



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
REGION IV  
1600 EAST LAMAR BOULEVARD  
ARLINGTON, TEXAS 76011-4511

March 25, 2021

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

SUBJECT: RANCHO SECO INDEPENDENT SPENT FUEL STORAGE INSTALLATION –  
NRC INSPECTION REPORT 07200011/2021-001

Dear Mr. Gacke:

This letter refers to the U.S. Nuclear Regulatory Commission's (NRC's) announced routine inspection conducted on February 23-24, 2021, of the dry cask storage activities associated with your Independent Spent Fuel Storage Installation (ISFSI). The NRC inspectors discussed the results of this inspection with you and other members of your staff during the on-site final exit meeting conducted on February 24, 2021. The inspection results are documented in the enclosure to this letter.

The inspectors examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of selected examination of procedures and representative records, observations of dry cask storage surveillance operations, and interviews with personnel. Specifically, the inspectors reviewed dry cask storage operations and compliance with the requirements specified in the site-specific ISFSI License SNM-2510 and associated technical specifications, the ISFSI Final Safety Analysis Report, and the regulations in Title 10 of the *Code of Federal Regulations* (CFR) Part 72 and Part 20. No violations were identified and a response to this letter is not required.

In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter, its enclosure, and your response if you choose to provide one, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC's Website at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy or proprietary information so that it can be made available to the public without redaction.

B. Gacke

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If you have any questions regarding this inspection report, please contact Lee Brookhart at 817-200-1549, or the undersigned at 817-200-1249.

Sincerely,

Natasha A. Greene, Ph.D., Chief  
Reactor Inspection Branch  
Division of Nuclear Materials Safety

Docket No. 72-011  
License No.: SNM-2510

Enclosure:  
Inspection Report 07200011/2021-001

RANCHO SECO INDEPENDENT SPENT FUEL STORAGE INSTALLATION – NRC  
INSPECTION REPORT 07200011/2021-001 DATED – MARCH 25, 2021

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**U.S. NUCLEAR REGULATORY COMMISSION**  
**Inspection Report**

Docket Number: 07200011

License Number: SNM-2510

Report Number: 07200011/2021-001

Enterprise Identifier: I-2021-001-0117

Licensee: Sacramento Municipal Utility District (SMUD)

Facility: Rancho Seco Nuclear Generating Station and  
Independent Spent Fuel Storage Installation

Location: Herald, California 95638

Inspection Dates: Onsite: February 23-24, 2021

Exit Meeting Date: February 24, 2021

Inspectors: L. Brookhart, Senior ISFSI Inspector  
Reactor Inspection Branch  
Division of Nuclear Materials Safety, Region IV

Approved By: Gregory G. Warnick, Chief  
Reactor Inspection Branch  
Division of Nuclear Materials Safety, RIV

Enclosure

## EXECUTIVE SUMMARY

### Rancho Seco Independent Spent Fuel Storage Installation NRC Inspection Report 07200011/2021-001

On February 23-24, 2021, the U.S. Nuclear Regulatory Commission (NRC) performed a routine on-site inspection of the dry fuel storage activities of the Independent Spent Fuel Storage Installation (ISFSI) at the Rancho Seco Nuclear Generating Station in Herald, California. The inspection included an evaluation of the current condition of the ISFSI and reviews of several topical areas to evaluate compliance with the applicable NRC regulations and the provisions of the site-specific license. The inspection included reviews of documentation relevant to ISFSI activities and operations that occurred at Rancho Seco since the last ISFSI inspection was performed in June 2018 (ADAMS Accession No. ML18241A371). The documentation reviewed included quality assurance records, radiological surveys, corrective action reports, and records demonstrating compliance with Technical Specifications and Final Safety Analysis Report (FSAR) requirements. The NRC inspector did not identify any findings or violations during the inspection.

