



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

October 19, 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 SEPTEMBER 27, 2016, MEETING WITH SACRAMENTO  
MUNICIPAL UTILITY DISTRICT TO DISCUSS THE UPCOMING  
SUBMITTAL OF THE APPLICATION FOR RENEWAL OF THE RANCHO  
SECO INDEPENDENT SPENT FUEL STORAGE INSTALLATION  
LICENSE (SNM-2510) (CAC NO. L25142)

Background

On September 27, 2016, a meeting was held in Rockville, MD, between representatives of Sacramento Municipal Utility District (SMUD) and the U.S. Nuclear Regulatory Commission (NRC) to discuss the upcoming submittal of the application for renewal of the Rancho Seco Independent Spent Fuel Storage Installation (ISFSI) license, SNM-2510. The list of meeting attendees is provided in Enclosure 1.

The meeting was noticed on August 30, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16239A155).

Discussion

The meeting discussion followed the meeting agenda, which is provided in Enclosure 2. SMUD gave a presentation on the planned Rancho Seco ISFSI license renewal application, which is included in Enclosure 3. SMUD plans to request a 40-year period of extended operation and plans to submit the license renewal application in March 2018. The presentation provided information on:

- the Rancho Seco ISFSI, licensing and loading history, and dry storage system design;
- the license renewal application approach, schedule, and preliminary information on the scoping evaluation and aging management review; and
- the planned pre-application inspections of the dry storage canister confinement boundary and horizontal storage modules.

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

- SMUD clarified that the design bases for the seismic horizontal ground motion in the Rancho Seco ISFSI final safety analysis report (FSAR) is 0.05g. The NRC staff noted that Title 10 of the *Code of Federal Regulations* (10 CFR) 72.102 contains requirements related to geological and seismological characteristics for ISFSI applications before October 16, 2003 (such as Rancho Seco). The requirements specify that for sites that have been evaluated under the criteria of Appendix A of 10 CFR Part 100, the design earthquake must be equivalent to the safe shutdown earthquake used for the nuclear power plant. The requirements also specify that in any case, the design earthquake must have a value for the horizontal ground motion of no less than 0.10g with the appropriate response spectrum. The staff noted that the renewal application could clarify any details regarding the approved design bases for the Rancho Seco ISFSI.
- The NRC staff asked if structures, systems, and components (SSCs) that are not in the scope of the renewal (e.g., ISFSI approach apron) would still be maintained for eventual transport of the fuel offsite. SMUD confirmed that these SSCs are maintained, and the operability of any transportation-related SSCs would be determined before transport.
- The NRC staff asked about the six fuel assemblies that were retrospectively classified as damaged, which was addressed in Amendment No. 3 to License No. SNM-2510. SMUD clarified that at the time of its visual inspection of the fuel (in 1996), the fuel classification criteria for damaged fuel was cladding failures with breeches greater than 25% of the circumference of the fuel pin and at least the length of a fuel pellet. SMUD used the results of this inspection to determine which assemblies must be placed in a failed fuel dry storage canister (DSC). The fuel classification criteria evolved over time and became more restrictive, where intact fuel is defined as no known or suspected cladding defects greater than hairline cracks or pinhole leaks. This prompted SMUD to review their visual inspection records for fuel classification. SMUD identified six assemblies that had been loaded as intact assemblies by the old definition, but which would be classified as damaged by the new definition because they were suspected of having defects greater than hairline cracks or pinhole leaks. SMUD also noted that if the video wasn't of sufficient quality to determine if fuel was intact, SMUD took a conservative approach and classified it as damaged fuel.
- The NRC staff mentioned neutron absorber degradation and recommended that SMUD review the draft Managing Aging Processes in Storage (MAPS) Report for discussion of neutron absorber degradation and Boral® blistering.
- SMUD noted that there is a lack of a saline atmosphere at the Rancho Seco ISFSI, as it is 100 miles inland of the ocean. There are no nearby cooling towers in use. Also, there has only been one measurable snow event since the ISFSI was licensed, and snow management practices are not in use in the area.
- SMUD noted that it expects to conduct the pre-application inspections in the first or second quarter of 2017. The NRC staff requested SMUD to keep the NRC informed of its plans and timing for the inspections. The NRC staff asked how SMUD will access the DSCs for inspection and the expected extent of coverage of the DSC that will be inspected. SMUD noted that it does not have these details yet and will begin its

