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Distribution:

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(Return to W-11, 323-85)

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RE Browning ✓  
MBell ✓  
JBunting ✓  
MKnapp ✓  
JGreeves ✓  
HMiller ✓  
RBoyle ✓  
SCoplan ✓  
JLinehan ✓  
JKennedy ✓  
RCook ✓  
PPrestholt ✓  
TVerma ✓  
JGiarratana ✓

KStablein & r/f  
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Dr. Donald L. Vieth  
Director  
Waste Management Project Office  
U. S. Department of Energy  
Nevada Operations Office  
P. O. Box 14100  
Las Vegas, NV 89114-4105

Dear Dr. Vieth:

As part of the process of informal, pre-licensing consultation between NRC and DOE staffs, members of the NRC staff and NRC consultants undertook a review of NNWSI hydrogeology data and procedures from July 24 to 27, 1984, at the USGS offices in Denver, Colorado.

Such data reviews allow the NRC to conduct its independent assessment of the quality and reliability of data that the DOE has gathered/generated in support of its potential license application. The scope of material reviewed includes the data itself, procedures used to gather and process the data, and documentation that the procedures have actually been used. A data review is solely an information gathering activity that focuses on examination of data by technical specialists. It includes briefings by investigators but involves no consultation with DOE or DOE contractors on interpretation, adequacy, or validity of data, nor is it in any sense a review of DOE's site characterization program or plans. Such matters are instead addressed at the technical meetings that are also a part of the pre-licensing consultation process conducted under the NRC/DOE Procedural Agreement.

During this visit and in my September 6, 1984, letter transmitting to you the Hydrogeology Data Review Summary, the NRC agreed to provide the DOE with comments concerning the items reviewed after receiving copies of data requested during that visit. We have now received almost all of the data requested and have completed a review of that data. The enclosure to this letter contains our comments on that data and on the data reviewed during the site visits.

Several points deserve emphasis:

1. During the data review, it appeared that the USGS had no documented procedures for collecting, reducing, and analyzing data. This appearance stemmed from an absence of procedures or references to procedures in the data files reviewed. The NRC staff did not find notable lacks in the quality of data reviewed as we were able to have it presented to us by the investigators; the point is that without a written record of the procedures used in data collection it is impossible for third parties to draw conclusions about data quality and reliability. Subsequent to the Hydrogeology Data Review (during the Geology/Geophysics Data Review two

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months later) the USGS QA specialist showed us the officially approved USGS QA procedures, which included a number of hydrology procedures. Based on lessons learned in licensing of nuclear power plants (see NUREG-1055, Improving Quality and the Assurance of Quality in the Design and Construction of Nuclear Power Plants, for a discussion of such experiences), the NRC considers it imperative that the next step, getting the investigator to use those procedures and to document the use of the procedures in the data files, be implemented as rapidly as possible to assure that data being gathered now will not be subject to challenge with respect to its pedigree at the time of licensing. The need for an acceptable QA program is discussed further in our comments to the DOE on the draft Mission Plan for the Civilian Radioactive Waste Management Program (Enclosure 2 to Palladino letter to Rusche dated July 31, 1984, p. 2-3). Guidance on how the NRC will review DOE's QA program descriptions has been provided to the DOE in the NRC Review Plan Quality Assurance Programs for Site Characterization of High Level Nuclear Waste Repositories (Enclosure 1 to Browning letter to Bennett dated June 29, 1984).

2. A number of concerns expressed in the attached comments focus upon the possibility that the eventual groundwater data base that DOE would intend to use for licensing may be compromised by the collating and integrating of many data sets, some of which may not be of the same demonstrably high quality as that collected under standardized USGS procedures. This could occur if non-USGS personnel collect data using procedures other than the USGS's (Enclosure 1, p. 5, TAM International Drill Stem Test); it could also occur if USGS data originally collected for various purposes (some of which may not require the same level of QA) were to be combined in one data base (Enclosure 1, p. 6, regional groundwater chemistry data). The usefulness of the data base could be undercut by uncertainty about the uniformity in quality of the data included.
  
3. Another staff concern is the current lack of a written procedure for documenting decisions regarding technical reliability of data. When, for example, an investigator chooses to omit the results from 11 of 17 slug tests in his published report (see p. 4 of the attached NRC comments), it is necessary that the technical bases for such decisions be fully documented, that the procedure for documenting such decisions be established prior to running the tests and that the rejected data be made available along with the accepted data. To proceed otherwise could cast doubt on the reliability of the reported data. This is true even though in the case cited above the NRC found that the investigator had technically sound reasons for his omissions.

\* see previous concurrence

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NAME	:KStablein*	: SCoplan*	:Kennedy	:Linehan	:MFliegel*	:HJMiller*	:

We hope that data reviews and follow-up comments such as those provided herein are a useful mechanism for NRC/DOE interaction and identification of areas where necessary improvements can be achieved prior to licensing. We would appreciate your informing us on actions being taken to respond to our concerns; furthermore, we anticipate resolution of comments raised herein through follow-up technical meetings in the hydrogeology/hydrology areas after we complete the draft EA reviews. Enclosure 1 identifies a number of specific topics for follow-up.

If you have any questions concerning these points or the comments attached, please contact Jeff Pohle (FTS 427-4725) or King Stablein (FTS 427-4611).

Sincerely,

**"ORIGINAL SIGNED BY"**

Seth M. Coplan, Section Leader  
NTS Project Section  
Repository Projects Branch  
Division of Waste Management  
Office of Nuclear Material Safety  
and Safeguards

Enclosures:

- 1. Pohle to Stablein Memo of 12/21/84
- 2. Letter (No. 48) Williams to Pohle of 9/7/84
- 3. Letter (No. 49) Williams to Pohle of 9/7/84
- 4. Letter Geotrans to Pohle of 8/8/84

cc: W. Dudley, USGS  
W. Purcell, DOE  
R. Williams, Williams and Associates, Inc.  
J. Mercer, Geotrans, Inc.

\* see previous concurrence

*Enclosures Are Already in File*

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cc: W. Dudley, USGS  
R. Williams  
J. Mercer

*DO NOT  
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