



DPG 18-100

May 15, 2018

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555-0001

Docket 50-312  
Rancho Seco Nuclear Generating Station  
License DPR-54

Docket 72-11  
Rancho Seco Independent Spent Fuel Storage Installation  
License SNM-2510

**RANCHO SECO BIENNIAL REPORT**

Attention: Zahira Cruz  
Attention: William Allen

In accordance with 10 CFR 50.59(d)(2); Rancho Seco Quality Manual Appendix A, Sections 1.5.3 and 1.5.5(b); and 10 CFR 72.48(d)(2), we are submitting the enclosed Rancho Seco biennial report covering the period May 1, 2016 through April 30, 2018.

For 10 CFR Part 50 decommissioning activities, the enclosed report includes:

1. Shutdown statistics,
2. A narrative summary of shutdown activities,
3. Environmental report information, and
4. A summary of safety evaluations documented pursuant to 10 CFR 50.59 and 10 CFR 72.48.

*IE47*  
*NMSS26*  
*NMSS*

If you or members of your staff require additional information or clarification,  
please contact me at (916) 732-4893.

Sincerely,

A handwritten signature in black ink, appearing to read "Dan A. Tallman", with a date "5/15/18" written below it.

Dan A. Tallman  
Manager, Rancho Seco Assets

Enclosure

Cc w/Att.: Kriss Kennedy, NRC Region IV Administrator  
RIC 1F.099

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## **Shutdown Statistics**

1. On June 7, 1989, Rancho Seco permanently ceased nuclear power operations.
2. On December 8, 1989, Rancho Seco staff completed de-fueling the nuclear reactor.
3. On March 17, 1992, the NRC amended the Rancho Seco 10 CFR Part 50 operating license to a Possession-Only license
4. On March 20, 1995, the NRC issued the Rancho Seco Decommissioning Order. The Order authorized the decommissioning of Rancho Seco and accepted the Rancho Seco decommissioning funding plan.
5. In March 1997, SMUD revised the Rancho Seco Decommissioning Plan to conform to the content requirements of the Post Shutdown Decommissioning Activities Report (PSDAR).
6. On June 30, 2000, the NRC issued Material License No. SNM-2510 for the Rancho Seco Independent Spent Fuel Storage Installation (ISFSI), a 10 CFR Part 72 facility located adjacent to the Rancho Seco 10 CFR Part 50 nuclear facility.
7. On April 2, 2001, Rancho Seco staff began loading spent nuclear fuel stored in the Rancho Seco spent fuel pool into canisters for transfer to the ISFSI.
8. On August 21, 2002, Rancho Seco staff completed the transfer of all spent nuclear fuel from the Rancho Seco spent fuel pool to the ISFSI.
9. On April 12, 2006, Rancho Seco staff submitted the License Termination Plan (LTP) for the Rancho Seco Nuclear Generating Station (License DPR-54) and associated proposed license amendment No. 199.
10. On August 22, 2006, the GTCC canister was loaded into the 22<sup>nd</sup> HSM on the ISFSI pad.
11. On November 27, 2007, the NRC approved the LTP.
12. In December 2008, all physical decommissioning activity was completed for Phase I of the LTP.
13. On June 8, 2009, SMUD submitted a letter to the NRC requesting release of the site under Phase I of the decommissioning process following completion of Final Status Surveys.

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14. On August 11, 2009, Amendment 3 to the ISFSI Technical Specifications was approved by the NRC. This amendment addresses issues with misclassification of some fuel that is damaged and is stored in non-designated canisters. The amendment indicates that the fuel is being stored safely.
15. On September 25, 2009, the NRC approved release of the land as requested. As of this date, the land licensed under 10 CFR 50 is an approximately 1-acre fenced parcel containing the Interim Onsite Storage Building that houses the stored low-level radioactive waste. The 10 CFR 72 licensed area for storage of the used nuclear fuel and GTCC material remains unchanged.
16. On March 30, 2017, SMUD submitted a letter documenting the manner in which SMUD has met the records forwarding requirements prior to termination of the 10 CFR 50 License.
17. On September 21, 2017, SMUD submitted a letter to the NRC requesting termination of the 10 CFR Part 50 License (DPR-054).
18. On November 24, 2017, the NRC issued Amendment 4 to Material License No. SNM-2510. This amendment authorized the possession and use of a radioactive byproduct material source used to check the functionality of radiation detection instruments. Coincident to the amendment, the NRC approved ISFSI SAR, Revision 7 which describes the manner of control and storage for the radioactive check source.
19. On March 19, 2018, SMUD submitted a 10 CFR Part 72 License Renewal Application in accordance with 10 CFR 72.42(b).

