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

JUN 28 1995

Joseph J. Holonich, Chief
High-Level Waste and Uranium
Recovery Projects Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555

RESPONSE TO U.S. NUCLEAR REGULATORY COMMISSION (NRC) REQUEST FOR ACCESS TO DATA, PROCEDURES, AND SAMPLES FROM THE U.S. DEPARTMENT OF ENERGY'S (DOE) SITE CHARACTERIZATION VOLCANISM PROGRAM (SCPB: N/A)

References: (1) Ltr, Bell to Brocoum, dtd 4/21/95
(2) Ltr, Brocoum to Holonich, dtd 4/17/95

The NRC recently proposed an in-field verification (IFV) of DOE's volcanism program (Reference 1). Based on statements regarding the need for this IFV as part of the NRC's new vertical slice approach, there appears to be some misunderstanding regarding the overall status of DOE's volcanism program and plans for resolution of the volcanism issue. The characterization phase of the investigations is nearing completion, and DOE believes it has accumulated sufficient information to describe the nature of Quaternary volcanism at Yucca Mountain. The emphasis of the investigations is now shifting to determination of the effects of potential igneous activity. Details of the present status of DOE's magmatism/volcanism program and plans for resolution of the volcanism issue are summarized in Enclosure 1.

After reviewing NRC's proposal (Reference 1), DOE is concerned that the planned IFV is premature. There are two reasons for this concern:

1. Much of the information sought by NRC, although collected in past years, will be documented and entered into our Technical Data Base over the next year. DOE has developed a schedule for interactions and preparation of reports (enclosures 2 and 3) intended to support resolution of the volcanism issue and provide the information NRC is seeking in the IFV. DOE intends this effort to culminate with submittal of relevant License Application Annotated Outline sections in September 1996.

110043

YMP-5

102.8
WM-11
NH03

In parallel, DOE intends to continue with resolution of open items related to volcanism and, as part of this effort, will provide both responses to comments on study plans and revisions to study plans as indicated in our June 19, 1995, letter from Brocoum to Holonich. The technical exchange on tectonics and geophysics planned for late 1995 will provide an opportunity for further discussion of information regarding the probability and consequences of volcanism. DOE also expects to conclude the expert elicitation on Probabilistic Volcanic Hazard Assessment and issue a report describing the results of this assessment by the end of February 1996.

2. The interactions and project activities that would be necessary to support the IFV would adversely impact ongoing and scheduled activities that support the products and interactions noted in the first reason.

DOE therefore suggests that the planned IFV be postponed until October 1996 to allow time for NRC review of the information that will be provided over the next 12 to 15 months.

In the meantime, DOE is compiling the information and material requested by the NRC in Reference 1. DOE intends to work within the provisions of the DOE-NRC Procedural Agreement and the Project-Specific Agreement to provide the data requested once the request has been clarified. Details on specific difficulties or the need for clarification of certain items, the status of the information, and our questions about individual items requested by NRC are described in Enclosure 4.

We believe additional interactions are required to further define NRC's vertical slice approach in order to help develop a revision to the Project-Specific Agreement before detailed planning is conducted for any future review or IFV. A protocol is needed to describe how the scope and timing of the reviews are established, outline the respective responsibilities of DOE and NRC, and minimize the potential impacts on existing DOE activities while providing appropriate and timely information for NRC review.

The DOE also intends to respond to SCA open items concerning magmatism/volcanism and provide responses to study plan comments for which DOE has yet to respond. The DOE notes that there may be some discrepancies between the number of items that we believe remain open versus the number that the NRC is tracking as open items. To facilitate developing responses to the open items, we request a list of the open items which the NRC is tracking relative to this issue.

We look forward to your response, and if you have any questions, please contact either me at (702) 794-7971, or April V. Gil of the Licensing Team at (702) 794-7622.

