

October 24, 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 /RA/
Licensing Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

SUBJECT: SUMMARY OF OCTOBER 12, 2006, MEETING WITH NUCLEAR ENERGY
INSTITUTE (TAC NO. LA0233)

On October 12, 2006, representatives of the Nuclear Regulatory Commission (NRC) and Nuclear Energy Institute (NEI) held a meeting to discuss the licensing and technical issues pertaining to spent fuel storage and transportation cask licensing under 10 CFR 71 and 72. The meeting agenda and a list of attendees are included in Enclosures 1 and 2.

The NRC staff made presentations on the use of burnup credit under 10 CFR 71/72 versus 10 CFR 50 and the need for burnup verification measurement in implementing burnup credit under Part 71/72 (Enclosure 3). The industry representatives also presented their perspectives on the differences between Part 71/72 and Part 50 (Enclosure 4) and burnup verification measurement (Enclosure 5). At the end, the industry also presented their views on other issues related to Part 72 (Enclosure 6).

With regard to the first issue, the staff discussed the overall differences between casks and pools with respect to criticality safety and how they're translated into different technical acceptance criteria in implementing Part 71/72 and Part 50 requirements. The staff indicated that there is a need for additional benchmark data if one desires to take full credit for neutron-absorbing properties of the principle isotopes in spent fuel assemblies. On the other hand the industry believes there are not significant differences between casks and spent fuel pools. Therefore, the same methodology used in burnup credit analyses for pools should be used for casks irrespective of the environment within which transportation or storage casks are.

With respect to the need for burnup verification measurement, the staff discussed the two reasons for measurements: a) to verify the reactor records on burnup and b) to reduce the probability of misloads. The industry described the process used at Duke Energy to assign burnup values to discharged spent fuel assemblies. The process is based on in-core neutron fluence measurements which are translated into burnup and compared to calculated burnup values from core design calculations. The industry also described the measurement campaigns that have been performed at a few of the reactor sites. The staff requested documentation that would describe in detail the process for assigning burnup values to spent fuel assemblies based on reactor core measurements and any measurement campaigns which have been performed in addition to those presented by the industry at the meeting.

NEI agreed to provide the requested information. With respect to misloads, the industry pointed to the Electric Power Research Institute (EPRI) study that indicates misloading a burnup credit cask with several under-burned spent fuel assemblies, which results in about 10% reactivity increase, would be still subcritical. The staff reminded the industry that the k_{eff} for the cask in the EPRI's study is assumed to be significantly below 0.95 under the initial conditions. However, cask designs can be approved with k_{eff} equal to 0.95. It takes only a single fresh fuel assembly misload to eliminate the 5% margin and a burnup credit cask could become critical. At the end of the discussion on burnup measurements, the industry asked the NRC to consider the implementation issues associated with in-pool burnup verification measurements, especially those casks which have been already loaded.

Other issues discussed briefly at the meeting were, damaged fuel, control of cask licensing basis, risk informing Part 72 regulation, 72.48 guidance and implementation, and Part 72 licensing and renewal period (Enclosure 6). With respect to damaged fuel, the staff indicated that a revision to the Interim Staff Guidance-1 (ISG-1) will be ready for public comment sometime in December 2006. The staff also mentioned that the revised ISG-1 would not negate any of the prior staff's acceptance with respect to damaged fuels. With regard to risk informing Part 72 regulation, the staff indicated that there is no date for the release of the Dry Storage Cask Probabilistic Risk Assessment report. Therefore, any talks about revising regulations or guidance would be too premature. In its presentation on Part 72.48 guidance, the industry representative indicated they will participate in the update to Part 50.59 in order to learn lessons and apply them to 72.48 guidance. NEI indicated they would like to have a point of contact from the NRC staff. Randy Hall was introduced as the point of contact for General License issues. With regard to SECY-06-152 which recommends changing the initial and renewal license terms for licenses and the Certificate of Compliance (CoC), the Commission has approved the staff's plans to proceed with the changes.

