



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

AUG 28 1989

Received-w/Ltr Dated 12/11/89

ACTION  
CC: Donson / Gertz  
CC: Wilmore / Neys  
CC: Crawley / Murphy  
CC: Burkhardt  
CC: Blanchard  
CC: Vattimo / Scannell  
CC: Gora / Nolek - SAIC  
CC: Fruell / Nelson  
CC: Raiser - w/o ENCE  
CC: Robison

REC'D IN WMPO

9-1-89

Mr. Ralph Stein, Associate Director for  
Systems Integration & Regulations  
Office of Civilian Radioactive Waste  
Management  
U. S. Department of Energy RW 30  
Washington, D.C. 20545

Dear Mr. Stein:

The Nuclear Regulatory Commission (NRC) through the Center for Nuclear Waste Regulatory Analyses (CNWRA) is presently conducting geochemical experimentation and modeling under its Geochemistry Research Project. To proceed expeditiously with those research activities, NRC has an immediate need for certain DOE computer tapes and technical procedures.

The first item needed is the latest officially released standard version of the geochemical modeling package EQ3/6 and associated documentation. The DOE organization responsible for this code is the Geochemical Modeling Group at Lawrence Livermore National Laboratory (LLNL). NRC needs the EQ3/6 code and associated data bases furnished on a magnetic 9-track tape with standard characteristics (e.g., EBCDIC, 1600 bpi, blocked, or other specified characteristics).

NRC also needs the DOE contractor technical procedures listed in the Enclosure to this letter for potential uses in confirmatory and exploratory experiments which the CNWRA conducts in the Geochemistry Research Project. All of the technical procedures requested were listed in Chapter 8 of the Site Characterization Plan (SCP) for the Yucca Mountain, Nevada Site. Priorities are noted in the Enclosure for access to the requested procedures, in the event that they cannot all be obtained at this time. As we explained in a telephone discussion with Gordon Appel of your staff, since NRC is seeking these procedures for information rather than for regulatory review, preliminary or draft procedures would be acceptable for its purpose if final versions are not available. In such instances, NRC would request that updated procedures be transmitted when available to replace the earlier versions sent to NRC.

In view of NRC's pressing need for the items described in this letter, I request that DOE provide them to NRC as soon as practicable. In the event that the items are not readily available, please inform me of this situation promptly and provide an estimate of when those items will be available.

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If you have any questions regarding the requests in this letter, please contact King Stablein (FTS 492-0446) of my staff.

Sincerely,



John Linehan, Director  
Repository Licensing & Quality  
Assurance Project Directorate  
Division of High-Level Waste Management

Enclosure:

As stated

cc: R. Loux, State of Nevada  
D. Bechtel, Clark County, NV  
M. Baughman, Lincoln County, NV  
S. Bradhurst, Nye County, NV  
C. Gertz, DOE-NV/YMPO

## TECHNICAL PROCEDURES REQUESTED

| Technical Procedure* |   |           |            |
|----------------------|---|-----------|------------|
| Number               | Title   | Date      | Priority** |
| TWS-CNC-DP-02,R3     | Quality control in counting radionuclides                                       | 3 Jan 84  | 1          |
| TWS-CNC-DP-05,R1     | Sorption, desorption ratio determination of geologic materials by batch methods | 30 Aug 82 | 1          |
| TWS-CNC-DP-15,R1     | Crushed rock column studies   | 31 Aug 82 | 1          |
| TWS-ESS-DP-03,R2     | Nevada Test Site core petrography procedure                                     | 24 Nov 82 | 1          |
| TWS-ESS-DP-07,R2     | Microprobe operating procedure  | 5 Sep 86  | 2          |
| TWS-ESS-DP-16,R2     | Siemens x-ray diffraction procedure   | 19 May 86 | 1          |
| TWS-ESS-DP-25,R1     | Clay-mineral separation and preparation for x-ray diffraction analysis          | 3 Apr 86  | 1          |
| TWS-ESS-DP-28,RO     | Nevada Test Site fracture filling studies procedure                             | 9 Sep 85  | 2          |
| TWS-ESS-DP-111,RO    | X-ray fluorescence procedure  | TBD       | 1          |
| TWS-INC-DP-26,RO     | Preparation of aqueous standards for analysis of water samples                  | 1 June 83 | 1          |
| TWS-INC-DP-27,RO     | Trace element determination for analysis of water samples                       | 1 June 83 | 1          |

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\* Technical Procedures are identified as in Chapter 8 of the SCP.

