High-Level Waste Management
Office of Nuclear Material Safety
and Safeguards

Enclosures: As stated

- cc: R. Loux, State of Nevada
- C. Gertz, DOE/NV
- S. Bradhurst, Nye County, NV
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- D. Bechtel, Clark County, NV
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CORE SAMPLE HANDLING PROCEDURES

AP-6.2Q, Rev. 0, effective 6/21/89.

AP-6.3Q, Rev. 0, effective 6/21/89 + ICN 1 effective 4/24/90.

AP-6.4Q, Rev. 0, effective 7/28/89 + ICN 1 effective 4/24/90
and ICN 2 effective 10/17/90.

AP-6.6Q, Rev 0, effective 6/21/89 + ICN 2 effective 4/24/90.

BTP-SMF-001, Rev. 1, effective 10/26/90.

BTP-SMF-002, Rev. 2, effective 8/19/91.

BTP-SMF-005, Rev. 2, effective 6/18/91.

BTP-SMF-006, Rev. 2, effective 3/14/91.

BTP-SMF-007, Rev. 0, effective 7/7/89 + ICN 1 effective 6/13/90
and ICN 2 effective 7/1/91.

BTP-SMF-008, Rev. 2, effective 7/15/91.

BTP-SMF-010, Rev. 0, effective 3/14/91.

BTP-SMF-013, Rev. 0, effective 9/20/91.

PROCEDURAL INCONSISTENCIES WITH CORE SAMPLE HANDLING PROCEDURES

- o AP-6.2Q, BTP-SMF-001, BTP-SMF-007 and BTP-SMF-010 still identify the Sample Management organization as part of the Technical and Management Support Services organization, rather than as part of the Yucca Mountain Site Characterization Project Office.
- o AP-6.6Q describes the Exploratory Studies Facility as having vertical access shafts excavated by drill and blast methods, rather than ramps excavated by tunnel boring machines.
- o AP-6.2Q does not require USGS personnel to be present during drilling and core sample processing operations, although the USGS is still responsible for establishing requirements for the processes and developing the final core log.
- o AP-6.2Q, Section 5.5 calls for the core to be photographed after the core staging process is complete. The NRC staff suggested that the core be photographed immediately after the inner core barrel containing the core is opened in the May 8, 1990 letter. BTP-SMF-008 requires videotaping core before taking samples.
- o Although AP-6.2Q, Section 5.5 references BTP-SMF-008 and requires compliance with such, the two procedures are internally inconsistent with regard to core handling procedures.
- o BTP-SMF-010 references BTP-SMF-004, which Shelor's letter to Linehan dated March 25, 1991, says was incorporated into BTP-SMF-002.