Stephan J. Brocoum
Assistant Manager for
Suitability and Licensing

AMSL:TWB-3496

Enclosures:
1. Status of the Volcanism Program and Plans for Volcanism Issue Resolution
2. DOE Volcanism Schedule for FY 1995 and 1996
3. Table of Volcanism Activities and Schedule for Remainder of FY 1995 through Mid-FY 1997
4. Status of Information Items Requested by the NRC in Reference 1

cc w/encls:
L. H. Barrett, HQ (RW-2) FORS
R. A. Milner, HQ (RW-30) FORS
A. B. Brownstein, HQ (RW-36) FORS
C. E. Einberg, HQ (RW-36) FORS
Samuel Rousso, HQ (RW-40) FORS
W. D. Barnard, NWTRB, Arlington, VA
R. R. Loux, State of Nevada, Carson City, NV
Bob Price, State of Nevada, Carson City, NV
Cyril Schank, Churchill County, Fallon, NV
D. A. Bechtel, Clark County, Las Vegas, NV
J. D. Hoffman, Esmeralda County, Goldfield, NV
Eureka County Board of Commissioners, Eureka, NV
B. R. Mettam, Inyo County, Independence, CA
Lander County Board of Commissioners, Battle Mountain, NV
Jason Pitts, Lincoln County, Pioche, NV
V. E. Poe, Mineral County, Hawthorne, NV
L. W. Bradshaw, Nye County, Tonopah, NV
Florindo Mariani, White Pine County, Ely, NV
P. A. Niedzielski-Eichner, Nye County, Chantilly, VA
William Offutt, Nye County, Tonopah, NV
R. I. Holden, National Congress of American Indians, Washington, DC
Elwood Lowery, Nevada Indian Environmental Coalition, Reno, NV
R. J. Goffi, Weston, Washington, DC
P. M. Dunn, M&O, Vienna, VA
D. F. Fenster, M&O, Vienna, VA
P. M. Krishna, M&O, Washington, DC
C. L. Sisco, M&O, Washington, VA
L. R. Hayes, USGS, Las Vegas, NV
R. W. Craig, USGS, Las Vegas, NV
J. S. Stuckless, USGS, Denver, CO
J. A. Canepa, LANL, Los Alamos, NM
B. M. Crowe, LANL, Las Vegas, NV
F. V. Perry, LANL, Los Alamos, NM
Greg Valentine, LANL, Los Alamos, NM
T. R. Crump, M&O, Las Vegas, NV
S. E. LeRoy, M&O, Las Vegas, NV
M. A. Lugo, M&O, Las Vegas, NV
S. T. Nelson, M&O, Las Vegas, NV
S. P. Nesbit, M&O, Las Vegas, NV
S. B. Jones, YMSCO, NV
D. R. Williams, YMSCO, NV
J. C. Nesbit, YMSCO, NV
J. T. Sullivan, YMSCO, NV
S. J. Brocoum, YMSCO, NV
R. V. Barton, YMSCO, NV
A. V. Gil, YMSCO, NV
R. G. Hawe, YMSCO, NV

Enclosure 1

Status of the Volcanism Program
and Plans for Issue Resolution

Status

- The Los Alamos Volcanism Status Report (LA-12908-MS) was distributed to NRC on April 17, 1995 (Reference 2). This report summarizes the results of about 15 years of magmatism/volcanism studies. In addition, Los Alamos staff is developing a technical data reference report (see enclosure 3) which describes the data reported in the Los Alamos Volcanism Status Report and provides annotations specifying where the data items are located.

- Field studies of eruptive effects and preliminary subsurface effects studies are expected to be completed by the end of FY 1995. Analysis of data from the eruptive effects studies should be completed by mid-FY 1996. Modeling of analogs and long-term effects should be completed by late FY 1997.

- The DOE is conducting an expert elicitation on Probabilistic Volcanic Hazard Assessment (PVHA) to assess the probability of a magmatic event (intrusive or extrusive) disrupting the potential repository at Yucca Mountain and to quantify the uncertainty associated with this assessment. This study is about half completed, and the final report is expected by the end of February 1996 (enclosures 2 and 3).

Based on this information, it is apparent that most of the field investigations called for in the Site Characterization Plan's volcanism program have been completed. Substantial work has been done in recent years to evaluate the probability of magmatism in the vicinity of Yucca Mountain using a variety of alternative models. Analyses have been performed to determine the sensitivity of the probability of disruption of the proposed repository to various magmatic/volcanic processes. Field investigations and calculations completed during the last 15 years have been summarized in the Volcanism Status Report. An independent review of the geophysical investigations related to magmatism/volcanism has recently been completed as well. That review indicated that the data is in good order to support the evaluation of the existence of buried intrusions in the region surrounding Yucca Mountain. Preliminary evaluation of the seismic reflection/refraction survey across Crater Flat showed no evidence of deep crustal bright spots that could indicate the presence of a crustal magma body.

