



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

July 15, 2016

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

**FROM:** Kristina L. Banovac, Project Manager **/RA/**  
Renewals and Materials Branch  
Division of Spent Fuel Management  
Office of Nuclear Material Safety  
and Safeguards

**SUBJECT:** SUMMARY OF JUNE 15, 2016, MEETING WITH THE U.S.  
DEPARTMENT OF ENERGY TO DISCUSS THE UPCOMING  
SUBMITTAL OF THE APPLICATION FOR RENEWAL OF THE THREE  
MILE ISLAND UNIT 2 INDEPENDENT SPENT FUEL STORAGE  
INSTALLATION LICENSE (SNM-2508) (CAC NO. L25118)

Background

On June 15, 2016, a meeting was held in Rockville, MD, between representatives of the U.S. Department of Energy (DOE) and the U.S. Nuclear Regulatory Commission (NRC) to discuss the upcoming submittal of the application for renewal of the Three Mile Island Unit 2 (TMI-2) Independent Spent Fuel Storage Installation (ISFSI) license, SNM-2508. The list of meeting attendees is provided in Enclosure 1.

The meeting was noticed on May 25, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16147A620).

Discussion

The meeting discussion followed the meeting agenda, which is provided in Enclosure 2. DOE provided opening remarks regarding the unique aspects of the TMI-2 ISFSI, including that the material stored is fuel debris from the TMI-2 reactor core. DOE gave a presentation on the planned TMI-2 ISFSI license renewal application, which is included in Enclosure 3. DOE plans to request a 20-year period of extended operation and plans to submit the license renewal application in March 2017. The presentation covered information on:

- the TMI-2 ISFSI and dry storage system design;
- overview of the license renewal application approach;
- information on pre-application inspections of the horizontal storage module (HSM) exterior, the dry shielded canister (DSC) exterior, and HSM interior, including the DSC support structure;

- preliminary information on the planned license renewal application, including the scoping evaluation, aging management review, and potential aging management activities for the various structures, systems, and components (SSCs); and
- the supplemental environmental report.

The following items were discussed between DOE and NRC representatives during the meeting:

- The NRC staff asked about the drying process for the DSC and the potential for residual water. DOE noted that it used vacuum drying and that water is available due to the natural aspiration of the vented DSCs with the ambient air.
- Regarding the four exemptions that are currently included in the TMI-2 ISFSI license, DOE asked if these could be removed as part of the renewal if they were determined to be no longer applicable to the license. The NRC staff noted that proposed changes to the licensing or design bases should not be included in the renewal application. However, editorial or administrative clarifications or corrections that do not change the design bases may be included. If DOE determines that the exemptions are no longer applicable to the current license, it may propose removing these as an administrative change in the renewal application.
- DOE noted that its aging assessment of the neutron absorbers is like a time-limited aging analysis (TLAA), but it may not meet all of the criteria of a TLAA. The NRC staff noted that if an analysis is not a TLAA by definition, it may still be included in the renewal application to support the aging management review (e.g., to exclude an aging mechanism or effect or show that an aging effect doesn't need to be managed). This idea is included in NUREG-1927, Revision 1.
- Regarding the aging effects and mechanisms requiring management for the HSM concrete, the NRC staff noted that additional degradation mechanisms are applicable to concrete and encouraged DOE to review the Managing Aging Processes in Storage (MAPS) Report when it is made publicly available as a draft later this summer. These additional degradation mechanisms should be considered in the aging management review.
- The NRC staff asked about the HSM concrete cracking and whether DOE only conducted a visual inspection or whether it also took resistivity measurements. DOE stated that it conducted visual inspections and took gamma radiation measurements.
- The TMI-2 canister provides the geometric configuration of fuel debris for the criticality evaluation. The NRC staff noted that the license renewal application would need to show that the TMI-2 canisters will continue to maintain the fissile material in the analyzed configuration in the period of extended operation.
- The NRC staff asked whether DOE considered operating experience related to the VSC-24 dry storage system, including the issues identified in Confirmatory Action Letter 97-7-001 (ADAMS Accession No. ML060620420), and whether this operating experience is applicable to the TMI-2 ISFSI and dry storage system materials. The NRC staff noted that Interim Staff Guidance (ISG)-15, "Materials Evaluation," addressed this operating experience, but this ISG was issued in 2001 after the TMI-2 license was

issued. DOE noted that it will consider this information as it continues to prepare the renewal application.

