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

March 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 FEBRUARY 28, 2017, MEETING WITH WESTINGHOUSE ELECTRIC COMPANY LLC, TO DISCUSS CHANGES ASSOCIATED WITH THE MODEL NO. TRAVELLER PACKAGE AMENDMENT REQUEST

Background.

On February 28, 2017, United States Nuclear Regulatory Commission (NRC) staff met in Rockville, Maryland, at the request of the Westinghouse Electric Company LLC (Westinghouse or the applicant) to discuss the application submitted on February 10, 2017, Agencywide Documents Access and Management System (ADAMS) Accession No. ML17041A360), to primarily change the criticality methodology in the safety analysis report (SAR) and to add uranium silicide fuel rods as a content for the Model No. Traveller transport package. Previously, in September 2016, the applicant came in for a pre-application meeting to discuss their future amendment (ADAMS Accession No. ML16293A660).

The meeting was noticed on February 16, 2017 (ADAMS Accession No. ML17047A015). The list of meeting attendees, including those participating via telephone, is provided as Enclosure 1. The meeting handout is provided as Enclosure 2.

Representatives from Westinghouse and Daher-TLI attended and participated during the meeting. Staff from headquarters also attended the meeting. No regulatory decisions were made at this meeting.

Discussion.

The primary purpose of the meeting was to discuss the submittal of the application for amendment to the Model No. Traveller transportation package. The application contains a complete revision of the criticality chapter, chapter 6, and includes the concept of “categorized fuel assemblies (CFAs).” Each CFA represents a combination of fuel types that have bounding fuel parameters. The application also revises the method for establishing subcriticality and uncertainties. Additionally, the code used has been updated to SCALE 6.1.2 and SCALE model.

In addition to the changes made to criticality, the applicant indicated that editorial clarifications were made to Chapters 1, 4, 5, 7, and 8. Chapters 7 and 8 include some additional details which apply to the current use of the packages and activities that are applicable to all sites using the packages. Chapters 2 has more changes in that hypothetical accident testing performance information on the VVER configuration of the package is added. Chapter 3 has minor changes including additional details of the moderator blocks' post fire test conditions to support the criticality analysis.

The majority of the meeting was spent discussing the revised criticality methodology. The new methodology groups 17 fuel designs into 11 fuel assembly "bins." By doing this, the fuel assemblies can be described more generically and detailed proprietary information on the fuel assembly designs are not needed in the certificate of compliance. The analysis also includes increasing the criticality safety index (CSI) of the package. The CSI is increased from 0.7 to 1.0 for 9 of the 11 bins and from 0.7 to 4.2 for two of the bins. The bins share three primary parameters (array size, fuel rod pattern, and nominal fuel rod pitch) and are analyzed to find the bounding configuration. Secondary parameters (fuel pellet diameter, cladding inner diameter, and cladding thickness) determine the range of acceptability for a given bin and every permutation of the parameters is examined for each bin in the analysis. From these permutation analyses, the applicant concluded that minimized secondary parameters bound a bin and these parameters define the contents specification in the certificate of compliance.

The applicant also included discussions on the cumulative effects of lattice expansion, flooding, and position of the fuel assembly and also performed sensitivity studies. These sensitivity results determined the maximum k-effective for normal conditions of transportation and hypothetical accident conditions and the upper subcriticality limit for each group of package arrays.

The applicant also evaluated loose rod contents and included discussion for the uranium silicide loose rods. The analyses limits 60 fuel rods to a pipe and increased the CSI from 0.0 to 0.7. Sensitivity studies determined the maximum k-effective for the normal conditions of transportation and hypothetical accident conditions and the upper subcriticality limit.

The applicant indicated that they intend to maintain the last two revisions of the certificate of compliance valid since they are used for international shipments. Additionally, the applicant indicated that they submitted an incorrectly marked version of the SAR and intend to submit a SAR with correct proprietary markings and also a CD containing the criticality input/output files in the near future.

Docket No. 71-9297
TAC No. L25190

Enclosures:
1. Meeting Attendees
2. Meeting Handouts

SUBJECT: SUMMARY OF FEBRUARY 28, 2017, MEETING WITH WESTINGHOUSE ELECTRIC COMPANY LLC, TO DISCUSS CHANGES ASSOCIATED WITH THE MODEL NO. TRAVELLER PACKAGE AMENDMENT REQUEST: MARCH 24, 2017

DISTRIBUTION:
SFM r/f, DForsyth, JChang

G:\SFST\Akhavannik\Traveller\2017\02282017 Public Meeting Summary.docx
G:\SFST\Akhavannik\Traveller\2017\ NRC_WEC_2.28.17_nonpropr.pdf
ADAMS Package No.: ML17083A970 Memo: ML17083B203 Encl 2: ML17086A016

OFC:	SFST	E	SFST		SFST			
NAME:	HAkhavannik		SFigueroa		JMcKirgan			
DATE:	3/10/2017		3/13/2017		3/24/17			

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

Meeting Attendees
Westinghouse Electric Company LLC and NRC Meeting
February 28, 2017, 9:00 a.m. – 12:00 p.m.

NAME	AFFILIATION	PHONE NUMBER
Charlie Murphy	Daher-TLI	301-421-4063
Tanya Sloma	Daher-TLI	301-531-9301
Huda Akhavannik	NRC/NMSS/SFM	301-415-5253
Wes Stilwel	Westinghouse	803-647-3438
Daniel Forsyth	NRC/NMSS/SFM	301-415-7194
Jimmy Chang	NRC/NMSS/SFM	301-415-7427
Brian Hempy	Westinghouse	
Camille Zozula	Westinghouse	