DOE agrees with the major conclusions of the Los Alamos Volcanism Status Report:

- The recurrence probability of silicic volcanism is so low that it is not a significant issue for the potential repository at Yucca Mountain.

- The current estimates of the annual probability of future basaltic volcanic disruption of the repository are very low (approximately 10^{-8} events per year, or about 1 chance in 10,000 during the 10,000-year period of required waste isolation).

- The uncertainty in probability estimates is sufficiently great that no classes of basaltic volcanic scenarios can be excluded from consideration with respect to their contribution to the cumulative release from the waste isolation system.

Emphasis in the volcanism program has shifted to the evaluation of the possible effects of igneous activity on the proposed repository system under Study Plan 8.3.1.8.1.2 (Physical Processes of Magmatism and Effects on the Potential Repository). The basic goals of this study are:

- Determine the amount of waste that could reach the surface if an eruption penetrated the proposed repository.

- Describe the processes and constraints that would determine the effects on waste isolation of magmatic intrusion at or near the proposed repository.

- Provide the physical framework (characteristics of igneous features and processes) for Quaternary magmatism/volcanism near Yucca Mountain as needed to constrain event probabilities and effects.

- Provide information to performance assessment to link processes and effects to consequence analysis.

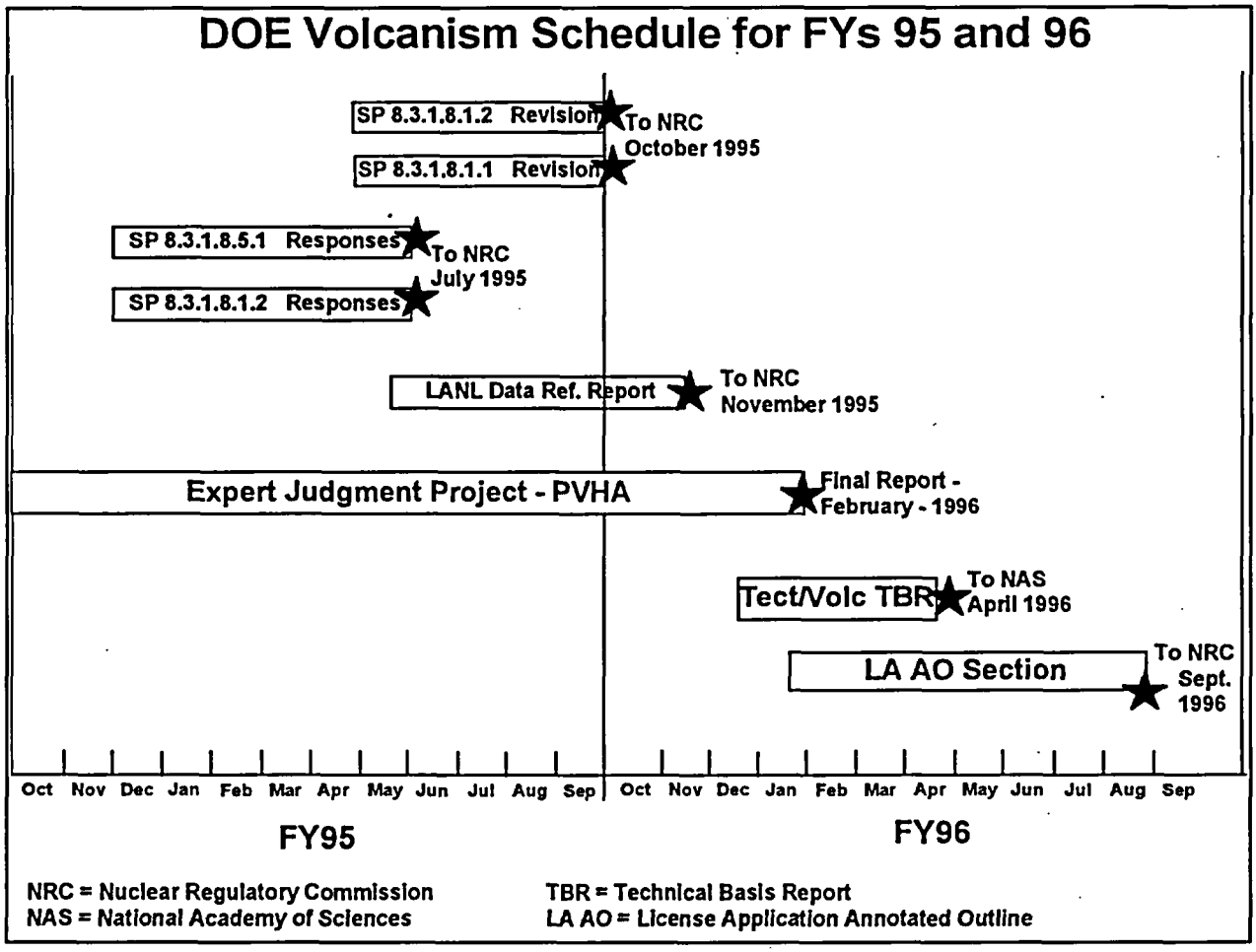
Plans for Resolution of the Volcanism Issue