- The NRC staff noted that for development of the aging management programs (AMPs), the method or technique for detection of aging effects should be demonstrated to be capable of evaluating the condition of the SSC against the acceptance criteria for the specific aging mechanism or effect being monitored or inspected.
- DOE noted that the transfer cask is considered an in-scope SSC, but DOE does not own a transfer cask or have a transfer cask at the site. DOE noted that it is not currently planning to develop an AMP for the transfer cask. It explained that if a transfer cask was needed, as part of a future quality controlled procurement with AREVA-TN, it would ensure that the transfer cask met all design and licensing bases requirements for use at the TMI-2 ISFSI and has been appropriately maintained and is ready for use. The NRC staff noted that this information should be provided in the renewal application, including discussion of whether DOE will rely on a NRC-approved AMP for a transfer cask for the 10 CFR Part 72 Certificate of Compliance No. 1004, if DOE will conduct a pre-operational inspection prior to use of a transfer cask, and when a transfer cask may be needed, as DOE indicated it is not needed for off-normal or accident conditions in the current licensing bases.

The NRC staff provided information on its ongoing work to develop guidance for spent fuel storage renewals. The staff noted that NUREG-1927, Revision 1, "Standard Review Plan for Renewal of Specific Licenses and Certificates of Compliance for Dry Storage of Spent Nuclear Fuel," is expected to be issued as final in summer 2016. Following the meeting, NUREG-1927, Revision 1 was issued on June 29, 2016, and is located at ADAMS Accession No. ML16179A148. The staff is currently developing a draft MAPS report, which will provide an acceptable generic approach to the identification of credible aging effects in dry storage systems and appropriate aging management activities needed to address these aging effects. The staff expects to have a version of the draft MAPS report, for coordination with the Advisory Committee on Reactor Safeguards, publicly available in ADAMS later this summer.

After DOE and NRC representatives completed their discussion, the meeting was opened to public comments or questions. There were no public comments or questions.

### **Action Items/Next Steps**

DOE plans to submit the TMI-2 ISFSI license renewal application in March 2017.

Docket No. 72-20  
CAC No. L25118

#### Enclosures:

1. Meeting Attendees
2. Agenda
3. Handout – DOE Presentation on TMI-2 ISFSI License Renewal Application

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**ADAMS Package No.: ADAMS Accession No.: ML**

**Enclosure 3: ML**

<b>OFC</b>	NMSS/DSFM	NMSS/DSFM	NMSS/DSFM
<b>NAME</b>	KBanovac	WWheatley	ACsontos
<b>DATE</b>	7 / 11 / 16	7 / 11 / 16	7 /15/ 16

## MEETING ATTENDEES

Public Meeting with U.S. Department of Energy (DOE) to discuss the upcoming submittal of the application for renewal of the Three Mile Island Unit 2 Independent Spent Fuel Storage Installation license (SNM-2508)

June 15, 2016, 1:30 – 3:30 p.m.

Kristina Banovac	NRC/NMSS/DSFM
Darrell Dunn	NRC/NMSS/DSFM
Wendy Reed	NRC/NMSS/DSFM
Meg Audrain	NRC/NMSS/DSFM
John McKirgan	NRC/NMSS/DSFM
Tae Ahn	NRC/NMSS/DSFM
John Wise	NRC/NMSS/DSFM
Mark Lombard	NRC/NMSS/DSFM
Greg Oberson (via teleconference)	NRC/RES
Scott Ferrara	DOE
Nick DiNunzio	DOE
Richard Craun	DOE
Greg Sosson	DOE
Steve Ahrendts (via teleconference)	DOE
Bert Gawthorp (via teleconference)	DOE
Roger Claycomb (via teleconference)	DOE
Carl Hugo (via teleconference)	DOE
Gregory Hall	Spectra Tech Inc. (STI)
Rick Hansen (via teleconference)	STI
Jeff Long (via teleconference)	STI
John Coody	STI / AREVA Federal Services
Chris Backus	STI / AREVA Federal Services
Brian Gutherman	STI / Gutherman Technical Services
David Bland	STI / TRIVIS
Don Shaw	AREVA TN
Carlyn Greene (via teleconference)	UxC

## MEETING AGENDA

Meeting with U.S. Department of Energy

June 15, 2016

1:30 – 3:30 p.m. (Eastern Daylight Time)

One White Flint North Building, O-7B4

**Purpose:** U.S. Department of Energy (DOE) to discuss the upcoming submittal of the application for renewal of the Three Mile Island Unit 2 Independent Spent Fuel Storage Installation license (SNM-2508).

### Agenda:

- Welcome, introductions, and meeting objectives
- DOE presentation and discussion
- Public questions or comments
- Wrap-up and closing remarks
- Meeting adjourned

HANDOUTS