December 15, 2006

MEMORANDUM TO: William H. Ruland, Deputy Director
Licensing and Inspection Directorate
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

FROM: Meraj Rahimi, Senior Project Manager
Licensing Branch /RA/
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

SUBJECT: SUMMARY OF DECEMBER 6, 2006, MEETING WITH DEPARTMENT OF ENERGY - IDAHO NATIONAL LABORATORY ON DESIGN OF STANDARDIZED CANISTERS FOR TRANSPORT

On December 6, 2006, staff of the Nuclear Regulatory Commission (NRC), the Department of Energy (DOE) - Idaho National Laboratory (INL) and its contractors held the second pre-application meeting to discuss Standardized Canister designed for transporting DOE-owned spent nuclear fuels which are destined for Yucca Mountain. The purpose of the meeting was to discuss the DOE's approach in addressing the criticality safety requirements of 10 CFR Part 71 using the moderator exclusion assumption, based on the demonstrated structural integrity of the proposed canisters.

As described by the DOE, the Standardized Canister is not a self-contained transportation package. Rather, it is a subpart of a transportation cask system with the canister providing robust containment. The DOE has developed four design variations of the Standardized Canister: an 18-inch and a 24-inch nominal diameters which come in 10-foot and 15-foot length, depending on the spent fuel type. These stainless steel canisters are designed for storing, transporting, and disposing of spent nuclear fuels discharged from research reactors, production reactors, and other spent nuclear fuels owned and managed by the DOE. Multiple basket designs can be accommodated within the canisters.

The DOE is proposing to submit a topical report which would demonstrate the ability of these canisters, once placed inside transportation overpacks, to keep water outside the canisters per their interpretation of 10 CFR 71.55(b) which indicates moderation by water to the most reactive credible extent. The DOE stated that placing spent fuels in canisters and putting canisters inside leak-tight transportation overpacks makes water intrusion non-credible. However, the staff indicated that 10 CFR71.55(b) is more inclusive than what the DOE's interpretation suggests. The staff indicated that DOE could use guidelines similar to those provided in the Interim Staff Guidance (ISG) -19 which credits the canister for moderator exclusion under hypothetical accident conditions during transport, provided the applicant can demonstrate the structural integrity of the canister using the criteria outlined in ISG-19.

Maintaining the structural integrity of the canister includes maintaining the basket geometry in the canisters. Therefore, it was suggested that DOE also examine the canister's basket design under hypothetical accident conditions. The staff also expressed some concerns regarding the basket welds and their corrosion. In addition, the staff pointed to the possibility of flammable hydrogen gas buildup as the result of the hydrolysis of the 11% residual water left in the canisters.

No regulatory decisions were made at the meeting.

An attendance list and meeting materials are included.

TAC No. L24045

Enclosures:
1. Attendance List
2. Meeting Materials

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*previously concurred

OFC:	SFST	E	SFST	E	SFST	
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DATE:	12/13/06		12/13/06*		12/15/06	

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NRC/DOE - Idaho Meeting
December 6, 2006

ATTENDANCE LIST

Name	Affiliation
Meraj Rahimi	NRC/NMSS/SFST
Bill Ruland	NRC/NMSS/SFST
Ed Hackett	NRC/NMSS/SFST
Gordon Bjorkman	NRC/NMSS/SFST
Bob Einziger	NRC/NMSS/SFST
David Tang	NRC/NMSS/SFST
Carl Withee	NRC/NMSS/SFST
Jerry Chuang	NRC/NMSS/SFST
Bob Tripathi	NRC/NMSS/SFST
Elaine Keegan	NRC/NMSS/SFST
Nancy Osgood	NRC/NMSS/SFST
Andrew Barto	NRC/NMSS/SFST
Mahendra Shah	NRC/NMSS/HLWRS
Sheena Whaley	NRC/NMSS/HLWRS
Banad Jagannath	NRC/NMSS/HLWRS
Tae Ahn	NRC/NMSS/HLWRS
Chris Brown	NRC/ACRS/ACNW
Assad Chowdhury	CNRWA
Oleg Povetko (by phone)	CNRWA
Dick Blaney	DOE/EM
John Scorah	DOE/EM-33
Steve Gomberg	DOE/OCRWM/WMD
Mark Arenez	DOE/Idaho
Brett Carlsen	INL/NSNFP
Phillip Wheatley	INL/SNSFP
Thomas Hill	INL/NSNFP
Mal Knapp	Talisman International
Charles Haughney	Talisman International
George Bidinger	Talisman International
Bob Cynkar	Egan Fitzpatrick (Nevada)
Ed Benz	BSC/JAI
Maureen Conley	Platts/McGraw Hill
Everett Redmond	NEI
Russ Willis (by phone)	Bechtel Bettis Inc.

Enclosure 1

Enclosure 2

Presentation Materials