

December 23, 2013

MEMORANDUM TO: Stephanie Coffin, Acting Deputy Director
Division of Spent Fuel Storage and Transportation, NMSS

FROM: Bernard White, Senior Project Manager */RA/*
Licensing Branch
Division of Spent Fuel Storage and Transportation, NMSS

SUBJECT: SUMMARY OF DECEMBER 12, 2013, MEETING ON PROPOSED
AMENDMENTS TO MODEL NOS. NAC-LWT AND NAC-STC
TRANSPORTATION PACKAGES AND MAGNASTOR STORAGE
SYSTEM (TAC NO. L24708)

Background

A meeting was held on December 12, 2013, in Rockville, Maryland, between the U.S. Nuclear Regulatory Commission (NRC) and NAC International, Inc. (NAC), to discuss NAC's proposed amendment to add West Valley high-level waste (HLW) and uncanistered high burnup fuel to the Model No. NAC-STC package as authorized contents; amendment number 5 to the Model No. MAGNASTOR storage system; and response to the NRC's request for additional information on NAC's amendment to add high enriched uranyl nitrate liquid (HEUNL) to the Model No. NAC-LWT package as authorized contents.

The meeting was noticed on November 22, 2013 (see Agencywide Documents Access and Management System (ADAMS) Accession No. ML13326A784). The meeting attendance list is provided as Enclosure No. 1.

Discussion:

Overview

The discussion generally followed the agenda (Enclosure No. 2). In the open portion of the meeting, NAC provided an overview of the three certification actions. NAC's proposed amendment to the NAC-STC package includes adding five West Valley Demonstration Project HLW containers in a HLW overpack. The overpack would be loaded into the NAC-STC package similar to a welded canister for spent fuel. In the same application, NAC also requested approval to transport uncanistered 17x17 pressurized-water reactor (PWR) fuel assemblies with a maximum burnup of 60,000 MWd/MTU.

NAC discussed its upcoming MAGNASTOR amendment 5 request, which will include new preferential loading pattern for PWR fuel assemblies, while retaining the maximum heat load currently authorized. There will be a general reduction in fuel cooling times and a reduction in cooling times for reactor control rod assemblies. In addition, there may be four other revisions to boiling-water reactor (BWR) fuel assemblies that may be included in the application.

NAC discussed the status of its responses to the NRC's request for additional information on NAC's amendment to HEUNL as an authorized content in the NAC-LWT package. Since

receiving NRC's request, NAC has been working with its client to address questions on material characteristics, implemented design changes, and loading requirements. NAC expects to submit its response in the first quarter of 2014.

NAC-STC Technical Discussion

NAC has not proposed any changes to the NAC-STC package body or lid. The overpack containing the HLW will be centered in the package to provide the greatest amount of radiation shielding. The package's center of gravity will remain unchanged. The HLW contents will not need a criticality evaluation, since the quantity of fissile material will meet at least one fissile material exemption limit in Title 10 of the *Code of Federal Regulations*, Part 71. The dose rates from the package containing the HLW are well below regulatory limits, and the package decay heat is less than 2 kW. The content's weight and distribution is bounded by previous contents.

NAC discussed the proposed spent fuel loading configurations, thermal evaluation of the proposed high burnup spent fuel assemblies and temperature effects on fuel material properties. NAC briefly discussed the fuel assemblies structural evaluation and its results.

MAGNASTOR Amendment 5 Technical Discussion

NAC discussed both the technical evaluations and timing of this amendment. NAC also discussed the potential items that may be included and provided a few more details on the revisions.

HEUNL Technical Discussion

NAC discussed the changes to the criticality evaluation based on NRC's request for additional information. NAC also discussed the changes to the structural evaluation, determination of maximum pressure, potential for chemical and galvanic reactions, and gas generation.

Public Comments:

There were approximately 20 external stakeholders on the phone line. At the end of the meeting, the public was given the opportunity to ask questions or make comments about the proposed certification actions. The majority of the public comments were centered on the three proposed certification actions.

