



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

April 24, 2017

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 APRIL 6, 2017 MEETING WITH GLOBAL  
NUCLEAR FUEL - AMERICAS, LLC, REGARDING FUTURE  
LETTER AUTHORIZATION ON THE MODEL NO. RAJ-II  
TRANSPORTATION PACKAGE

Background.

On April 6, 2017, a meeting was held in Rockville, Maryland, at the request of Global Nuclear Fuel - Americas, LLC (GNF-A) with U.S. Nuclear Regulatory Commission (NRC) staff to introduce "FeCrAl" cladding type lead test assemblies as part of a future letter authorization request on the Model No. RAJ-II transportation package. The staff noted in Enclosure 1 that GNF-A participants are also affiliated with General Electric Hitachi (GEH).

The meeting was noticed on March 23, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17082A294) and included open and closed portions. The list of meeting attendees, including those participating by telephone, is provided in Enclosure 1. The publicly available meeting handout is provided in Enclosure 2. The non-publicly available meeting handout is provided in Enclosure 3.

Discussion.

The primary purpose of the meeting was to be introduced to the "FeCrAl" cladding program. This program was in response to an initiative taken by the U.S. Department of Energy (DOE) to develop an "accident tolerant fuel." The presenter noted that as part of this program, the "FeCrAl" cladding type was considered a promising candidate from the DOE's Accident Tolerant Fuel (ATF) program. The ATF program began in 2010 and resulted in two reports developed by GEH, which assessed the various fuel technologies and developed a strategy to deploy the advanced fuel technologies. This cladding is considered a ferritic steel and consists of mostly iron, then chromium and aluminum, and some molybdenum. GNF-A described that the benefits of this alloy include resistance to cracking, corrosion, and radiation damage.

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**Upon removal of Enclosure 3, this  
document is uncontrolled.**

A. Hsia

- 2 -

Additionally, the alloy has low hydrogen absorption, a low coefficient of thermal expansion, and a high thermal conductivity. GNF-A expects that this new fuel type will be delivered in lead test assembly quantities to multiple sites over the next three years.

GNF-A requests to have the first letter authorization completed by the end of calendar year 2017 to support their first shipment. GNF-A also expects to come in for a pre-submittal meeting in mid-May 2017 to discuss the submittal of their first letter authorization. Staff provided some suggestions to GNF-A such as requesting that the cladding material mechanical properties data will be justified rigorously. Staff also suggested that since the fuel assembly is the containment boundary in the package, and this is a new fuel assembly design, GNF-A should clearly describe the effects of testing related to hypothetical accident conditions on the new fuel assembly design.

Docket No. 71-9309  
CAC No. L25207

Enclosures:

1. Meeting Attendees
2. Meeting Handout (Publicly available)
3. Meeting Handout (Non-publicly available)

A. Hsia

- 3 -

SUBJECT: SUMMARY OF APRIL 6, 2017 MEETING WITH GLOBAL NUCLEAR FUEL - AMERICAS, LLC, REGARDING FUTURE LETTER AUTHORIZATION ON THE MODEL NO. RAJ-II TRANSPORTATION PACKAGE: APRIL 24, 2017

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This closes CAC No. L25207.

**ADAMS Package Accession No.: ML17115A090**

<b>OFFICE:</b>	DSFM	E	DSFM	E	DSFM		DSFM	
<b>NAME:</b>	HAkhavannik		NGarcia-Santos		SFigueroa		JMcKirgan	
<b>DATE:</b>	04/13/17		4/17/17		4/14/17		4/24/17	

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Meeting Attendees  
GNF-A and NRC Meeting  
April 6, 2017, 9:00 a.m. – 11:00 a.m.

<b>NAME</b>	<b>AFFILIATION</b>
Justin Lamy	GNF-A/GEH
Russ Fawcett	GNF-A/GEH
Huda Akhavannik	NRC/NMSS/DSFM
Charles Paone	GNF-A/GEH
Paul Cantonwine	GNF-A/GEH
Lisa Schichlein	GNF-A/GEH
Dan Lutz	GNF-A/GEH
Kate Martin	GNF-A/GEH
Vickie Perry	GNF-A/GEH
Christopher Kmiec	GNF-A/GEH
James Harrison	GNF-A/GEH
Kathryn Martin	GNF-A/GEH
Caylee Kenny	NRC/NMSS/DSFM
Joseph Borowksy	NRC/NMSS/DSFM
Erik Kirstein	GNF-A/GEH
Shawn Lamb	GNF-A/GEH
Alexis Sotomayor-Rivera	NRC/NMSS/DSFM
Andrew Barto	NRC/NMSS/DSFM
Ricardo Torres	NRC/NMSS/DSFM
Yong Kim	NRC/NMSS/DSFM
Norma Garcia-Santos	NRC/NMSS/DSFM