Data in the Los Alamos Volcanism Status Report provides input for the Technical Basis Report on Tectonics scheduled for completion in April 1996, for the License Application Annotated Outline (LA AO) sections on volcanism that will be provided to the NRC in September 1996, and for Total System Performance Assessment (TSPA) 1997, which is currently scheduled to be completed by mid-calendar year 1997 (enclosures 2 and 3). Technical conclusions and supporting data on the probability and characteristics of igneous activity at and near Yucca Mountain will be presented in the LA AO sections on volcanism. The DOE anticipates that TSPA 1997 will provide an estimate of the probability of release of radionuclides to the accessible environment as well as estimates of the sensitivity of the probability of release to a variety of parameters including the volcanic recurrence rate and the probability of disruption. The

DOE expects this information to provide the basis for compliance arguments involving the potentially adverse condition "evidence of igneous activity since the start of the Quaternary Period" (10 Code of Federal Regulations 60.122[c][15]).

We are proceeding with our plan to resolve the magmatism/volcanism issue by providing the relevant information in the LA AO. The DOE's goal is to provide, directly or by reference, sufficient information in the LA AO to support evaluation by the NRC in a Prelicensing Evaluation Report. Specifically, DOE intends to submit LA AO sections in September 1996 (enclosures 2 and 3) that reflect the results from magmatism/volcanism studies completed through mid-FY 96. DOE will request a Prelicensing Evaluation Report on the methodology and results of the volcanism probability studies presented in this LA AO submittal. DOE intends to provide information from the volcanic effects studies and TSPA 1997 in subsequent, iterative revisions of the LA AO.

ENCLOSURE 2



DOE Volcanism Schedule for Fiscal Years 1995 and 1996

Enclosure 3

Table of Volcanism Activities and Schedule for Remainder of Fiscal Year 1995 Through Mid-Fiscal Year 1997	
Activity	**Scheduled Date**
Responses to comments on Study Plans 8.3.1.8.1.2 and 8.3.1.8.5.1	July 1995
Revisions to Study Plans 8.3.1.8.1.1 and 8.3.1.8.1.2	October 1995
Volcanism Technical Data Reference Report	November 1995
Technical Exchange on Tectonics and Geophysics	November 1995
Tectonics Technical Basis Report	April 1996
Probabilistic Volcanic Hazard Assessment Final Report	February 1996
License Application Annotated Outline Section(s) on Volcanism	September 1996
Total System Performance Assessment	Summer 1997

Enclosure 4

Status of items requested by the NRC

(Note: The italicized portions of the item descriptions summarize the information requested by the NRC. The plain text portions are DOE's assessments of the status and/or availability of the information.)

