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MEMORANDUM TO: John T. Larkins, Executive Director
Advisory Committee on Nuclear Waste

FROM: Michael J. Bell, Chief
Engineering and Geosciences Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

SUBJECT: LOS ALAMOS PREPRINT AND INTERNAL REVIEW ON REPOSITORY CRITICALITY

Attached please find six copies of a preprint of a paper by researchers at Los Alamos National Laboratory (LANL) on the potential for criticality from underground disposal of plutonium and other fissile material, and of a LANL review of the paper. While the paper primarily addresses disposal of plutonium from weapons dismantlement in a generic geologic environment, the authors argue that some of the consideration apply as well to geologic disposal of commercial spent fuel. The paper is expected to be submitted for publication in a scientific journal.

The paper is being provided to ACNW for information because it has been the subject of considerable media attention. NRC staff are reviewing the two documents to assess the technical merits of the issues raised and plan to interact with DOE as appropriate on the issue.

Attachment: As stated

cc: S. Bahadur, RES
M. McNeil, RES
N. Sridhar, CNWRA

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U.S. DEPARTMENT OF ENERGY

OFFICE OF PROGRAM MANAGEMENT AND INTEGRATION

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NUMBER OF PAGES (INCLUDING THIS ONE): 20

MESSAGE:

Please find attached:

- Underground Autocatalytic Criticality from Plutonium and Other Fissile Material
- Comments on "Nuclear Excursions" and "Criticality Issues"