\*\* Priority 1 - immediate need  
 Priority 2 - need within 6 months

Technical Procedure

| Number                     | Title  | Date                          | Priority |
|----------------------------|--|-------------------------------|----------|
| TWS-INC-DP-35,R0<br>CR-006 | pH measurements  | 28 May 85<br>and<br>26 Aug 86 | 1        |
| TWS-INC-DP-45,R0           | Analysis of strong acid<br>anions by ion<br>chromatography                         | 25 May 85                     | 1        |
| TWS-INC-DP-62,R0           | Nevada Test Site bulk<br>water samples   | 30 Jan 87                     | 1        |
| TWS-INC-DP-63,R0           | Preparation of Nevada<br>Test Site core samples<br>for crushed rock<br>experiments | 20 Mar 87                     | 1        |
| TWS-MSTQA-QP-14,R1         | Research and development<br>(experimental) procedures                              | 19 May 86                     | 1        |
| TWS-MSTQA-QP-15,R0         | Nevada Nuclear Waste<br>Storage Investagations<br>calibration                      | 1 Aug 86                      | 1        |
| NWM-USGS-DP-04,R4          | Thin-section preparation   | 8 Jul 86                      | 1        |
| NWM-USGS-DP-06,R2          | Carbon coating of samples<br>with DV-502 vacuum                                    | 5 Feb 86                      | 1        |
| NWM-USGS-DP-07, R2         | Microprobe operating<br>procedure  | 8 Jul 86                      | 2        |
| NWM-USGS-DP-11,R0          | Procedure for x-ray<br>fluorescence analysis                                       | 14 Jan 88                     | 1        |
| NWM-USGS-DP-16,R2          | Siemens x-ray diffractometer<br>procedure  | 2 Feb 86                      | 1        |
| NWM-USGS-DP-20,R1          | Preparation of fused-glass<br>beads fron rock powder                               | 24 Nov 82                     | 1        |
| NWM-USGS-DP-24,R0          | Alignment of Siemens<br>diffractometer   | 24 Nov 82                     | 1        |

Technical Procedure

| Number             | Title  | Date      | Priority |
|--------------------|--|-----------|----------|
| NWM-USGS-DP-25,R1  | Clay-mineral separation and preparation for x-ray diffraction  | 5 Feb 86  | 1        |
| NWM-USGS-DP-50,RO  | Sputter coating with gold  | 3 Apr 86  | 1        |
| NWM-USGS-DP-51,RO  | Mettler H80 samples-weighing procedure   | 5 Feb 86  | 1        |
| NWM-USGS-DP-52,RO  | Making fused discs with Junior orbit shaker  | 5 Feb 86  | 1        |
| NWM-USGS-DP-53,RO  | Pulverizing with Spex 8500 Shatterbox  | 5 Feb 86  | 1        |
| NWM-USGS-DP-55,RO  | Rock-splitting with 50-ton hydraulic press   | 5 Feb 86  | 2        |
| NWM-USGS-DP-56,RO  | Brinkman automated grinding procedure  | 5 Feb 86  | 1        |
| NWM-USGS-DP-101,RO | Sample identification and control for mineralogy and petrology studies   | 17 Apr 87 | 1        |
| NWM-USGS-DP-112,RO | Operating instruction for International Scientific Instrument Model DS-130 scanning electron microscope and TRACOR northern series II x-ray analyzer | 27 Jun 88 | 1        |
| NWM-USGS-DP-113,RO | Temperature determination from fluid inclusion studies   | 27 Jan 88 | 2        |
| NWM-USGS-GCP-02,R1 | Labeling, identification and control of samples for geochemistry and isotope geology   | 20 Jun 87 | 1        |

Technical Procedure

| Number             | Title   | Date      | Priority |
|--------------------|---|-----------|----------|
| NWM-USGS-GCP-07,R1 | Mineral separation for geochemistry and isotopic analysis             | 27 May 88 | 1        |
| NWM-USGS-GCP-14,RO | Extraction and recovery of water from calcite-hosted inclusion fluids | 29 Apr 88 | 2        |
| NWM-USGS-GP-01,RO  | Geologic Mapping  | 1 Mar 83  | 1        |
| NWM-USGS-GP-14,RO  | Measurement of dry bulk-rock densities from paleomagnetic samples     | 25 Apr 86 | 1        |
| NWM-USGS-GP-27,R1  | Trench wall and natural outcrop sampling for coordinated studies      | 7 Jun 88  | 1        |
| NWM-USGS-HP-91,RO  | Collection and field analysis of surface-water samples                | 7 Oct 87  | 1        |
| NWM-USGS-QP-04,R2  | Handling, storage, and shipping of samples                            | 2 Apr 85  | 1        |
| NWM-USGS-QP-14,RO  | One-time research and development work                                | TBD       | 1        |