### **Summary of Shutdown Activities**

1. SMUD currently stores all the Rancho Seco used nuclear fuel in 21 canisters (20 canisters containing 24 fuel assemblies and one canister containing 13 fuel assemblies) at the Rancho Seco ISFSI. The GTCC material is also stored at the ISFSI in a single canister.
2. On September 25, 2009 the NRC issued a letter approving the request to remove most of the facility land and structures from the 10 CFR 50 license. The facility remaining under license consists of the Interim Onsite Storage Building (IOSB) and approximately 1-acre of land surrounding the building. The IOSB was built specifically for the storage of low-level radioactive waste, and the waste Class B and Class C materials resulting from decommissioning were stored in the building until a suitable disposition option became available. Following offsite

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disposition of the materials, Phase II of decommissioning will be conducted that will result in termination of the 10 CFR Part 50 license.

3. With completion of Phase I of decommissioning, the licensed facilities are in a stable configuration with a focus on monitoring the materials at the two facilities to ensure continued safe storage of that material. All of the material stored in both facilities is packaged for eventual shipment, although the damaged fuel stored in non-designated canisters requires additional evaluation prior to eventual shipment.
4. In November 2010, staffing changes were implemented at the facility. Onsite security was transitioned to a contracted security force and the "ISFSI Technician" and "ISFSI Supervisor" positions were eliminated. SMUD security continues to staff the Primary Alarm Station. The onsite security force now includes a Security Shift Supervisor who assumes the onsite management responsibilities of the ISFSI Technician.
5. On March 19, 2014, 10 CFR Part 37 became effective, with new security requirements for the material in storage at the IOSB. Some of these new security requirements were different than those required by the orders issued in November 2010. SMUD implemented all of the required security measures before the implementation date of March 19, 2014.
6. In March 2014, the Post-Shutdown Decommissioning Activities Report was revised and provided to the NRC in April 2014. This revision reflects the updated schedule for shipping the Class B and Class C low-level radioactive waste generated during Phase I of decommissioning to the recently licensed disposal facility near Andrews, TX and operated by Waste Control Specialists, Inc. The updated schedule reflects disposal of the stored material in 2014, followed by the completion of license termination activities for the remaining infrastructure under the Part 50 license over the next two to three years.
7. In October 2014, SMUD completed shipping the Class B and Class C low-level radioactive waste generated during Phase I of decommissioning to the recently licensed disposal facility near Andrews, TX and operated by Waste Control Specialists, Inc. Following completion of waste disposal activities, SMUD commenced license termination activities in and around the IOSB. These activities are being conducted in accordance with the approved License Termination Plan.
8. In December 2014, RSNAP-202, IOSB Physical Security Plan, was voided since there was no longer any material in storage in the IOSB subject to the security requirements of 10CFR37. During a subsequent NRC inspection conducted in February 2016, the NRC inspectors reviewed security plans and procedures, radiation protection

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procedures, training programs, the personnel access authorization program, and the establishment of security zones related to 10 CFR 37 materials. No findings were identified.

9. On February 28, 2017, SMUD submitted the Final Status Survey Report as required by the License Termination Plan for the remaining area (Phase II Decommissioning) licensed under 10CFR50. SMUD submitted additional information in response to NRC questions on April 13, 2017. The NRC responded on May 16, 2017 concluding that the Phase II area is suitable to be released for unrestricted use.

### **Environmental Reports**

No new permits related to protection of the environment at the RSNRS location were issued during this reporting period.

### **10 CFR 50.59(d)(1) and 10 CFR 72.48(d)(1) Safety Evaluation Summary**

The following is a summary of facility changes, tests, and experiments that required a documented evaluation pursuant to 10 CFR 50.59(d)(1) or 10 CFR 72.48(d)(1). No changes were implemented that required prior NRC approval.

1. RSLBD-010, Revision 3, Rancho Seco Quality Manual, updated corporate organization and responsibilities.
2. ISFSI Safety Analysis Report, Revision 5, was updated to incorporate changes identified in prior 50.59/72.48 evaluations. Changes included deletion of security procedures that are no longer required under 10CFR37, incorporating a Table of Content in the Rancho Seco Quality Manual, and construction of a fuel equipment storage building within the 10CFR72 licensed area.
3. RP.311.II.03, Revision 3, Ludlum 2350-1 Datalogger Calibration was revised to change the calibration frequency from 6 months to 12 months consistent with ANSI N323A-1997.
4. ISFSI Safety Analysis Report (IFSAR), Revision 6, was updated to correct errors in Footers, Table of Contents List of Effective Pages, and numbering errors that were identified while preparing a consolidated ISFSI SAR for submittal to the NRC in support of the AREVA/WCS ISFSI application.
5. The Radioactive Material Storage and Decommissioning Safety Analysis Report, Revision 3 updated the removal of Class B and Class C waste

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from the IOSB, termination of 10 CFR37 security requirements, change in the IOSB fire protection system, and other changes to organizational titles and structure.

