U.S. DEPARTMENT OF ENERGY
OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT

PRESENTATION TO
THE NUCLEAR WASTE TECHNICAL REVIEW BOARD

SUBJECT: INTRODUCTORY REMARKS

PRESENTER: DAVID C. DOBSON

PRESENTER'S TITLE
AND ORGANIZATION: ACTING DIRECTOR
REGULATORY AND SITE EVALUATION DIVISION

PRESENTER'S
TELEPHONE NUMBER: (702) 794 - 7940

MARCH 1, 1991
INTRODUCTORY REMARKS

- DOE BELIEVES A PERFORMANCE BASED PROBABILISTIC APPROACH IS APPROPRIATE FOR EVALUATING VOLCANIC HAZARDS AT THE REPOSITORY DURING THE POST-CLOSURE PERIOD.

- ALTHOUGH PROBABILITY CALCULATIONS HAVE BEEN REFINED SINCE 1982, THE RESULTING NUMBERS HAVE NOT CHANGED WITH THE ADDITIONAL FIELD EVIDENCE

- THE CONDITIONAL PROBABILITY OF DISRUPTION OF A REPOSITORY BY FUTURE BASALTIC VOLCANISM IS APPROXIMATELY IN THE RANGE OF $10^{-8}$ TO $10^{-10}$ YR$^{-1}$
WE BELIEVE THE CURRENT ESTIMATES ARE REASONABLE AND CONSERVATIVE FROM A GEOLOGIC PERSPECTIVE

- FOR EXAMPLE, CURRENT CALCULATIONS ARE BASED ON RANDOM DISTRIBUTION OF VOLCANIC CENTERS

- IN FACT, VOLCANIC CENTERS ARE PREFERENTIALLY LOCATED IN STRUCTURAL BASINS

- THEREFORE, FACTORING IN STRUCTURAL CONTROLS LOWERS THE CALCULATED PROBABILITY

- FURTHERMORE, REASONABLE CONSEQUENCE ANALYSIS WILL FURTHER REDUCE THE PROBABILITY OF RELEASES EXCEEDING THE STANDARD
DOE recognizes that the issue of future volcanism at Yucca Mountain is a significant problem in terms of perception, if not performance. If the NRC view is that "the chance of volcanic eruptions at Yucca Mountain is fundamentally an unanswerable question", (J. Trapp, NRC), that would significantly affect our view of the chance of licensing Yucca Mountain.

Within the next 6-12 months DOE will develop a paper on volcanic risk assessment that it intends to use to close this issue.
AGENDA

BRIEFING OF STRUCTURAL GEOLOGY AND GEOENGINEERING PANEL MEETING
VOLCANIC HAZARDS AND VULNERABILITIES

TUCSON, ARIZONA
MARCH 1, 1991

8:00 - 8:10  WELCOME AND OPENING REMARKS  C. ALLEN  NWTRB
8:10 - 8:30  INTRODUCTION  D. DOBSON  DOE
            C. JOHNSON  STATE OF NV
            R. SHAW  NRC
            EPRI

PROGRESS IN 1990

8:30 - 9:30  OVERVIEW OF PROGRESS  B. CROWE  LANL
9:30 - 10:00  NEW GEOCHEMICAL DATA  F. PERRY  UNM
10:00 - 10:15  BREAK
10:15 - 11:00  NEW RESULTS FROM THE STATE OF NV  E. SMITH  UNLV
11:00 - 11:30  ADDITIONAL COMMENTS FROM THE AUDIENCE
11:30 - 12:30  LUNCH
AGENDA

BRIEFING OF STRUCTURAL GEOLOGY AND GEOENGINEERING PANEL MEETING
VOLCANIC HAZARDS AND VULNERABILITIES

TUCSON, ARIZONA
MARCH 1, 1991

PROBABILITY CALCULATIONS

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<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Organization</th>
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<tbody>
<tr>
<td>12:30 - 1:00</td>
<td>STATE OF NEVADA</td>
<td>C. HO</td>
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<td>1:00 - 1:45</td>
<td>EPRI</td>
<td>M. SHERIDAN</td>
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<td>1:45 - 2:15</td>
<td>DOE</td>
<td>B. CROWE</td>
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<tr>
<td>2:15 - 2:40</td>
<td>NRC</td>
<td>J. TRAPP</td>
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CONSEQUENCE ANALYSIS

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<tr>
<th>Time</th>
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<th>Organization</th>
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<tbody>
<tr>
<td>2:40 - 3:10</td>
<td>INTRODUCTION -</td>
<td>B. CROWE</td>
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<td></td>
<td>CONSEQUENCE AND PROBABILITY</td>
<td>LANL</td>
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<td>3:10 - 3:25</td>
<td>BREAK</td>
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<td>3:25 - 3:50</td>
<td>SCENARIO DEVELOPMENT, VOLCANIC PROCESSES &amp; MATHEMATICAL MODELS</td>
<td>G. VALENTINE</td>
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AGENDA

BRIEFING OF STRUCTURAL GEOLOGY AND GEOENGINEERING PANEL MEETING
VOLCANIC HAZARDS AND VULNERABILITIES

TUCSON, ARIZONA
MARCH 1, 1991

3:50 - 4:50
ROUND TABLE DISCUSSION
1. ON WHICH ISSUES IS A CONSENSUS DEVELOPING?
2. ON WHICH ISSUES ARE THERE SERIOUS DIFFERENCES?
3. ARE THESE ISSUES IMPORTANT WITH RESPECT TO SITE
   SUITABILITY AND PUBLIC HEALTH AND SAFETY?
4. HOW CAN THESE ISSUES BE RESOLVED?

CONCLUSION

4:50 - 5:00
CLOSING REMARKS
C. ALLEN
NWTRB