INFORMATION

Item 1. *Lathrop Wells volcano sample locations, geochemical analyses, and stratigraphic designations for geochemical samples.* DOE is currently compiling information on samples that were collected and analyses that were completed. The sample location information is available in the Sample Management Facility records. For surface (outcrop) and trench samples, DOE can provide information on samples by investigator's name and by sample identification number. The sample identification number can then be used to trace the sample back to the investigator's scientific notebook where detailed descriptions of the sample and its collection location are available. DOE can arrange access to the location data, but DOE requests that requests for access be made by contacting the YMSCO Assistant Manager for Suitability and Licensing or his staff.

Other information on analyses and stratigraphic designations will be provided in the technical database which is expected in the fall of 1995 and in subsequent revisions to that database. Information, such as locations of samples, notebook(s) where the samples are described, and the DOE technical data tracking number, will be contained in the LANL technical data reference report which is expected in November 1995.

Item 2. *Copies of 1:4,000 air photo stereo pairs used to construct geologic maps for Lathrop Wells.* Stereo air photo pairs have been identified by air photo numbers and are available. We need clarification on the format of the air photos; specifically, does the NRC need marked or unmarked photos, film negatives, positives, or prints, the size of the photos, and is access to information in scientific notebooks also needed?

Item 3. *Complete and legible copies of all scientific information used to document the "Key" stratigraphic or geologic relationships that LANL researchers maintain*

show significant intervals of time between volcanic events at Lathrop Wells. DOE requests that the NRC identify the specific items of information that are of interest. To aid the NRC, a list of the LANL investigators' published references has been provided below:

Crowe, B. M., Basaltic Volcanic Episodes of the Yucca Mountain region, in Proceedings High-Level Radioactive Waste Management Conference, Las Vegas, Nevada, American Nuclear Society, La Grange Park, Illinois 1990, pp. 65-73.

Crowe, B., C. Harrington, L. McFadden, F. Perry, S. Wells, B. Turrin, and D. Champion, Preliminary Geologic Map of the Lathrop Wells Volcanic Center, Los Alamos National Laboratory Report LA-UR-88-4155 (1988).

Crowe, B. M., B. Turrin, S. Wells, F. Perry, L. McFadden, C. Renault, D. Champion, and C. Harrington, Volcanic Hazard Studies for the Yucca Mountain Project, in LuPone, P., 1989, Waste Management 89; Waste Processing, Transportation, Storage and Disposal; Technical Programs and Public Education; Low-Level Waste Proceedings of the Symposium on Waste Management at Tucson, AZ, February 26 - March 2, 1989, Vol. 1, American Nuclear Society, La Grange Park, Illinois, p. 485-492.

Perry, F. V., and B. M. Crowe, Geochemical Evidence for Waning Magmatism and Polygenetic Volcanism at Crater Flat, Nevada, in Buckley, B. L. and P. LuPone, 1994, Proceedings High-Level Radioactive Waste Management Conference, Las Vegas, Nevada, Vol. 2, American Nuclear Society, La Grange Park Illinois, 1992, pp. 2344-2355.

Crowe, B., F. Perry, J. Geissman, L. McFadden, S. Wells, M. Murrell, J. Poths, G. A. Valentine, L. Bowker, and K. Finnegan, Status of Volcanism Studies for the Yucca Mountain site Characterization Project, Los Alamos National Laboratory Report LA-12908-MS, 9 chapters (1995).

The authors of the papers have documented the scientific information, including trench sites identified on aerial photographs used in these reports in their field and laboratory notebooks. The data are located in Las Vegas, Nevada; Los Alamos and Albuquerque, New Mexico; and Riverside, California, but DOE can provide the NRC with access to this information. Alternatively, the technical data reference report, expected in November 1995, will catalog and identify all the requested information. The NRC could use the data reference report to identify

specific items of interest. In any case, DOE will assist the NRC to identify and collect the data items of interest.

Arrangements for such assistance can be made by contacting the YMSCO Assistant Manager for Suitability and Licensing or his staff.

Item 4. *Complete and legible copies of all scientific information used to document the results of trenching activities at Lathrop Wells.* The information requested is available in scientific notebooks which are archived, when closed, in Las Vegas, Nevada. Non-archived information is kept in active notebooks that are maintained by individual researchers at Las Vegas, Nevada; Los Alamos and Albuquerque, New Mexico; and Riverside, California. The NRC is welcome to examine the archived and open scientific notebooks; arrangements for such examinations can be made by contacting the YMSCO Assistant Manager for Suitability and Licensing or his staff.

