

December 22, 2006

MEMORANDUM TO: William H. Ruland, Deputy Director
Licensing and Inspection Directorate
Division of Spent Fuel Storage and Transportation, NMSS

FROM: Nancy L. Osgood, Senior Project Manager
Licensing Branch /RA/
Division of Spent Fuel Storage and Transportation, NMSS

SUBJECT: SUMMARY OF DECEMBER 14, 2006, MEETING WITH PACTEC AND
DOE REGARDING DESIGN OF A PACKAGE FOR SHIPMENT OF
UNIRRADIATED ATR FUEL

Background

A meeting was held on December 14, 2006, in Rockville, Maryland, at the request of Packaging Technology (PacTec) on behalf of the Department of Energy (DOE), to discuss the design of a new transport package for unirradiated Advanced Test Reactor (ATR) fuel. The package will be a Type AF package. This meeting was a follow-on to a meeting held August 30, 2006. Enclosure 1 is the list of meeting attendees, and Enclosure 2 is the meeting presentation. No regulatory decisions were made nor requested at the meeting.

Discussion

The discussion followed the enclosed meeting presentation. The following points were discussed:

- Package Design. PacTec gave an overview of the design for the package that will be used for the transport of unirradiated ATR fuel. PacTec reviewed the basic features of the package design, including dimensions, weights, and materials of construction.
- Engineering Test Results. A single prototype unit was subjected to five 30-foot drop tests. The package contained a mock fuel element, which was identical to an actual fuel element, without the fissile material. The package remained closed with only minor damage following the tests. The fuel element showed some bending of some of the fuel plates. Based on test results, and in consultation with package users, design changes were made to the fuel support components. The final design will incorporate a strongback instead of separate fuel supports at each end of the fuel element.
- Certification Test Plans. PacTec plans to test the final design in February 2007 at Sandia National Laboratory. The test unit will be subjected to the drop and puncture tests. Current plans include five 30-foot drops and two puncture tests. The thermal performance of the package will be evaluated by analysis. The strongback will be mocked up in the tests. There was discussion regarding the criteria that should be used to design the mockup strongback. Differences between the tested unit and the final design will be evaluated and justified.

- Criticality Analyses. PacTec described criticality analyses performed to date. Additional considerations were identified, such as preferential flooding, partial density water, array configuration, and fuel element position within packages in an array.
- Certification Plans. PacTec presented a schedule for certification activities. Physical tests are planned for February 2007, and an application for package approval is scheduled to be submitted to NRC in June 2007. The need date was identified as December 2007. DOE will be the applicant, and the package application will be submitted through DOE-EM.

Docket No. 71-9330

TAC No. L24003

Enclosures: 1. Meeting Attendees
2. Meeting Presentation

cc w/encls: J. Shuler, Department of Energy

- **Criticality Analyses.** PacTec described criticality analyses performed to date. Additional considerations were identified, such as preferential flooding, partial density water, array configuration, and fuel element position within packages in an array.
- **Certification Plans.** PacTec presented a schedule for certification activities. Physical tests are planned for February 2007, and an application for package approval is scheduled to be submitted to NRC in June 2007. The need date was identified as December 2007. DOE will be the applicant, and the package application will be submitted through DOE-EM.

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 cc w/encls: J. Shuler, Department of Energy

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C=Without attachment/enclosure E=With attachment/enclosure N=No copy **OFFICIAL RECORD COPY**

December 14, 2006, Meeting
between Department of Energy and Packaging Technology and
the Nuclear Regulatory Commission

MEETING ATTENDEES

Michel Call	NRC/NMSS/SFST
Jerry Chuang	NRC/NMSS/SFST
Chuck Interrante	NRC/NMSS/SFST
Nancy Osgood	NRC/NMSS/SFST
Robert Shewmaker	NRC/NMSS/SFST
David Tang	NRC/NMSS/SFST
Elizabeth Thompson (part time)	NRC/NMSS/SFST
Bob Tripathi	NRC/NMSS/SFST
Joe Boda	DOE
Craig Tyler	Idaho National Lab
Andrew Kee	PacTec
Richard Smith	PacTec

Enclosure 1