6. RSIP-901, ISFSI Security Computer System Acceptance Test, was issued to document the acceptance testing of the new security computer system.
7. SPIP-06, Revision 4, ISFSI Communications was revised to incorporate the new radio system.
8. Physical Protection Plan, Amendment 8, incorporated changes related to the security of the ISFSI. On January 18, 2018, SMUD submitted a report of changes to the ISFSI Physical Protection Plan and the Training and Qualifications Plan in accordance with 10 CFR 72.44(e) and 10 CFR 72.186(b).
9. Training and Qualification Plan, Amendment 5, incorporated changes to the security training program to support the Physical Protection Plan changes. On January 18, 2018, SMUD submitted a report of changes to the ISFSI Physical Protection Plan and the Training and Qualifications Plan in accordance with 10 CFR 72.44(e) and 10 CFR 72.186(b).
10. Security Plan Implementing Procedures (SPIP-01, SPIP-02, SPIP-03, SPIP-04, SPIP-05, SPIP-06, SPIP-07, and SPIP-08) were voided and replaced by RSIP-200 series procedures as part of the Physical Protection Plan revision.
11. Rancho Seco Implementing Procedures (RSIP-203, RSIP-204, RSIP-205, RSIP-206, RSIP-207, RSIP-208, RSIP-211, and RSIP-212) were issued to replace the SPIP's. These changes support the changes incorporated in Physical Protection Plan, Amendment 8.
12. SP.1101, Revision 10, Semi-Annual Radioactive Source Leakage Testing was voided and replaced by RSIP-711, Revision 0. SP.1101 governed the semi-annual leakage testing for radioactive sources under the 10CFR50 license.
13. RSIP-711, Revision 0, Semi-Annual Radioactive Sealed Source Leakage testing was issued to incorporate the license conditions of 10 CFR 72 License SNM-2510, Amendment 4 related to leak tests for radioactive sources.
14. SP.1102, Revision 5, Annual Accountability and Inventory of Radioactive Sources was voided and replaced with RSIP-712, Revision 0. SP.1102 governed the inventory of radioactive sources under the 10CFR 50 license.

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15. RSIP-712, Revision 0, Semi-Annual Inventory of Radioactive Sources was issued to incorporate the license conditions of 10 CFR 72 License SNM-2510, Amendment 4 related to inventory requirements of radioactive sources.
16. Emergency Plan (Change 6), Revision 1 was voided and replaced with RSLBD-020, Revision 0, Emergency Plan.
17. RSLBD-020, Revision 0, Emergency Plan was issued to incorporate changes necessitated by Physical Protection Plan, Amendment 8. On February 20, 2018, SMUD submitted a report of changes to the Rancho Seco Emergency Plan in accordance with 10 CFR 72.44(f).
18. Emergency Plan Implementing Procedures (EPIP-01, EPIP-02, and EPIP-03) were voided and replaced with Rancho Seco Implementing Procedures (RSIP-003, RSIP-004, and RSIP-005).
19. Rancho Seco Implementing Procedures (RSIP-003, RSIP-004, and RSIP-005) were issued to reflect changes necessitated by the Physical Protection Plan, Amendment 8 and RSLBD-020, Revision 0, changes.
20. RSIP-713, Revision 0, Quarterly Sampling of Direct Radiation, was issued to allow the use of a computer generated equivalent to Data Sheet 2, update format, and make editorial corrections.
21. RSNAP-001, Revision 1, Nuclear Organization, Responsibilities, and Authorities added delegation of authority for the Manager, Rancho Seco Assets, updated the organization chart, and make other editorial corrections and updates to titles.
22. RSIP-714, Revision 0, Annual Vendor Accreditation Evaluation was issued to replace SP.805, Revision 4. This new procedure incorporates changes that reflect the reduced scope of the REMP program and the reduced vendor and laboratory evaluation needs based upon the current site conditions.
23. RSIP-314, Revision 0, REMP Quality Assurance was issued to replace HPIP-2400, Revision 7, REMP Quality Assurance. This new procedure includes changes that reflect the reduced scope of the REMP program and the reduced complexity and scope of the REMP program.
24. RSNAP-093, Revision 1, External Plant Reports and Posting of Notices was revised to change the Emergency Plan Audit Report from annual to biennial to be consistent with the Rancho Seco Quality Manual requirement, updating the reporting requirements for two reports, and other editorial changes and corrections.