Item 5. *Sample locations and unit designations for analyses reported in Vaniman and Crowe (1981) and Crowe, et al. (1986) LANL status reports.* The information cited in these two reports was collected prior to the implementation of the LANL QA program. The sample locations and unit designations for the requested geochemical analyses are stored in Las Vegas, Nevada and Los Alamos, New Mexico. The unit designations are current to the collection of data (1978-1986). The unit designations will be updated to the most current nomenclature in the technical data reference report which is expected in November 1995. The NRC is welcome to examine the data, and DOE is ready to assist the NRC in identifying the specific data items that are of interest.

Item 6. *Sample locations for units dated by LANL or co-investigators at the USGS.* From records in the Sample Management Facility, DOE can provide three-dimensional coordinates, and unique sample identification numbers for subsurface samples used for geochronologic work since about December 1990. For surface (outcrop) and trench samples, DOE can provide information on samples by investigator's name and by sample identification number. The sample identification number can be used to trace the sample back to the investigator's scientific notebook where detailed descriptions of the sample and its collection location are available.

In addition, the sample location data are archived in field and laboratory notebooks stored at Las Vegas,

Nevada; Los Alamos and Albuquerque, New Mexico; and Riverside, California. The notebooks contain complete records of sample locations for geochronology data for most of the work by the USGS (post-1986), but the USGS did not provide complete listing of analytical data. Specific sample information can be provided from detailed information in the technical data reference report which is expected in November 1995.

DOE will work with the NRC staff to identify and provide information on the specific samples and sample locations of interest.

Item 7. *Analytical information sufficient to independently calculate reported dates, including measurements that affect analytical precision and accuracy. Included in this information are thin-sections or complete photomicrographs....* All analytical information for geochronology data, collected under our Quality Assurance program and reported in the Volcanism Status Report, is archived in Las Vegas, Nevada, and Los Alamos, New Mexico. Access to data or copies of data can be provided for specific requests. Development of such requests should be facilitated through the information listed in the technical data reference report which is expected in November, 1995.

The Principal Investigators have thin sections which could be made available for viewing by the NRC. However, DOE cannot relinquish custody of such non-reproducible articles. Therefore, DOE recommends that NRC requests to view these items be made by contacting the YMSCO Assistant Manager for Suitability and Licensing or his staff.

Item 8. *Copies of 1:5,000 air-photo stereo pairs used to construct geologic maps for the Sleeping Butte volcanoes.* Stereo air photo pairs have been identified by air photo numbers and are available. DOE needs to know whether the NRC wants marked or unmarked photos, film negatives, positives, or prints, and the size of the photos, and whether access to information in scientific notebooks and relevant to construction of the geologic maps for the Sleeping Butte volcanos is also needed.

Item 9. *Copies of maps...used to define alternative structural models for the distribution of Pliocene and Quaternary volcanic centers in the Yucca Mountain Region.* DOE needs additional clarification to identify the article(s) requested. DOE suggests that the information in the LANL technical data reference report (see item 1) may help the NRC to identify the specific information needed.

Item 10. *Copies of photographs taken of large trench on north side of Lathrop Wells cone visited during stop 7 of the field trip on April 3, 1995.* The photos are available in the LANL office in Las Vegas. These photos have not yet been archived, but the NRC is welcome to contact DOE about access to view these photos. DOE requests that access arrangements be made by contacting the YMSCO Assistant Manager for Suitability and Licensing or his staff.

Item 11. *Copies of maximum clast size analysis of the Lathrop Wells cone, along with sample locations and unit designations.* The data has not yet been processed. It would be possible to provide NRC access to the raw data including field notes on sample locations and unit designations. However, DOE notes that references to the information requested will be in the technical data reference report which is expected in November 1995. DOE will assist the NRC in obtaining copies of the data of interest, but DOE requests that arrangements for such assistance be made by contacting the YMSCO Assistant Manager for Suitability and Licensing or his staff.