inspection planning soon, which will include assessing the currently available inspection capabilities and technologies. SMUD also clarified that the three types of canisters in use at the Rancho Seco ISFSI have the same external dimensions. SMUD noted that there is not much variability in the contents and time since fuel was loaded.

- SMUD clarified that it has not yet developed inspection frequencies for aging management programs (AMPs), as it is still in the early stages of the aging management review and the renewal application development. SMUD expects to have these details available by the next pre-application meeting, which it expects to occur in the spring 2017 timeframe.
- The NRC staff noted that it is helpful for the staff's review if the application contains the aging management review details (as tables of SSCs, materials, environments, and aging mechanisms and effects) in an electronic file that can be sorted. SMUD noted that it is planning to do so and also plans to submit the entire renewal application as an electronic submittal.
- The NRC staff noted that it is helpful for the staff's review if the application presents a clear technical basis for whether a degradation mechanism is or is not credible. The staff mentioned the 10 CFR Part 72 Certificate of Compliance 1004 renewal application as an example of the presentation of this information.
- The NRC staff noted that the current version of NUREG-1748, "Environmental Review Guidance for Licensing Actions Associated with NMSS [Office of Nuclear Material Safety and Safeguards] Programs," is the 2003 Rev. 0 version, but the staff is planning to update this guidance. The staff also noted that the environmental report submitted with the application should address any changes to the affected environment since the original environmental report submittal, including the new solar and gas energy installations that SMUD mentioned in its presentation.
- The NRC staff noted that 10 CFR 72.30 was revised in 2011 and now requires a decommissioning funding plan update to be submitted at the time of renewal. The staff noted that if there are no changes to the latest docketed decommissioning funding plan submittal, SMUD can reference the previous submittal in its renewal application.
- SMUD representatives asked NRC staff about the expected schedule for NRC's review of the renewal application. The NRC staff noted that it has not yet established a schedule for review of the Rancho Seco ISFSI renewal application. The staff would communicate its review schedule to SMUD in the acceptance letter of the renewal application, if the application is accepted for a detailed technical review.

After SMUD and NRC representatives completed their discussion, the meeting was opened to public comments or questions.

Donna Gilmore noted that Chapter 2 of the Rancho Seco ISFSI FSAR indicates the presence of marine air and noted that SMUD should take samples of any deposits on the canister surface. Ms. Gilmore asked about the MP187 transfer cask and whether SMUD has performed analyses for using the MP187 for transporting a leaking canister. The NRC staff noted that the MP187 cask is approved by the NRC for transportation and would serve as the containment boundary during transport. As part of the containment qualification, the MP187 needs to meet the

containment requirement given 100% fuel failure under accident conditions without credit for the canister. The NRC staff also noted that the focus of an ISFSI license renewal is on continuation of the approved ISFSI design bases in the period of extended operation. Ms. Gilmore noted that a tank at the Koeberg plant in South Africa had a through-wall crack within 17 years, and SMUD canisters have been in service since 2001 and are approaching 17 years in storage. The NRC staff noted that the environments in Koeberg and Rancho Seco are very different in terms of salt deposition rates.

