



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

June 13, 2019

Mr. Dan Tallman  
Manager, Rancho Seco Assets  
Sacramento Municipal Utility District  
Rancho Seco Nuclear Generating Station  
14440 Twin Cities Road  
Herald, CA 95638-9799

SUBJECT: REQUEST FOR CLARIFICATION OF RESPONSE TO ADDITIONAL INFORMATION FOR THE TECHNICAL REVIEW OF THE APPLICATION FOR RENEWAL OF THE RANCHO SECO INDEPENDENT SPENT FUEL STORAGE INSTALLATION LICENSE NO. SNM-2510 (CAC/EPID NOS. 001028/L-2018-RNW-0005; 000993/L-2018-LNE-0004)

Dear Mr. Tallman:

By letter dated March 19, 2018, as supplemented on June 25, 2018, and September 26, 2018, the Sacramento Municipal Utility District (SMUD) submitted an application for renewal of the Rancho Seco Independent Spent Fuel Storage Installation, License No. SNM-2510 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18221A281). The U.S. Nuclear Regulatory Commission (NRC) staff sent a request for additional information (RAI) related to the technical review of the renewal application on November 20, 2018, to which you responded on April 22, 2019 (ML19121A262).

The NRC staff reviewed SMUD's RAI responses and held a teleconference with SMUD on June 4, 2019, to discuss the responses provided (see June 4, 2019, meeting summary at ADAMS Accession No. ML19165A246). After the discussion, SMUD requested that NRC send its remaining questions related to the RAI responses in writing. The enclosure to this letter provides the remaining information needed by the NRC staff to complete its technical review of the application. We request that you provide this information by July 12, 2019.

Please reference Docket No. 72-11 and CAC/EPID No. 001028/L-2018-RNW-0005 in future correspondence related to this request. The NRC staff is available to clarify these questions and, if necessary, to meet and discuss your proposed responses.

If you have any questions regarding this matter, please contact me at (301) 415-7213 or Wendy.Reed@nrc.gov.

Sincerely,

**/RA/**

Wendy A. Reed, Chemist  
Renewals and Materials Branch  
Division of Spent Fuel Management  
Office of Nuclear Material Safety  
and Safeguards

Docket No.: 72-11  
License No.: SNM-2510  
CAC/EPID Nos.: 001028/L-2018-RNW-0005;  
000993/L-2018-LNE-0004

Enclosures:  
RAI clarification request

cc: Rancho Seco ISFSI Service List

Rancho Seco ISFSI Service List

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**ADAMS Accession No.: ML19168A058**

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Request for Additional Information  
Sacramento Municipal Utility District (SMUD)  
Docket No. 72-11  
License No. SNM-2510  
License Renewal

This request for clarification of request for additional information (RAI) responses identifies information needed by the NRC staff to complete its technical review of the license renewal application (LRA) and to determine whether the applicant has demonstrated compliance with the regulatory requirements. The requested information is listed by RAI response number.

**RAI 2-1 clarification**

The staff noted the following regarding information provided in the two cross-matrix tables and additional clarification items identified in Table RAI 2-1-3. Table RAI 2-1-3 was provided in response to RAI 2-1.

1. Drawings NUH-05-1022-FO1 through NUH-05-1025-FO1 listed in the first note at the end of LRA Table 2-6 have not been provided to the NRC. Please provide the drawings.
2. Drawing NUH-05-1053-FC1 Item 2 "Lead Shielding" for the basket assembly is not included in Table 2-6. This SSC seems to be identical to Drawing NUH-05-4004 Item 3 or Drawing NUH-05-1051-FC1 Item 3 "Lead Shielding" for shell assembly in Table RAI 2-1-1. Please clarify.
3. Table RAI 2-1-1 lists drawing NUH-05-1031-FF1 Item 4 "Outer Support Plate" which appears to be incorrect. This SSC should be Drawing NUH-05-1031-FF1 Item 3 "Support Plate". Please clarify.

The information requested in RAI 2-1 is needed to determine compliance with 10 CFR 72.24(c) and 72.42(a).

**RAI 2-2 clarification**

Please clarify the following items identified in Table RAI 2-2-2, which was provided in response to RAI 2-2:

Item #34: The descriptions in LRA Sections B.3.1, B.4.1, B.5.1, B.6.1 and B.3.2, B.4.2, B.5.2, and B.6.2 should be consistent. B.4.1 states: "*The HSM subcomponents subject to aging management review are constructed of the following materials:*" B.4.2 states: "*The HSM subcomponents that are subject to aging management are exposed to the following environments:*"

Since the aging management review is contained in Section 3 of the LRA and Appendix B is the aging management program description, it appears that "*aging management review*" in B.4.1 should be "*aging management*" as stated in B.4.2. Please clarify.

