



UNITED STATES
NUCLEAR WASTE TECHNICAL REVIEW BOARD
2300 Clarendon Boulevard, Suite 1300
Arlington, VA 22201

Summer Board Meeting:
Exploration and Testing Activities,
Past and Future Climates and Hydrology at Yucca Mountain

Red Lion Hotel
Grand Ballroom I & II
3203 Quebec Street
Denver, CO 80207
Tel: (303) 321-3333
Fax: (303) 329-9179

July 9-10, 1996

Tuesday, July 9

- 8:30 A.M.** **Welcome and opening remarks**
John Cantlon, Chair
Nuclear Waste Technical Review Board
- 8:35 A.M.** **Session introduction: exploration and testing activities**
Edward Cording, NWTRB
- 8:40 A.M.** **Update on exploratory studies facility (ESF) activities**
[Richard Craun](#)
Department of Energy (DOE)
- 9:05 A.M.* *Questions/discussion*
- 9:20 A.M.** **Update on key scientific activities**
[Russell Patterson](#), DOE
- Activities related to unsaturated zone flow
 - Pneumatic testing results and interpretations
 - Ghost Dance fault investigations
- 9:45 A.M.* *Questions/discussion*
- 10:00 A.M.** **BREAK (15 minutes)**

July 9 — continued

10:15 A.M.

Synthesis of the results of ESF exploration

[Dennis Williams](#), DOE

- Subsurface exploration: north-south traverse of the repository block
 - Lessons learned

10:40 A.M.

Questions/discussion

11:00 A.M.

Update on the waste isolation strategy

[Stephen Brocum](#), DOE, and

Jean Younker, TRW Environmental Safety Systems, Inc.
Management & Operating Contractor

11:25 A.M.

Questions/discussion

11:45 A.M. LUNCH (1 hour 15 minutes)

1:00 P.M.

Planned thermal testing: ESF and large-block test

[William Boyle](#), DOE

- Issues for which data is being collected
- How data will support viability assessment in 1998
- Relationship of testing to the waste isolation strategy, total system performance assessments (TSPA), and Phase I design

1:25 P.M.

Questions/discussion

1:35 P.M.

Session introduction: past/future climates and hydrology at Yucca Mountain

Patrick Domenico, NWTRB

1:40 P.M.

Introduction to hydrology/climatology: program strategy

[Russell Patterson](#), DOE

- What the program is looking for, and why
- Significance of climate and hydrological response
- Program strategy and how the data will be used
- Approximate time table

1:55 P.M.

Questions/discussion

WEDNESDAY, July 10

8:30 A.M.

Reconvene
Patrick Domenico, NWTRB

8:35 A.M.

Perspective on paleoclimate
[Ike Winograd](#), USGS
• Devils Hole data and implications for Yucca Mountain

9:00 A.M. Questions/discussion

9:15 A.M.

Paleoclimate records: Implications for future climate change
[Rick Forester](#), USGS
• Data gathered, conclusions, uncertainties
• Consistencies with other studies

9:40 A.M. Questions/discussion

9:55 A.M.

BREAK (15 minutes)

10:10 A.M.

Perspective on paleohydrology
[Stanley Davis](#), University of Arizona
• Uses (and limitations) of paleohydrological data
• Perspectives on the use and interpretation of radioisotope dating
• Limitations of chlorine-36 dating

10:30 A.M. Questions/discussion

10:45 A.M.

Paleohydrology: Age control from uranium series and carbon-14 dating of calcite and opal in the ESF
[Zell Peterman](#) and [James Paces](#), USGS
• Data, models, uncertainties, and implications

11:05 A.M. Questions/discussion

July 10 — continued

11:15 A.M. **Paleohydrology: Hydrologic flow paths and rates inferred from the distribution of chlorine-36 in the ESF**

[June Fabryka-Martin](#)

Los Alamos National Laboratory

- Data, models, uncertainties, and implications

11:40 A.M. *Questions/discussion*

12:00 P.M. **LUNCH (1 hour)**

1:00 P.M. **Perspective on climate modeling: uses and limitations**

[Tom Wigley](#)

National Center for Atmospheric Research (NCAR)

1:20 P.M. *Questions/discussion*

1:30 P.M. **Future climate modeling**

[Starley Thompson](#), NCAR

- Models, assumptions, uncertainties, and implications

1:50 P.M. *Questions/discussion*

2:05 P.M. **TSPA insights into the impacts of climate and chlorine-36**

[Michael Wilson](#)

Sandia National Laboratories

2:25 P.M. *Questions/discussion*

2:40 P.M. **Wrap-up of climate and paleohydrology**

[Sheryl Morris](#), DOE

2:50 P.M. **BREAK (15 minutes)**

July 10 — continued

3:05 P.M.

Round-table discussion on climate and hydrology

Moderator: Garry Brewer, NWTRB

Participants: Board members and invited participants

- Is the DOE strategy correct?
- What is the likelihood of success?
- What are the limitations of the data being collected?
- Are there suggested changes?

4:35 P.M.

Questions/public comment

5:05 P.M.

Closing remarks/adjournment

John Cantlon, Chair

NWTRB