#### Away from Reactor ISFSI Inspection Guidance, Inspection Procedure 60858

- The inspectors reviewed the quality assurance audits and surveillances performed by the licensee since the last ISFSI inspection. Issues identified in the quality assurance audits and surveillances were entered into the site's corrective action program for resolution. No findings were identified related to the licensee's ISFSI quality assurance activities. (Section 1.2.a)
- Radiation levels around the ISFSI facility were within the expected ranges. The ISFSI facility was maintained in good physical condition. No flammable materials were stored in the ISFSI, all vegetative growth had been controlled, and radiation postings met the 10 CFR Part 20 requirements. At the time of the inspection there were no observable signs of degradation. (Section 1.2.b)
- Environmental data reviewed from the 2018 and 2019 site radiological environmental operating reports determined that radiation levels offsite were nominal and in accordance with the design basis and 10 CFR Part 72.104. (Section 1.2.c)
- Since the last NRC ISFSI inspection, Rancho Seco received a license renewal request from the NRC and completed two revisions to its FSAR. No issues were identified in the review of the changes associated with the license or FSAR. (Section 1.2.d)
- Selected condition reports were reviewed for the period of June 2018 through February 2021. A wide range of issues were identified and resolved by the licensee. The issues identified did not have a significant impact on safety and resolution of those issues were appropriate. No adverse trends were identified during the review. (Section 1.2.e)
- The Rancho Seco ISFSI Emergency Response Plan was being maintained and two revisions to the plan were reviewed by the inspector. The inspector determined the changes did not reduce the effectiveness of the plan and did not require NRC approval pursuant to 10 CFR 72.44. Drills, exercises, and training were performed in accordance

with requirements in the plan. Offsite support agencies were offered an opportunity to participate in the licensee's latest biennial exercise. (Section 1.2.f)

- The inspectors reviewed a sample of 10 CFR 72.48 screenings and evaluations that had been performed within the inspection period. No findings were identified through the selected sample review. (Section 1.2.g)

## REPORT DETAILS

### Summary of Facility Status

The Rancho Seco Independent Spent Fuel Storage Installation (ISFSI) was loaded with 22 dry shielded canisters (DSCs) based on the Standardized NUHOMS 24P – DSC design. These DSCs are stored in Orano TransNuclear (TN) Horizontal Storage Modules (HSMs). Twenty-one of the DSCs contain 493 spent fuel assemblies stored at the ISFSI, and 1 DSC contains reactor-related Greater Than Class C (GTCC) waste. The ISFSI is maintained under a site-specific NRC Part 72 license. The canisters containing spent fuel were loaded using SNM-2510 License Amendment 0 and Final Safety Analysis Report (FSAR), Revision 1 or 2. The GTCC canister was loaded using SNM-2510 License Amendment 2 and FSAR Revision 3. The site currently maintains the ISFSI in accordance with SNM-2510 License Amendment 4 Renewed and the FSAR Revision 9.

### **1. Away From Reactor ISFSI Inspection Guidance (IP60858)**

#### **1.1 Inspection Scope**

The inspectors performed a review of the licensee's ISFSI activities to verify compliance with requirements of the site-specific License SNM-2510, License Amendment 4 Renewed, and FSAR Revision 9. The inspectors reviewed selected procedures, corrective action reports, and records to verify ISFSI operations were compliant with the licensee's technical specifications, requirements in the FSAR, and NRC regulations.

#### **1.2 Observations and Findings**

##### **a. Quality Assurance Audits**

Since the last ISFSI inspection, the Rancho Seco Quality Assurance Program issued two 2019 audit reports and three 2020 audit reports that related to ISFSI activities. The licensee's audit and surveillance program encompassed many topical areas and provided in-depth reviews of the licensee's ISFSI programs, operations, training, and record keeping. The audits covered ISFSI documentation and activities related to ISFSI Technical Specifications; FSAR requirements; implementation of ISFSI programs; training and qualifications; design control; emergency preparedness; and other ISFSI-related areas.

All identified findings or enhancements were placed into the licensee's corrective action program (CAP) as Potential Deviation from Quality reports (PDQs). Each PDQ required a formal response from the impacted program department. The inspector reviewed the problem statements for each PDQ that resulted from the five ISFSI audits. The PDQs were evaluated to ensure that the problems being identified were properly categorized based on their safety significance and were properly resolved by the licensee. The inspector determined that the corrective actions identified or taken for the issues were appropriate for the significance of the problems being identified. The inspector did not identify any concerns related to the findings of the site's quality assurance auditing and surveillance program. The audits performed met the requirements of 10 CFR Part 72, Subpart G, and the licensee's quality assurance program requirements.