Ace Hoffman noted that even though the ocean may be 100 miles away, there are bays that contain salt water that extend 40 miles inland. He also noted that as the Sacramento River is drained for agricultural purposes, the salinity of the river water increases. Mr. Hoffman also asked about the canisters stored in a horizontal position and if they need to be rotated to distribute the pressure between the fuel pellets. The NRC staff noted that there is no requirement to rotate the canisters. The staff also noted that cladding stresses are significantly lower in low-burnup fuel (which is stored at the Rancho Seco ISFSI) because there is less fuel pellet expansion and less fission product generation during reactor irradiation. Pellet expansion is accounted for in fuel design by providing a gap between the pellet and the cladding. Mr. Hoffman asked about highways around the site and whether any earthquakes have affected the ISFSI. The NRC staff noted that the environmental report submitted with the renewal application would address the affected environment, including transportation routes. Also, if there were any earthquakes that affected the ISFSI, SMUD would need to assess this operating experience in its development of the AMPs.

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

As SMUD continues to prepare its license renewal application, it may request another pre-application meeting with the NRC in the spring 2017 timeframe. SMUD plans to submit the Rancho Seco ISFSI license renewal application in March 2018.

Docket No. 72-11

CAC No. L25142

### **Enclosures:**

1. Meeting Attendees
2. Agenda
3. Handout – SMUD Presentation on Rancho Seco Specific ISFSI License Renewal

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ADAMS Package No.: ML16295A039 ADAMS Memo No.: ML16295A041

Enclosure 3: ML16295A042

<b>OFC</b>	NMSS/DSFM	NMSS/DSFM	NMSS/DSFM
<b>NAME</b>	KBanovac	SFigueroa	MRahimi
<b>DATE</b>	10 / 12 / 16	10 / 13 / 16	10 / 19 / 16

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## MEETING ATTENDEES

Meeting with Sacramento Municipal Utility District (SMUD) to discuss  
the upcoming submittal of the application for renewal of the Rancho Seco  
Independent Spent Fuel Storage Installation license (SNM-2510)

September 27, 2016, 1:00 – 3:00 p.m.

Kristina Banovac	NRC/NMSS/DSFM
John McKirgan	NRC/NMSS/DSFM
Wendy Reed	NRC/NMSS/DSFM
Tae Ahn	NRC/NMSS/DSFM
Ricardo Torres	NRC/NMSS/DSFM
Marlone Davis	NRC/NMSS/DSFM
John Wise	NRC/NMSS/DSFM
Bob Tripathi	NRC/NMSS/DSFM
Mark Lombard	NRC/NMSS/DSFM
Meraj Rahimi	NRC/NMSS/DSFM
Darrell Dunn	NRC/NMSS/DSFM
Christopher Markley (via teleconference)	NRC/NMSS/DSFM
Eric Simpson (via teleconference)	NRC/Region IV
Dan Tallman	SMUD
Brad Gacke	SMUD
Tom Edwards	AREVA-TN
Mike Lynch	AREVA-TN
Karan Mauskar	AREVA-TN
Girish Patel	AREVA-TN
Prakash Narayanan	AREVA-TN
Don Shaw	AREVA-TN
Dennis Williford (via teleconference)	AREVA-TN
Brian Gutherman	Gutherman Technical Services
Carlyn Greene (via teleconference)	UxC
Donna Gilmore (via teleconference)	Public
Ace Hoffman (via teleconference)	Public
Marvin Lewis (via teleconference)	Public
Diane D'Arrigo (via teleconference)	Nuclear Information and Resource Service
Paul Plante (via teleconference)	The Yankee Companies

Randall Granaas (via teleconference)	Southern California Edison
Timothy Morrison (via teleconference)	Southern California Edison
Mike Callahan (via teleconference)	Governmental Strategies, Inc.
Timothy Smith (via teleconference)	Governmental Strategies, Inc.
Aparna Alleshwaram (via teleconference)	Structural Integrity Associates, Inc.

## MEETING AGENDA

Meeting with Sacramento Municipal Utility District

September 27, 2016

1:00 – 3:00 p.m. (Eastern Daylight Time)

One White Flint North Building, O-4B6

Purpose: Meeting with Sacramento Municipal Utility District (SMUD) to discuss the upcoming submittal of the application for renewal of the Rancho Seco Independent Spent Fuel Storage Installation license (SNM-2510).

### Agenda:

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



## HANDOUTS