

# U.S. DEPARTMENT OF ENERGY



COVER SHEET

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TO: John Linehan

FROM: John Roberts

DATE: 4/2/93

MESSAGE:

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UNITED STATES  
 NUCLEAR WASTE TECHNICAL REVIEW BOARD  
 1100 Wilson Boulevard, Suite 910  
 Arlington, VA 22209

March 25, 1993

Mrs. Hazel R. O'Leary  
 Secretary of Energy  
 U.S. Department of Energy  
 1000 Independence Avenue, S.W.  
 Washington, DC 20585

Dear Secretary O'Leary:

It is the Board's long-standing and unequivocal scientific and technical judgment that determining the suitability of the site at Yucca Mountain, Nevada, for construction of a repository requires gaining access as soon as possible to the underground geology of the site. The suitability of the site cannot be assessed without first excavating underground so that the faults can be viewed and critical long-term experiments can be initiated at what would ultimately become the repository level should the site prove suitable and be licensed.

I have been asked to clarify the Board's position on the diameter of the tunnels for the underground exploratory studies facility (ESF). The Board has long advanced the judgment that the suitability of the site can be assessed from an ESF with tunnel diameters of 16 to 20 ft. We made our position known to the DOE in a meeting in July 1991; it was repeated in a recommendation to the DOE in the Board's *Fourth Report* (December 1991) and in June 1992 in the Board's *Fifth Report*. The question of ESF tunnel diameter also was discussed in great detail at a technical exchange with the DOE on November 4 and 5, 1992. At this technical exchange, all but one of the Board's members were present, and, together with our consultants, we concluded that the technical basis for the DOE's choice of larger diameter tunnels for assessing site suitability was not a compelling one.

At the November 4-5, 1992, technical exchange, the Board was informed by the DOE that changing from a 25- to 30-ft-diameter tunnel to a smaller tunnel diameter at this point in the program would result in as much as a six-month delay in the initiation of tunnel boring for the ESF. Such a schedule slippage, with no progress toward initiating the critical underground experiments and viewing the geologic faults at depth would detract from the schedule and cost savings that could be gained by using smaller tunnel diameters.

The Board's judgment on the technical adequacy of 16- to 20-ft-diameter tunnels for the ESF remains as originally presented. However, the DOE's management decision to complete preparation for procurement of a 25- to 30-ft tunnel boring machine and the

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specifications for the ramp construction contract apparently could not be changed in November 1992 without off-setting much of the time and cost savings of the smaller tunnel size. Subsequently, the Board has chosen not to pursue the issue of tunnel diameter any further. Instead, the Board has been addressing other aspects of the ESF and surface-based site-assessment activities.

The issue of ESF tunnel diameters was raised in the Board's March 1993 *Special Report*; our purpose was not to revive the diameter argument but to illustrate the need to improve the Office of Civilian Radioactive Waste Management's approach to this very complex technical and political challenge of dealing effectively with the Nation's spent nuclear fuel and high-level defense waste. The Board remains convinced that the presently improved momentum toward getting the critical underground assessments under way should not be halted.

If you have questions on this or other matters that the Board has examined, please call me (517) 351-7127.

Sincerely yours,



John E. Cantlon  
Chairman

cc:  
Lake Barrett

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