b. Radiological Conditions and Tour of the ISFSI

A tour of the Rancho Seco ISFSI was performed during the inspection. A recent radiological survey of the ISFSI was provided to the inspector prior to arrival at the facility. The ISFSI Manager accompanied the inspector during the facility tour. During the tour, the inspector determined that the concrete HSMs and the HSM lids were in good physical condition. No flammable or combustible materials were observed anywhere inside or near the ISFSI and all vegetative growth within the ISFSI fence had been controlled by the licensee. Radiation levels surveyed by the licensee near the edges of the ISFSI remained at background levels. Areas within the ISFSI pad that required postings were properly posted in accordance with 10 CFR Part 20 requirements.

Areas external to the ISFSI pad were also inspected. A storage building contained the site's Transfer Cask and other components that would be used to support cask transfer operations. The equipment was observed to be in good physical condition with no significant observable degradation.

c. Radiological Environmental Monitoring Reports

Rancho Seco ISFSI Annual Radiological Environmental Monitoring Reports were reviewed for 2018 and 2019. The site's environmental monitoring program measured the direct radiation impacts of plant operations at 10 optically stimulated luminescent dosimeter (OSLD) monitoring stations which surrounded the ISFSI. Five locations were in close proximity to the ISFSI's HSMs and were located along the Security Area Fence. The other five locations were further away from the ISFSI but were within the site's owner-controlled area. Additionally, the licensee had two control locations which monitored background levels.

The ISFSI 100-meter security boundary fence locations are the ones used to demonstrate compliance with the 10 CFR 72.104 requirements for radiation dose. For the 2-year period reviewed by the inspector, the dose measurements at OSLD locations along the 100-meter security boundary fence were equivalent to background levels. The dose results demonstrated the maximum dose to an individual of the public was well below the 10 CFR 72.104(a)(2) requirement of less than 25 mrem per year. No findings were identified related to the radiological review.

d. Changes to the SNM-2510 License and FSAR

At the time of the last inspection conducted in June 2018, Rancho Seco utilized SNM-2510 License Amendment 4 and FSAR Revision 7. Since then, on March 9, 2020, Rancho Seco received a 40-year license renewal for the ISFSI from the NRC. The SNM-2510 ISFSI License Amendment 4 Renewed has an expiration date of midnight on June 30, 2060.

The FSAR was revised twice from Revision 7. The first change, Revision 8, updated the FSAR based on the changes that were approved by the NRC as part of the license renewal process. Revision 9 changes were due to the termination of the Rancho Seco Part 50 license. The revisions contained editorial corrections/changes and updates to reflect facility changes due to decommissioning activities being terminated.



The major changes associated with license Amendment 4 Renewed and Revisions 8 and 9 of the FSAR were the inclusion of License Condition 21 and FSAR Volume 1, Section 9.8, titled, "Aging Management." This program established the processes and procedures to manage the aging of ISFSI components into extended storage periods. Per License Condition 21, the Aging Management Program was required to be established within 1 year after the issuance of the renewed license (March 9, 2020). Based on the FSAR Volume 1, Tables 9.8-9 and 9.8-10, the baseline inspections for the ISFSI's systems, structures, and components were to be completed no later than 2 years after the period of extended operation. Since Rancho Seco's license originally was set to expire on June 30, 2020, the site's first inspections are required to be completed by June 30, 2022. The licensee expects to meet the License Condition 21 deadline to establish the Aging Management Program prior to March 9, 2021 and perform the baseline inspections prior to the FSAR deadline of June 30, 2022.

e. Corrective Action Program

The inspectors performed a review of Rancho Seco's CAP associated with ISFSI operations. A list of ISFSI-related PDQs issued since the last routine NRC inspection in June 2018 was provided by the licensee during the current inspection. Several PDQs were selected by the inspector for further review.

