

March 10, 2006

Mr. David W. Crawford
Office of the Director, RW-2
Office of Civilian Radioactive Waste Management
U. S. Department of Energy
1000 Independence Ave, SW
Washington DC 20585

SUBJECT: ACQUISITION AND RELEASE OF BURNUP CREDIT DATA

Dear Mr. Crawford:

The purpose of this letter is to encourage the U. S. Department of Energy (DOE) to move forward expeditiously with its plans to acquire and distribute the technical data supporting burnup credit as discussed with my staff.

The issue of how much burnup credit is justified in the criticality safety analysis of a transport package has been a key concern of the U. S. Nuclear Regulatory Commission's (NRC) Spent Fuel Project Office (SFPO) for a number of years. In 2002, SFPO used technical reports prepared by the NRC's Office of Nuclear Regulatory Research (RES), to develop and issue Revision 2 of our Interim Staff Guidance 8 (ISG-8), "Burnup Credit in the Criticality Safety Analysis of PWR Spent Fuel in Transport and Storage Casks." The guidance and limitations (e.g., actinide-only credit) recommended in ISG-8, Rev. 2, were consistent with the quantity and quality of data known to be available at the time. The ISG implicitly states that additional guidance will be issued as more information is obtained from research programs directed at burnup credit. Recognizing the interest by industry to include fission products ("full" burnup credit) in their spent fuel cask analyses, it has always been SFPO's intention to expand the scope of ISG-8 when justified by additional data.

Work performed under the NRC RES program on burnup credit demonstrated that inclusion of fission products significantly increases the percentage of the spent fuel inventory that can be loaded in a high-density cask (i.e., a cask that does not rely on internal flux-trap "gaps" for criticality control). Whether such a high-density design is used to enlarge the capacity of a transportation and/or storage cask, or considered in the design of a disposal cask, DOE's Office of Civilian Radioactive Waste Management could realize a significant benefit when compared with a system without full burnup credit.

Because of the demonstrated benefits from extending burnup credit and the lack of appropriate data that has long been a hindrance to the advancement of burnup credit, SFPO was pleased to learn that the DOE's Office of National Transportation is undertaking a project to obtain and distribute technical data needed to support the preparation and review of a safety evaluation for cask designs using full burnup credit. In anticipation of DOE acquiring these data, RES initiated

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a project in FY2005 to develop the technical basis for expanding the scope of ISG-8 to include recommendations for full burnup credit.

The SFPO staff believes that the data being sought will prove valuable to the industry as they prepare safety analyses with full burnup credit, will significantly benefit DOE in their planned transport operations, and will be crucial to providing NRC staff with the technical basis needed for the expansion of ISG-8. Due to industry interest in obtaining the benefits of full burnup credit in current cask development efforts, the timely release of each data set to the cask designers is particularly encouraged.

Should you have any questions about our views on the need to obtain and release burnup credit data to the industry, please contact me or Carl Withee of my staff at (301) 415-8500.

Sincerely,

/RA/

E. William Brach, Director
Spent Fuel Project Office
Office of Nuclear Material Safety
and Safeguards

cc: Paul M. Golan, DOE
J. Gary Lanthrum, DOE
Nancy S. Thompson, DOE

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