



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

Reply to:
301 E. Stewart Ave., Rm. 203
Las Vegas, Nevada 89101
Tel: (702) 388-6125

December 8, 1992

TO: Paul T. Prestholt, Sr. Project Manager
FROM: John W. Gilray, Sr. On-Site Licensing Representative
SUBJECT: ARCHIVING CORE

In regards to Archiving of Core, I have the following summary:

1. Archiving of core was required in BTP-004, vintage March 14, 1990 and July 7, 1990. (Ref. Sec. 3.6). NRC (Rockville) had received a copy of this somehow.
2. Since then a formal transmittal of core handling procedures was issued to NRC, (ltr. OCRWM to NRC dated November 21, 1991). BTP-004 procedure was not included in this submittal since it was canceled and superceeded by BTP-SMF-002, Rev. 2. BTP-SMF-002 did not require archiving of core other than cuttings.
3. NRC responded to this submittal by comments expressed in ltr. Holonich to Roberts dated February 20, 1992.
4. OCRWM in turn responded to the 2/20/92 ltr by their ltr. of April 10, 1992. Roberts to Holonich.
5. Neither letter addressed Archiving.
6. Since these events, BTP-SMF-002 has been revised to a Rev. 3. This vintage did not change archiving controls, (i.e., procedure still addresses only archiving of cuttings).

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ADD: Charlotte Abrams

ltr. Encl.

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Department of Energy
Yucca Mountain Site Characterization
Project Office
P. O. Box 98608
Las Vegas, NV 89193-8608

WBS 1.2.3
QA: N/A

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J. Russell Dyer, Director, Regulatory & Site Evaluation Division, YMP, NV

ARCHIVE CORE

There is no designated "archive core" as such in the Yucca Mountain Site Characterization Project collection.

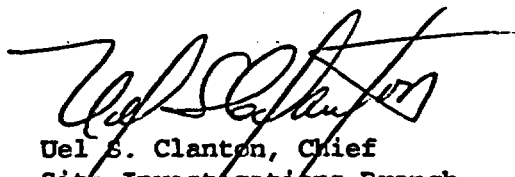
The paragraphs that follow discuss some of the reasons that archiving core is not required.

1. Enclosure 1 is a partial listing of potential Principal Investigator (PI) requests for core from the G, SD, and UZ boreholes to be drilled during site characterization. The PIs have shown interest in only 21 to 25 percent of the G core, 38 to 54 percent of the SD core, and 25 to 39 percent of the UZ core. Some 75 to 79 percent of the G core, 46 to 62 percent of the SD core, and 61 to 75 percent of the UZ core remains to be allocated at some later date.
2. Procedures presently in place require video tapes of the the core prior to processing and after the core has been removed for the PI. A video record exists for all "new" core; additionally, a lithologic log prepared by the Sample Management Facility/Sample Overview staff exists for all core.
3. Enclosure 2 is a print out of core usage from previously drilled boreholes. Core specimens removed from USW G-4, for example, total some 13.4 percent; only some 403 of 3001 feet of core have been removed for study. Some 86 percent of the core remains for future study if required.
4. The Sample Overview Committee has discussed the need for archive core. In the opinion of the SOC, to be effective a 100 percent split, i.e., one third archive, two thirds sample, should be made. The HQ core is too small to split for archive and have samples remaining of sufficient size for some PIs. Additionally, some hydrologic, geochemistry, and age dating studies would be compromised if the core was sawed for archiving. The considered opinion of the SOC was to rely on the Quality Assurance (QA) process; if unacceptable, redrill the borehole to collect additional core.

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5. A second borehole could be drilled to acquire core from a specific interval if suitable core did not remain in the collection. The upper interval could be hammer drilled quickly; a coring bit would then be installed to acquire the needed core. Note that even though we are using state-of-the-art techniques to package core for hydrological, geochemical and dating studies, we have concern as to our ability to maintain core in a pristine state for ten or more years. The hydrological, geochemical, and aged dating studies are considered to have the highest probability for additional study.
6. Finally the U.S. Department of Energy QA program has been approved by the U.S. Nuclear Regulatory Commission. The QA program is considered to provide adequate documentation for all samples that are being tested/analyzed. The QA program should mitigate any need for replicate samples and the need to repeat the test/analysis at some later date.

If you have any questions, please call me at 794-7943.



Uel S. Clanton, Chief
Site Investigations Branch
Regulatory & Site Evaluation Division

RSED:USC-1156

Enclosures:

1. Listing of Core Requests
2. List of Removed Specimens

cc w/o encls:

J. F. Whelan, USGS, Denver, CO
S. L. Bolivar, LANL, Los Alamos, NM
C. A. Rautman, SNL, 6315, Albuquerque, NM
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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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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,



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
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M. Baughman, Lincoln County, NV
D. Bechtel, Clark County, NV
D. Weigel, GAO
P. Niedzielski-Eichner, Nye County, NV
C. Thistlethwaite, Inyo County, CA
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