SAMPLES

Item 12. *A minimum of 3 gram (powdered) sample splits of all Lathrop Wells units that can no longer be sampled independently.* The DOE believes that all sites from which samples have been collected can still be sampled. For example, the buried lava flow on the north side of the cone is still accessible. Samples taken from the small trenches and test pits (now filled, but which could be reopened) were all of the fall sheet which is still accessible on the surface. The Qs4 unit is accessible on the south side of the cone and was visited at the last stop of the April 3, 1995, site visit. B. Hill, of the Center for Nuclear Waste Regulatory Analysis, collected a sample here, and he also displayed a sample of the buried Qs4 quarry unit during the April 3 visit.

If there are lithologic units or sites that the NRC cannot access for collection, the DOE will assist the NRC in obtaining samples, but the DOE needs to know specifically which units or sites are not accessible.

Item 13. *Sample splits of sufficient size to make at least one thin section and perform major, trace, and isotopic analyses (i.e., processed yield of at least 3 g) for the following units:*

a. *Basalt buried by alluvium in Frenchman Flat, which is reported as correlative with Nye Canyon area basalts (Crowe and others, 1995, p. 2-15).*

b. *Basalt buried by alluvium in Yucca Flat, intersected in drill hole UE1-H at 784 feet, which is reported as correlative with Paiute Ridge area basalts (Crowe and others, 1995, p. 2-14).*

c. *Basalt buried by alluvium in Amargosa Valley, intersected in a 1991 private company drill hole and reported as dated at 3.8 Ma (Crowe and others, 1995, p. 2-19).*

d. *Basalt buried by alluvium in Crater Flat Valley, intersected by drill hole VH-2 and reported as sample VH-2-1021 in Crowe and others, (1986; LANL report LA-9325-MS, Vol II).*

e. *Basalt of Rocket Wash, samples NE10-30-1DV, NE5-20-5DV, and NE 10-30-1DV, as reported in Crowe and others (1986; LANL report LA-9325-MS, Vol II).*

f. *Basalt intersected by a drill hole at Pahute Mesa and reported as sample US19C-1480 in Crowe and others (1986; LANL report LA-9325-MS, Vol II).*

g. *Basalt intersected by a drill hole at Amargosa Valley and reported as samples AM1-15-13 and AM1-15-270 in Crowe and others (1986; LANL report LA-9325-MS, Vol II).*

Items a, b, d, f, and g: These samples were all collected in the early 1980's by the DOE weapons program. YMSCO has no control over these samples since they were not collected by the Office of Civilian Radioactive Waste Management and were collected long before the Yucca Mountain Site Characterization Project QA program was implemented. In addition, the ages obtained from these samples are all older than 5 Ma and are thus not used as part of the data used to evaluate volcanic hazard at Yucca Mountain.

Item c: Any sample material that still exists is at Lehigh University where the geochronology work was done. The sample was collected by a private oil company, and DOE obtained only a small amount of material for dating. DOE could request the remaining sample material from Lehigh University and will do so if requested by the NRC.

Item e: These samples were collected prior to the Yucca Mountain QA program, and this locality is not part of the project's database because ages obtained on samples are much older than 5 Ma. However, the outcrops are still accessible, and additional samples can be collected by the NRC.

PROCEDURES

Item 1. *Methods for calculating disruption parameter for calculation of the probability of disruption of the repository by magmatic activity;*

Item 2. *Methods for magma volume determinations for calculating the probability of magmatic disruption of the repository and controlled area; and*

Item 3. *Methods for weighing volcanic probability calculations through the use of expert opinion.*

Procedural controls are typically implemented for repetitive operations. Since the study plan was written, it has been determined that the calculations described are unique and are not amenable to procedural control. However, the development of calculations of estimates of the disruption parameter and magma volume determinations supporting estimates of the probability of disruption of the repository by magmatic activity have been documented in scientific notebooks. These notebooks are available for inspection. The study plan is currently being revised to delete reference to these procedures. If the NRC wishes to examine documentation in scientific notebooks, DOE will arrange access to the notebooks for the NRC.

The methods for weighing volcanic probability calculations are similarly unique and are not suitable for procedural control. However, these methods will be documented in the report of the PVHA expert judgment project which is expected to be completed in February 1996. DOE recommends that the NRC defer further action on this item until the PVHA expert judgment report is available in February 1996.