**Department of Energy**
Washington, DC 20585

DEC 24 1992

Mr. Joseph J. Holonich, Director
Repository Licensing & Quality Assurance
Project Directorate
Division of High-Level Waste Management
Office of Nuclear Material Safety
and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Holonich:

Enclosed with this letter is a controlled copy of Study Plan 8.3.4.2.4.3 prepared by the U.S. Department of Energy (DOE) for the Yucca Mountain site. The study plan numbers correspond to the same numbers used in the Site Characterization Plan (SCP) for the Yucca Mountain site.

| Number | Title |
|---|---|
| 8.3.4.2.4.3 | "Characterization of the Geomechanical Attributes of the Waste Package Environment" |

DOE has reviewed the study plan for consistency with the content requirements for study plans, as given in Attachment B to the Summary of the DOE/U.S. Nuclear Regulatory Commission (NRC) meeting on the Level-of-Detail for the SCP (May 7-8, 1986). DOE is submitting this plan to NRC as agreed to in the meeting.

As discussed during the DOE/NRC meeting (December 15, 1988) on study plans, DOE has decided to control preparation and review of study plans as a quality activity. This study plan was reviewed under current Yucca Mountain Site Characterization Project Office (YMPO) and U.S. Department of Energy/Headquarters quality assurance (QA) procedures.

Study plans prepared under current procedures do not require detailed information on QA requirements. To satisfy the May 7-8, 1986, agreement to provide specific QA requirements, current study plans indicate that applicable QA criteria will be specified in Yucca Mountain Site Characterization Project QA Grading Reports, which are issued as separate controlled documents.

It should also be noted that there may be some inconsistencies in the milestone report titles and schedules given in this study plan and those in the SCP. Study plans, in general, represent a further evolution of the study in the areas related to schedules



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and milestones relative to the SCP, and as such, represent DOE's current plans.

DOE wishes to call to NRC's attention Site Characterization Analysis (SCA) Question 17, which was directed to Study Plan 8.3.4.2.4.3. Enclosure 2 provides a discussion of how this open item is addressed in the study plan.

The Document Transmittal/Acknowledgement Record for your controlled copy of the study plan should be signed and dated and returned to the Document Control Center in Las Vegas, Nevada.

If you have any questions, please contact Mr. Chris Einberg of my office at 202-586-8869.

Sincerely,

Linda J. Desell

for John P. Roberts
Acting Associate Director for
Systems and Compliance
Office of Civilian Radioactive
Waste Management

Enclosures:
1. Study Plan 8.3.4.2.4.3
2. Relation of Study Plan 8.3.4.2.4.3, to NRC Open Items

as enclosure on Draft

cc: w\enclosures 1 and 2
Alice Cortinas, CNWRA, San Antonio, TX

cc: w\enclosure 2
C. Gertz, YMPO
R. Loux, State of Nevada
T. Hickey, Nevada Legislative Commission
M. Baughman, Lincoln County, NV
J. Bingham, Clark County, NV
B. Raper, Nye County, NV
P. Niedzielski-Eichner, Nye County, NV
G. Derby, Lander County, NV
P. Goicoechea, Eureka, NV
C. Schank, Churchill County, NV
F. Mariani, White Pine County, NV
V. Poe, Mineral County, NV
E. Wright, Lincoln County, NV
J. Pitts, Lincoln County, NV
R. Williams, Lander County, NV
J. Hayes, Esmeralda County, NV
B. Mettam, Inyo County, CA
C. Abrams, NRC

RELATION OF STUDY PLAN 8.3.4.2.4.3 TO NRC OPEN ITEMS

Question 17

1. How Study Plan 8.3.4.2.4.3 addresses the effects of radiation on near-field rock mechanical properties.

- The rationale for the Study Plan and its component activities include mention of radiation effects (Section 2.0, Paragraph 2; Section 2.3, Third indented paragraph). The number of radiation dependent tests is noted in Table 2-1. A discussion of the number of radiation dependent tests in included in the final paragraph of Section 2.2.1. The radiation dependent tests are discussed in detail in Sections 3.3.1 and 3.3.2.

ENCLOSURE 2