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

NUCLEAR WASTE TECHNICAL REVIEW BOARD
PANEL ON STRUCTURAL GEOLOGY & GEOENGINEERING

SUBJECT: INTRODUCTION TO SEISMIC VULNERABILITIES DISCUSSIONS

PRESENTER: DR. ARDYTH SIMMONS

PRESENTER'S TITLE AND ORGANIZATION: GEOLOGIST
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT

PRESENTER'S TELEPHONE NUMBER: (702) 794-7998

JANUARY 22-23, 1992

Previous Meeting - April 1990

- Summarized current knowledge of seismic hazard at site
- Presented conceptual seismic design basis and summary of probabilistic assessments
- Discussed in detail preliminary seismic design cost benefit analysis for waste handling facilities
- Proposed approach for further development of seismic design basis

Work Since April 1990

- Repository design has been funded at a minimal level; therefore, little new work on seismic design
- Major shift in personnel in 1991
- TAR is being initiated for seismic design basis for ESF - items not important to safety
- ESSE recommended that, based on present knowledge, faulting and ground motion would not disqualify the site
- Seismic hazard is a good topic for issue resolution; DOE working group established to develop topical report

Purpose of Today's Presentations

- Discuss new data collected
- Incorporate knowledge from nuclear testing at NTS tunnels
- Use this information to assess seismic vulnerability of facility for pre- and postclosure
- Discuss how vulnerability can drive site characterization
- Suggest possible methods of reducing seismic vulnerabilities
- Show that seismic risk to public by facility would be low
- Introduce new Yucca Mountain investigators

Nuclear Waste Technical Review Board
Structural Geology & Geoengineering Panel Meeting

Seismic Vulnerabilities
Agenda

January 22-23, 1992
Irvine, CA

<u>Wednesday, January 22, 1992</u>

8:30	Welcome and Introduction	D. Deere/NWTRB
8:35	Introduction	C. Allen/NWTRB
8:45	Introduction to Seismic Vulnerabilities Discussions	A. Simmons/DOE
9:00	Summary of Seismic Hazards • Faulting and ground motion for pre- and post-closure • Multiple event and multiple faulting scenarios	T. Grant/SAIC
9:50	Update on Midway Valley Trenching	B. Swan/Geomatrix J. Whitney/USGS

Seismic Vulnerabilities
Agenda

10:10	Break (30 min.)	
10:40	Effects of Nuclear Tests on Tunnels	J. Phillips/SNL
11:15	Seismic Vulnerabilities & Seismic Design Issues: Surface Facilities	P. Richter/ Fluor Daniel
11:55	Lunch (1 1/4 hour)	
1:10	Seismic Vulnerabilities & Seismic Design Issues: Subsurface Excavation	J. Merritt/WC
1:50	Site Characterization at Yucca Mountain and Issues Related to Seismic Vulnerability	R. Quittmeyer/WC
2:30	Summary of Presentations by DOE	A. Simmons/DOE
2:45	Break (30 min.)	