Docket Nos. 71-9225, 71-9235, and 72-1031
TAC No. L24708

Enclosures:

1. Meeting Attendees
2. Agenda
3. Presentation Slides (proprietary)
4. Presentation Slides (non-proprietary)

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Distribution: (closes TAC No. L24805) NRC Attendees

ADAMS P8 Package No.: ML13357A736 ADAMD P8 Memo No.: ML13357A757

OFC	SFST		SFST		SFST	
NAME	BWhite		MDeBose		KBanovac for MSampson	
DATE	12/17/13		12/ 17 /13		12/23/13	

"C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy
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MEETING ATTENDEES

Meeting Title: Meeting to discuss proposed amendments to NAC-LWT and NAC-STC transportation package and MAGNASTOR storage system.

Participants: NAC International, Inc., and the NRC

Date: December 12, 2013, 8:30 – 3:00 p.m.

Location: U.S. NRC Headquarters, TWFN 6D44

NAME	AFFILIATION
Bernie White	NRC/NMSS/SFST
Holger Pfeifer	NAC International
Jamie Adam	NAC International
Michael Conroy	Department of Transportation
Eli Goldfiez	NRC/NMSS/SFST
Christopher Eckert	Department of Energy
James Prowse	Department of Energy
Heatherly Dukes	CHBWV
Meraj Rahimi	NRC/NMSS/SFST
Michele Sampson	NRC/NMSS/SFST
Craig Seaman	NAC International
Wren Fowler	NAC International
Mike Yaksh	NAC International
Norma Garcia-Santos	NRC/NMSS/SFST
Jorge Solis	NRC/NMSS/SFST
Christian Araguas	NRC/NMSS/SFST
Mark Lombard	NRC/NMSS/SFST
Jason Piotter	NRC/NMSS/SFST

NAME	AFFILIATION
John-Chau Nguyen	NRC/NMSS/SFST
Davis Schroeder	NAC International
George Carver	NAC International
James Balfore	NAC International
Joe Borowsky	NRC/NMSS/SFST
Ricardo Torres	NRC/NMSS/SFST
David Tang	NRC/NMSS/SFST
Craig Hrabal	NRC/NMSS/SFST
JoAnn Ireland	NRC/NMSS/SFST
Maureen Conley	NRC/OPA
Robert Einziger	NRC/NMSS/SFST
Pamela Longmire	NRC/NMSS/SFST

Meeting attendees on the phone:

NAME
Connie Young
Chuck Messick
Tom Clements
Ian MacLeod
Barbara Warren
Michael Keegan
Mitch McKay
Sylvain Faille
Jeffrey Ramsay
Rajesh Garg
Pierre Tanguay
Vladimir Khotylev
Steve Mihok

Name
Jennifer Nalbone
Paul Bembia
Terry Lodge
Alfred Myers
Carlyn Green
Mark Chapman
Dianne Darrigo
Glenn Mathues
Diego Estan
Lee Casterton
Lisa Donnelly
Saul Dawolu

Agenda for the
Model Nos. NAC-LWT, NAC-STC and MAGNASTOR
Partially Closed Meeting
December 12, 2013 8:30 a.m. – 3:00 p.m.

- Purpose: To discuss NAC's proposed:
- response to the U.S. Nuclear Regulatory Commission's request for additional information on the amendment to add high enriched uranyl nitrate liquid contents to the Model No. NAC-LWT package;
 - amendment to add West Valley high-level waste and uncanistered high burnup fuel contents to the Model No. NAC-STC package; and
 - amendment number 5 to the Model No. MAGNASTOR storage system.

Public Portion Agenda

8:30am – 9:30am

1. Introductions and opening remarks
2. Overview and schedule of amendment applications
 - a. NAC-STC West Valley Demonstration Project high-level waste and uncanisterized high burnup fuel
 - b. MAGNASTOR amendment number 5
 - c. NAC-LWT high enriched uranyl nitrate liquid
3. Closing remarks and public questions

Closed Portion Agenda

9:30am – 11:00am

1. NAC-STC West Valley Demonstration Project high-level waste and uncanisterized high burnup fuel
 - a. Detailed discussion of West Valley Demonstration Project high-level waste application
 - b. Detailed discussion of uncanisterized high burnup fuel application
2. MAGNASTOR amendment number 5
 - a. Fuel enhancements for new projects and new hardware designs

11:00am - Noon

3. General overview of the NAC-LWT high enriched uranyl nitrate liquid

Noon – 1:00pm (Lunch)

1:00pm – 3:00pm

4. NAC-LWT high enriched uranyl nitrate liquid
 - a. Detailed technical overview of current design and changes
 - b. Detailed discussion of open requests for additional information
5. Closing remarks and questions