



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20555-0001

June 8, 2015

MEMORANDUM TO: Anthony Hsia, Deputy Director  
Division of Spent Fuel Management  
Office of Nuclear Material Safety  
and Safeguards

FROM: Huda Akhavannik, Project Manager **/RA/**  
Spent Fuel Licensing Branch  
Division of Spent Fuel Management  
Office of Nuclear Material Safety  
and Safeguards

SUBJECT: SUMMARY OF MAY 18, 2015, MEETING WITH THE NUCLEAR  
ENERGY INSTITUTE REGARDING COMMENTS MADE ON  
HIGH BURNUP FUEL DRAFT REGULATORY ISSUE SUMMARY

Background

On May 18, 2015, a meeting was held in Rockville, Maryland, at the request of the Nuclear Energy Institute (NEI) to discuss the public comments they submitted regarding the draft regulatory issue summary (RIS) titled, "Considerations in Licensing High Burnup Spent Fuel (HBF) for Dry Storage and Transportation" (ML14175A203). This was a Category 2 meeting open to the public and was noticed on April 28, 2015, but revised on May 14, 2015 (ML15134A449).

The list of meeting attendees, including those participating via telephone, is provided as Enclosure 1. Staff and NEI presentations are provided as Enclosures 2 and 3, respectively.

Discussion

The primary purpose of the meeting was to discuss NEI's comments on the draft RIS. This draft RIS was issued for a 45-day public comment period which closed on April 20, 2015. NEI had submitted their letter with an attached table containing comments on April 17, 2015 (ML15114A069).

From their letter, staff generalized the comments as: (1) that the RIS is creating new requirements, (2) the currently available data is not realistically representative, (3) license renewal beyond 20 years of dry storage, (4) the use of the demo, (5) containment/confinement, (6) the transportation licensing approach, and (7) backfitting. Staff addressed each of the comments made under these topics individually during their presentation, in Enclosure 2. In their own presentation (Enclosure 3), NEI presented an overview of their comments similar to what staff presented, but more explicitly discussed risk-informing the RIS and relying on ISG-24.

In regards to creating new requirements, NEI highlighted the regulations in Title 10 of the *Code of Federal Regulations* (10 CFR) Part 72.122(h) and 10 CFR Part 71.55(d)(2) which contain qualifiers such as "gross" and "substantially" regarding the reconfiguration of the fuel. NEI argued that although desired, cladding integrity does not need to be maintained per the regulations and that the design of storage casks and transportation packages protect the fuel

(i.e., preventing any residual water, providing an inert environment, etc.) Additionally, NEI argued that the currently available data is not realistic because the peak cladding temperatures are not as high, in the DOE/EPRI demonstration project or other loaded casks, as the 400°C NRC-established maximum peak cladding temperature limit. NEI also stated that fuel is not expected to see the stresses that would cause any significant fuel damage and that HBF assemblies are more robust than low burnup assemblies in the reactor.

The staff indicated in their comments that the licensing approaches presented in the draft RIS were based on experience with already approved HBF storage and transportation applications. Following the RIS is not a requirement and the statements made in the RIS are guidance on some approaches. Staff also indicated that future operating experience and data obtained for HBF will demonstrate its robustness. However, given the amount of operating experience and data at this time, staff believes a need for confirmation should be in place. Staff discussed that the data used regarding high peak cladding temperatures are as bounding as possible for any future applications that may have higher heat loads than the DOE/EPRI demonstration project. Staff explained that fuel is not expected to see stresses that would result in significant fuel damage but that the potential for fuel damage exists if a pinch mode after a 30-foot side-drop accident occurs.

During the rest of the meeting, there was significant public participation where staff and NEI discussed comments and questions made by the public. Several members of the public disagreed with NEI statements that HBF is more robust, or even as robust, as low burnup spent fuel and highlighted several references. Donna Gilmore, a member of the public, sent an email after the meeting containing these comments and references (ML15155B213). Additionally, Patricia Borchmann, member of the public, also sent an email after the meeting describing her comments (ML15154B527). Another view presented by a member of the public was that there should be a shift in perception on HBF in that newer fuel designs are more robust and perform exceptionally well.

At the conclusion of the meeting, NEI noted that there should be more public meetings on this topic as there are further questions that need answering. Staff indicated that any decisions made on issuing the RIS will be after the comments received are considered and further harmonization with similar documents such as NUREG-1927, Rev. 1, is completed.

TAC No. LA0497

Enclosures:   1. Meeting Attendees  
                  2. NRC Presentation  
                  3. NEI Presentation

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SFST r/f NRC Attendees

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**ADAMS Package No.: ML15160A031 Memo: ML15160A032**

**Enclosure 2: ML15160A035 Enclosure 3: ML15160A039**

<b>OFC:</b>	SFST	E	SFST		SFST		
<b>NAME:</b>	HAkhavannik		MDeBose		MSampson		
<b>DATE:</b>	06/04/2015		06/04/2015		6/8/15		

**C = COVER E = COVER & ENCLOSURE N = NO COPY OFFICIAL RECORD COPY**

Meeting Attendees  
NEI Public Meeting  
May 18, 2015, 2:00 p.m. – 4:00 p.m.

NAME	AFFILIATION	PHONE NUMBER
Huda Akhavannik	NRC/NMSS/SFM	301-415-5253
Kris Cummings	Nuclear Energy Institute	202-739-8031
Glenn Mathues	AREVA TN	410-910-6538
Suzanne Leblang	Entergy	601-868-5494
Stefan Anton	Holtec	856-296-9219
Kenneth Swanger	Entergy-VY	802-451-3125
Rod McCullum	Nuclear Energy Institute	202-739-8082
Martin Murphy	Xcel	612-330-1992
Jack Guttman	NRC/NMSS/SFM	
Tae Ahn	NRC/NMSS/SFM	301-415-5972
John Greeves	JTG	301-452-3511
David Tang	NRC/NMSS/CSTB	301-415-6828
Kristina Banovac	NRC/NMSS/SFM	301-415-7116
Mark Lombard	NRC/NMSS/SFM	301-415-9655
Ricardo Torres	NRC/NMSS/SFM	301-415-7508
Zhian Li	NRC/NMSS/SFM	301-415-5366
Donald Chung	NRC/NMSS/SFM	301-415-8738
A.A. Hsia	NRC/NMSS/SFM	301-15-9655
Michele Sampson	NRC/NMSS/SFM	301-415-7493
Meraj Rahimi	NRC/NMSS/SFM	301-287-9233
Terry Pickens	Xcel Energy	
Keith Waldrop	EPRI	
John Kessler	EPRI	
Carlyn Greene	UxC	
Bob Tripathi	NRC/NMSS/SFM	
Chris Allen	NRC/NMSS/SFM	
John Vera	NRC/NMSS/SFM	
Norma Garcia Santos	NRC/NMSS/SFM	
Steven Dolley	Platts	
Paul Plante	3 Yankees	
Marvin Lewis	Member of the Public	
David Martin	Member of the Public	
Erika Gray	Virginia Sierra Club	
Donna Gilmore	Member of the Public	
Steve Nesbit	Duke Energy	
Bob Einziger	NWTRB	
Ace Hoffman	Member of the Public	
Patricia Borchmann	Member of the Public	
Jorge Solis	NRC/NMSS/SFM	
Robert Brown	Global Nuclear Fuels	
Angela Coggins	NRC/OGC	
Brian Gutherman	Gutherman Technical Services	
Keith Baker		
Alden Mathews		