April 23, 2008

The Honorable Dale E. Klein
Chairman
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: THE NRC SHOULD NOT ACCEPT DOE’S YUCCA MOUNTAIN
APPLICATION IF IT LACKS A WORKABLE PLAN FOR RETRIEVAL OF SPENT
FUEL AS REQUIRED BY LAW

Dear Chairman Klein:

   From the documents released by the Department of Energy a picture is emerging
of parts of their forthcoming Yucca Mountain license application. On April 15 I wrote
you that the NRC should reject the application because its claimed compliance with the
EPA safety standard rests on the highly implausible proposition that one hundred years
from now DOE’s successors will install thousands of 5-ton titanium drip shields over the
waste containers.

   That is not, however, the only make-believe element in DOE’s expected
application that dictates rejection. Unless DOE comes up with something very different
from what is contained in its supporting documents, it appears that the Department has no
plausible or workable plan, as is required by law, to retrieve spent fuel should it become
necessary.

   1. To have the capability to retrieve spent fuel long after it has been emplaced in
underground tunnels, DOE would have to maintain the tunnels and remotely operated
underground railway system, as well as the necessary cameras and sensing systems.
There is no realistic DOE plan for such maintenance for years after waste emplacement in
the face of a harsh underground environment subject to drift collapse and rock-falls, and
in the presence of an intense radiation field. Nor is there a description of a detailed plan
for retrieval beyond the assertion that it would simply be the reverse of emplacement.
DOE does acknowledge a remote possibility of off-normal retrieval scenarios, but its planning for solutions is lacking in substance.

2. To make an informed decision about retrieval DOE would have to know whether the underground packages are corroding. DOE's own calculations show that hot waste canisters are susceptible to corrosion if water drips on them. DOE has various proposals — as discussed in the November 2004 Performance Confirmation Plan (3.3.4) — for estimating the waste canister corrosion after emplacement. Insofar as we have been able to determine, these proposals are all in the preliminary stage, and none of them involve monitoring corrosion on the actual waste canisters as is specified by the Commission’s staff in their Yucca Mountain Review Plan (NUREG 1804). There is not even an indication of how this might be done, as it would require remote microscopic examination of the different parts of the waste canisters deep underground in a difficult environment. Furthermore, it is not only the integrity of the canisters that determines retrievability. Equally important is the integrity of other equipment and services within the repository environment.

3. Most telling of all - DOE is just going through the motions when it comes to a retrieval capability. The Department does not have, at least in any published documents that we are aware of, any decision criteria for waste retrieval.

NRC should not accept a DOE license application that does not take seriously the legal requirement for waste retrieval. In addition to requiring a repository equipment design that allows NRC and Nevada to evaluate whether it might actually work, NRC should demand that the license application include a detailed description of a workable plan for maintenance of the underground transport system so that retrieval would be feasible if necessary; a detailed description of plans for post-emplacement surface corrosion monitoring of the waste canisters themselves to provide the needed data; and specific criteria for triggering waste retrieval. In dealing with new technology and unprecedented circumstances, "we'll come up with something when we get there" is not good enough to protect public health and safety.

Finally, a license application cannot be “complete and accurate in all material respects,” 10 C.F.R. § 63.10(a), when one of the fundamental tenets of the repository system is barely paid lip service.

Sincerely,

Robert Loux
Executive Director
cc: Governor Gibbons
    Attorney General Cortez-Masto
    Nevada Congressional Delegation
    Commissioner Gregory B. Jaczko, NRC
    Commissioner Peter B. Lyons, NRC
    Commissioner Kristine L. Svinici, NRC
    Luis A. Reyes, NRC, Executive Director for Operations
    Martin J. Virgilio, NRC, Deputy Director for Operations
    Mike Weber, NRC, Director of the Office of Nuclear Material Safety and Safeguards
    Lawrence Kokajko, NRC, Director of the Division of High Level Waste Repository
    Safety
    Jack Davis, NRC, Deputy Director for Technical Review
    Nuclear Waste Technical Review Board
    Ward Sproat, DOE