Enclosure1: Meeting Agenda

- 2: List of Attendees
- 3: NRC's presentation on burnup credit and burnup measurement
- 4: Industry's presentation on burnup credit
- 5: Industry's presentation on burnup measurements
- 6: Industry's presentation on other issues

TAC No. LA0233

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NAME:	MRahimi		MDeBose		RNelson			
DATE:	10/24/06		10/24/06		10/24/06			

NRC/NEI Dry Storage Task Force Meeting

October 12, 2006

- 8:30 Introductions
- 8:45 NRC Presentation on Burnup Credit – Part 50 and 71/72 differences
- 9:45 Industry perspective of differences between Part 50 and 71/72
- 10:45 Break
- 11:00 Review of NRC and industry Burnup Credit presentations and discussion of path forward
- 11:15 NRC presentation on burnup measurements for Part 71/72 cask loading
- 12:00 Public comments
- 12:15 Lunch
- 1:15 Industry presentation on burnup measurements and accuracy of reactor records
- 2:15 Review of NRC and industry burnup measurement presentations and discussion of path forward
- 2:30 Break
- 2:45 Industry presentation on other key issues from the matrix
Issue 3: Damaged Fuel, ANSI N14.33 and ISG-1
Issue 4: Control of cask licensing basis
Issue 10: Risk Informing the regulations and review guidance
Issue 12: 72.48 guidance and implementation
Issue 36: SECY-06-152, Part 72 licensing and renewal period
- 4:15 Public comments and closing remarks
- 4:30 Adjourn

Enclosure 1

List of Attendees

<u>Name</u>	<u>Affiliation</u>
Meraj Rahimi	NRC/NMSS/SFST
William Brach	NRC/NMSS/SFST
William Ruland	NRC/NMSS/SFST
Ed Hackett	NRC/NMSS/SFST
Robert Einziger	NRC/NMSS/SFST
Bob Nelson	NRC/NMSS/SFST
Larry Campbell	NRC/NMSS/SFST
Randy Hall	NRC/NMSS/SFST
Ray Wharton	NRC/NMSS/SFST
Carl Withee	NRC/NMSS/SFST
Andrew Barto	NRC/NMSS/SFST
Chris Brown	NRC/NMSS/SFST
Elaine Keegan	NRC/NMSS/SFST
Jerry Chuang	NRC/NMSS/SFST
Jorge Solis	NRC/NMSS/SFST
Joe Sebrosky	NRC/NMSS/SFST
Jeremy Smith	NRC/NMSS/SFST
Dennis Damon	NRC/NMSS/SFST
Nancy Osgood	NRC/NMSS/SFST
Mike Waters	NRC/NMSS/SFST
Mike Call	NRC/NMSS/SFST
Daniel Huang	NRC/NMSS/SFST
Dennis Galvin	NRC/NMSS/HLWRS
Sheena Whaley	NRC/NMSS/HLWRS
Keneth Arnjerry	NRC
Richard Lee	NRC/RES/DRASP
Dan Forsyth	NRC/RES/DRASP
Ralph Caruso	NRC/ACRS
Harold Scott	NRC/RES
Neil Jensen	NRC/OGC
Andrew Perrin	NRC/OGC
Brian Gutherman	ACI Nuclear Energy Sol.
Albert Machiels	EPRI
Steve Nesbit	Duke Energy
Steven Kraft	NEI
Everett Redmond II	NEI
Terry Sides	Southern Nuclear
Jorge Morales	Southern Cal. Edison
Thecla Fabia	Fuel Cycle Week
Paul Baily	Duke Energy
Keith Waldroe	Duke Energy
Joe Coletta	Duke Energy
Oleg Povetko	CNWRA
Jayant Bondre	Transnuclear Inc.
Prakash Narayanan	Transnuclear Inc.

Randy Robins
Suzanne LeBlang
Wayne Harris
Ben Franklin
Stefan Anton
Zita Martin
Jay Thompson
Dang Ho
Robert Quinn
Cecil Parks
Tom Danner
Tom Ross
Alan Wells
Russ Willis
Michael Elo
Don Beckman
Glenn Adams
Dan Fehringer
Andrew Dykes
Jeffrey R. Williams
Paige Russel
Becky Battle
Martin Clapham

Dominion
NMC
Progress Energy
Entergy
Holtec International
Tennessee Valley Authority
U.S. DOE
Southern Nuclear
Energy Solutions
ORNL
NAC
Exelon
EPRI
Bechtel Bettis Inc.
Bechtel Bettis Inc.
Bechtel-SAIC Inc.
FPL
NWTRB
ABS Consulting
U.S. DOE
U.S. DOE
BIL Solutions
BIL Solutions

Enclosure 3

NRC's presentation on burnup credit and burnup measurement

Enclosure 4

Industry's presentation on burnup credit

Enclosure 5

Industry's presentation on burnup measurements

Enclosure 6

Industry's presentation on other issues