Item #35: Please clarify if there is a typo in the change to LRA Sections B.4.4. The NRC staff believes it should read "*of the aging effects and/or mechanism listed in Section B.4.3*".

Item #38: Please clarify if there is a typo in the change to LRA Sections B.4.5(3). The NRC staff believes it should read "*While no aging mechanisms were identified that would cause other conditions*".

Item #43: Please clarify if there is a missing word in the change to LRA Sections B.6.5(3). The NRC believes the following sentence should include the word "steel." "*(4) loss of material due to general, pitting, and crevice corrosion for carbon steel reinforcing bars*".

The information requested in RAI 2-2 is needed to determine compliance with 10 CFR 72.24(c) and 72.42(a).

### **RAI 2-8 Clarification**

RAI 2-8 requested, in part, that the licensee provide a justification as to why the guide tubes did not provide a criticality safety function during the extended period of operation. The response to the RAI stated that the guide tubes solely support the structural safety function as shown in LRA Table 2-9, and that this conclusion is solely consistent with the intended safety functions of the components list in Table 4-25 of NUREG-2214, Managing Aging Processes in Storage Report, Draft for Comment (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17289A237).

The NRC bases an ISFSI license renewal on the continuation of the approved design bases through the period of extended operation. After reviewing Section 3.3.4 of the Rancho Seco Final Safety Analysis Report, NRC staff determined that the guide tubes are explicitly modeled in the Rancho Seco criticality safety evaluations. In describing the criticality models, Section 3.3.4.3.1 specifically identifies that a minimum thickness was employed to model the guide tubes. In addition, Section 3.3.4.3.1 also identifies that KENO input files for the criticality calculations can be found in Appendix 6.6.2 of the MP187 Part 71 safety analysis report. NRC staff reviewed these KENO input files and found the guide tubes explicitly identified. Consequently, the staff found that the explanation provided in the previous paragraph did not adequately justify the licensee's scoping determination because the guide tubes serve a criticality function by displacing water which decreases the neutron multiplication factor ( $k_{eff}$ ).

The NRC requests the licensee supplement their response to RAI 2-8 by providing further justification as to why the guide tubes do not perform a criticality safety function during the extended period of operation. Alternatively, the licensee could modify the scoping of the guide tubes to include a criticality function in addition to the structural function for which the guide tubes are currently shown to scope into the renewal review.

The information requested in RAI 2-8 is needed to determine compliance with 10 CFR 72.42(a).

### **RAI 3-2 Clarification**

RAI 3-2 Part (ii) requested that the licensee clarify why radiation-induced SCC is determined to be an aging effect requiring management. In the RAI response, the gamma dose rate at the beginning of storage to the end of the period of extended operation was calculated using a conversion factor based on the density of concrete, as per Calculation 502917-0500 (part of the information submitted per the NRC's request for supplemental information (ADAMS Accession No. ML18179A255) in June 2018).

The NRC requests the licensee supplement their response to RAI 3-2 by providing an explanation of why a concrete conversion factor was used to calculate dose rate on the canister surface.

The information requested in RAI B-2 is needed to determine compliance with 10 CFR 72.42(a).

### **RAI 3-5 Clarification**

Please clarify if “microbiological chemical attack” should be deleted from the list under “Loss of Material” in LRA Section 3.6.5. This response is related to the Response to RAI B-1.

The information requested in RAI 3-5 is needed to determine compliance with 10 CFR 72.42(a).

### **RAI B-2(1) Clarification**

RAI B-2 (part 1) asked the licensee to address certain inconsistencies detailed in the HSM Aging Management Program (AMP). In the response, SMUD concluded “...that the 10-year inspection frequency referred to in American Concrete Institute (ACI) 349.3R for inaccessible areas and controlled interior environments is appropriate for the inspection frequency of the exterior of the HSM and basemat based on the lack of an aggressive environment and the physical conditions of the HSM and basemat structures.”

The NRC notes that the 10 year inspection frequency in ACI 349.3R is for interior environments. Since the HSMs are stored in an exterior environment, the NRC is requesting that SMUD supplement their response to RAI B-2(1) by providing justification as to why a 10-year inspection interval is appropriate for the HSM AMP.

The information requested in RAI B-2 is needed to determine compliance with 10 CFR 72.24(e) and 72.42(a).

### **RAI B-4 Clarification**

Please clarify if LRA Sections 2.3.1, 2.4.3, 3.7.1, 3.7.5.2 need to be revised. The response to the RAI stated that these sections have been revised; however, they have not. This response is related to the Response to RAI B-5(3).

Please clarify whether Section C.2.4.4 “for inspection of offsite shipment” should be changed to “for inspection or offsite shipment”.

The information requested in B-4 is needed to determine compliance with 10 CFR 72.42(a).