The conditions discussed in the PDQs reviewed by the inspector covered a broad range of paperwork and maintenance issues that were identified during routine ISFSI storage operations. Based on the types of problems identified, the licensee continued to demonstrate a reasonably low threshold for placing ISFSI and maintenance issues into the CAP. The actions taken to resolve the issues were appropriate. No significant safety concerns or adverse trends were identified during the review of the CAP at Rancho Seco.

f. Emergency Planning

Revisions to the licensee's Emergency Plan since the last NRC inspection in June 2018 were reviewed. The Rancho Seco ISFSI Emergency Plan, RSLBD-020, Revision 1, had been issued in October 2018, and Revision 2 was issued in September 2020. The changes to the Emergency Plan were related to significant changes due to decommissioning activities that had been completed onsite and the termination of the site's Part 50 license. Additional changes included updating maps, editorial corrections, and removal of activities that were no longer required. The inspectors determined the changes were appropriate, did not result in a decrease in the effectiveness of the plan, and pursuant to 10 CR 72.44, the changes did not require NRC approval.

Required emergency drills/exercises were listed in Section 7.3 of the plan. Required annual drills included radiological/health physics drills, medical drills, and fire drills. Biennial exercises were larger drills that tested the adequacy of the implementing procedures, emergency equipment, and communications networks and ensured the emergency response personnel were familiar with their duties. Offsite response organizations were invited to participate in the biennial exercises. The licensee had successfully conducted the required exercises and drills since the last ISFSI inspection. A sample of drill packages and the most recent biennial exercise were selected for

review. The inspector determined that the selected drills and the exercise met the objectives of the site's Emergency Response Plan. No concerns were identified with the licensee's implementation of their Emergency Response Plan.

g. 10 CFR 72.48 Safety Evaluations and Screens

The licensee's 10 CFR 72.48 screenings and evaluations performed since the NRC's last ISFSI inspection were reviewed to determine compliance with regulatory requirements.

The licensee performed several procedure revisions, two FSAR revisions, and some process changes through the 10 CFR 72.48 program since the last inspection. The inspectors reviewed the 10 CFR 72.48 screenings and evaluations for those changes made within the ISFSI program. All screenings and evaluations were determined to be adequately performed.

1.3 Conclusions

The inspectors reviewed the quality assurance audits and surveillances performed by the licensee since the last ISFSI inspection. Issues identified in the quality assurance audits and surveillances were entered into the site's CAP for resolution. No findings were identified related to the licensee's ISFSI quality assurance activities.

Radiation levels around the ISFSI facility were within the expected ranges. The ISFSI facility was maintained in good physical condition. No flammable materials were stored in the ISFSI, all vegetative growth had been controlled, and radiation postings met the 10 CFR Part 20 requirements. At the time of the inspection, there were no observable signs of degradation.

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Selected condition reports were reviewed for the period of June 2018 through February 2021. A wide range of issues were identified and resolved by the licensee. The issues identified did not have a significant impact on safety and resolution of those issues were appropriate. No adverse trends were identified during the review.

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The inspectors reviewed a sample of 10 CFR 72.48 screenings and evaluations that had been performed within the inspection period. No findings were identified through the selected sample review.

## **2. Exit Meeting Summary**

The inspector verified no proprietary information was retained or documented in this report.

- On February 24, 2021, the inspector presented the final inspection results of the ISFSI inspection to Mr. Brad Gacke, Manager of Rancho Seco Assets, and other members of the licensee's staff.

**SUPPLEMENTAL INSPECTION INFORMATION**  
**PARTIAL LIST OF PERSONS CONTACTED**

Licensee Personnel

L. Evans, SMUD  
B. Gacke, ISFSI Manager  
D. Schwarzbart, SMUD  
T. Zuck, SMUD

**INSPECTION PROCEDURES USED**

IP 60858      Away from Reactor ISFSI Inspection Guidance

**LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED**

Opened

None

Closed

None

Discussed

None

**LIST OF ACRONYMS USED**

ADAMS	Agencywide Documents Access and Management System
CAP	Corrective Action Program
CFR	<i>Code of Federal Regulations</i>
DNMS	Division of Nuclear Material Safety
DSC	Dry Shielded Canister
FSAR	Final Safety Analysis Report
GTCC	Greater Than Class C
HSM	Horizontal Storage Modules
IP	Inspection Procedure
ISFSI	Independent Spent Fuel Storage Installation
NRC	U.S. Nuclear Regulatory Commission
OSLD	Optically Stimulated Luminescent Dosimeter
PDQ	Potential Deviation from Quality
SMUD	Sacramento Municipal Utility District
TN	Transnuclear