

August 19, 2005

Dr. Michael T. Ryan, Chairman
Advisory Committee on Nuclear Waste
U.S. Nuclear Regulatory Commission
Washington, DC 20555

SUBJECT: DEPARTMENT OF ENERGY PLANS FOR TRANSPORTING SPENT
NUCLEAR FUEL AND HIGH-LEVEL RADIOACTIVE WASTE

Dear Dr. Ryan:

I am responding to your letter of June 28, 2005, in which you summarized a presentation by the Department of Energy (DOE) Office of National Transportation. Your letter provided an observation on DOE's programmatic and fiscal responsibility to optimize the system for the transportation of spent nuclear fuel. Your letter also observed that the use of burnup credit would increase realism in the DOE analysis and would increase transportation efficiency.

You recommended, in your letter, that the Nuclear Regulatory Commission (NRC) should consider allowing realistic burnup credit for cask certification. The NRC staff already has existing guidance for reviewing, on a case-specific basis, the use of burnup credit in criticality safety analyses of pressurized-water reactor (PWR) spent fuel casks (NUREG-1617, "Standard Review Plan for Transportation Packages for Spent Nuclear Fuel"). This guidance was expanded in the Office of Nuclear Material Safety and Safeguards, Spent Fuel Project Office, Interim Staff Guidance (ISG)-8, "Burnup Credit in the Criticality Safety Analyses of PWR Spent Fuel in Transport and Storage Casks," Revision 2. The recommendations in this ISG only endorse burn-up credit based on actinide compositions. Currently, very limited data are available to support credit for fission products.

The Office of Nuclear Material Safety and Safeguards and the Office of Nuclear Regulatory Research have a coordinated approach for developing the technical basis to expand burnup credit, which is documented in "Response to User Need Request NMSS-2005-003 for Assistance Regarding Extension of the Technical Basis for Burnup Credit in Spent Fuel Casks" (ADAMS Accession No. ML051780375). The Electric Power Research Institute and DOE have initiated efforts to obtain burn-up credit data from international partners that have not been previously available. The NRC staff will issue additional guidance and recommendations on burnup credit as the research program receives and evaluates the new data and as experience is gained through future cask certification reviews.

M. Ryan

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The NRC staff is prepared to review any application for cask certification for the transportation of spent nuclear fuel that uses burnup credit in the criticality safety analyses. The burden is on the applicant to provide a sound technical basis, including adequate supporting data and analyses, for its burnup credit approach.

The NRC staff appreciates the Committee's recommendations and interest in issues related to burnup credit and criticality safety.

Sincerely,

/RA Martin J. Virgilio Acting For/

Luis A. Reyes
Executive Director
for Operations

cc: Chairman Diaz
Commissioner Merrifield
Commissioner Jaczko
Commissioner Lyons
SECY

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*See previous concurrence

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