SMUD
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AN ELECTRIC SYSTEM SERVING THE HEART OF CALIFORNIA

MPC&D 04-048

May 27, 2004

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

Docket 50-312
Rancho Seco Nuclear Station
License DPR-54
Docket 72-11
Rancho Seco Independent Spent Fuel Storage Installation
License SNM-2510

RANCHO SECO BIENNIAL REPORT

Attention: John Hickman

In accordance with 10 CFR 50.59(d)(2); Rancho Seco Quality Manual Appendix A, Sections 1.5.4 and 1.5.6b; and 10 CFR 72.48(d)(2), the District submits the enclosed Rancho Seco biennial report.

For 10 CFR 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(d)(1).

For 10 CFR 72 ISFSI activities, the enclosed report includes a summary of safety evaluations documented pursuant to 10 CFR 72.48(d)(1).

The 10 CFR 72 portion of the biennial report covers the period May 1, 2002, through April 30, 2004. For the 10 CFR 50 portion, the enclosed report covers the period May 9, 2003 through April 30, 2004, because the District previously submitted 10 CFR 50 biennial report information for the period May 1, 2002, through May 8, 2003 (reference letters MPC&D 02-051, dated May 6, 2002 and MPC&D 03-062, dated May 12, 2003).

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Subsequent Rancho Seco Biennial Reports will address both 10 CFR 50 and 10 CFR 72 activities and will cover the two-year period from May 1 through April 30 for the even numbered years. For example, the next Biennial Report is due in May 2006, and will cover the period May 1, 2004, through April 30, 2006.

You or members of your staff requiring additional information or clarification may contact Richard Mannheimer at (916) 732-4916.

Sincerely,

Steve Redeker
Manager, Plant Closure and Decommissioning

Attachment

cc w/Atch: Region IV Administrator, NRC, Arlington Texas
R. Hall, NRC, Washington DC

RANCHO SECO BIENNIAL REPORT

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 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 72 facility located adjacent to the Rancho Seco 10 CFR 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.

Summary of Shutdown Activities

1. SMUD currently stores all the Rancho Seco spent nuclear fuel in 21 canisters (20 canisters containing 24 fuel assemblies and one canister containing 13 fuel assemblies) at the ISFSI.

2. Rancho Seco last updated the PSDAR (Amendment 4) in July 2003. SMUD currently plans to complete active decommissioning activities by 2008. However, due to a lack of suitable waste disposal options, SMUD intends to store Class B and C radioactive waste in the Rancho Seco Interim Onsite Storage Building until a suitable disposal facility becomes available. Portions of the site that are not needed to safely store Class B and C radioactive waste are planned for release before license termination, using a NRC-approved license termination plan (LTP). SMUD expects to submit its license termination plan to the NRC in mid-2005.

Summary of Shutdown Activities (Continued)

3. The NRC approved a one-time code exception from ASME paragraph NB-4121.3, "Repetition of Surface Examination After Machining," that permitted not performing a repeat liquid penetrant test following additional machining on the Failed Fuel Dry Shielded Canister (FF-DSC) bottom forging. Other examinations performed on the FF-DSC bottom forging and additional technical analysis performed by outside experts demonstrated not performing the repeat liquid penetrant test has no significant adverse impact on the ability of the FF-DSC to perform its design function.

4. Rancho Seco decommissioning personnel segmented the reactor vessel head and shipped the segmented head to Envirocare of Utah for disposal.

5. Rancho Seco decommissioning personnel removed the Pressurizer from the Rancho Seco Reactor Building and shipped the Pressurizer to Envirocare of Utah for disposal.

6. SMUD continues to dismantle the Rancho Seco site as part of decommissioning; having removed over 90% of the Reactor Building systems, about 90% of the Auxiliary Building equipment, a majority of the spent fuel pool liner, most of the above ground tanks and piping from the outside Tank Farm, and all secondary plant equipment from the Turbine Building. The reactor vessel internals, the reactor vessel, and the two steam generators remain. Reactor vessel internals removal is planned to begin in 2004 with completion in 2005.

Environmental Reports

Rancho Seco had no changes or additions to permits and certificates required by Federal, State, local, and regional authorities for the protection of the environment.

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) and 10 CFR 72.48(d)(1). None of the changes summarized below required prior NRC approval via a license amendment.

Design Changes

DCP R03-0006, "Installation of ISFSI Personnel Access Gates," added a personnel access gate to the ISFSI Protected Area and nuisance fences. This design change required a revision to two ISFSI Physical Protection Plan (PPP) sections and one figure. Since the access gate design basis is consistent with the vehicle gate design basis, this ISFSI design change did not reduce the effectiveness of the PPP.

Design Changes (Continued)

DCP R03-0010, "Liquid Effluent System Reconfiguration," abandoned several liquid waste processing components, including the Regenerant Hold-Up Tanks (RHUTs). This liquid effluent system reconfiguration constituted a major change to a radioactive waste treatment system. A summary of this evaluation will be included in the next Defueled Safety Analysis Report (DSAR) update.

SMUD Document # M41.01-50, "Multi-Purpose Cask Transportation Package Safety Analysis Report – Part 71," Submittal 16 updated the 10 CFR 71 MP187 cask design based on numerous TNW initiated drawing changes. This 10 CFR 71 design change requires a change to the ISFSI FSAR because the Failed Fuel Dry Shielded Canister drawings and fabrication details are the same for 10 CFR 72 as they are for 10 CFR 71.

License Basis Document Changes

Physical Protection Plan (PPP), Revision 1 (Amendment 1) made several administrative changes that eliminated the security watchmen pager, clarified security watchmen responsibilities, and strengthened access control provisions to ensure only authorized individuals have access to the ISFSI alarm stations. These changes did not reduce the effectiveness of the PPP and did not require NRC approval prior to implementation.

DSAR Amendment 5 removed a significant amount of information from the DSAR to reflect completion of fuel transfer to the ISFSI and required several ISFSI FSAR reference changes. To maintain consistency, several ISFSI FSAR sections must be revised to reference DSAR Amendment 4 instead of referencing the DSAR in general.

Physical Protection Plan (PPP) Amendment 2 was revised to reflect (1) current practices for logging security alarms and dispatching ISFSI responders, (2) organization and title changes, (3) completion of fuel movement to the ISFSI, and (4) installation of personnel access gates at the ISFSI. These changes did not reduce the effectiveness of the PPP and did not require NRC approval prior to implementation.

PSDAR Amendment 4 updated the PSDAR to the current decommissioning status and specified the District's intent to store Class B and Class C radioactive waste until a suitable disposal facility becomes available. License termination would not occur until after Class B and C waste is removed. Portions of the site that are not needed to safely store Class B and C radioactive waste are planned for release before license termination, using a NRC-approved license termination plan (LTP).

ISFSI FSAR Sections 7.1.2 and 9.4.1.2 were revised to reflect existing radiation protection procedures and practices relating to personnel Dosimetry and Radiation Work Permits (RWPs) at the ISFSI. Dosimetry and RWPs are only required at the ISFSI within the posted radiation area.

License Basis Document Changes (Continued)

ISFSI FSAR Section 7.5.2 was changed to acknowledge that calibration methods other than the use of calibration sources are acceptable. A specific spot on one of the Horizontal Storage Modules at the ISFSI is used for the neutron instrument response check.

Chemistry Administrative Procedure 0002 (CAP-0002), "Off-site Dose Calculation Manual (ODCM)," Revision 16 implemented effluent program changes resulting from DCP R03-0010 (Liquid Effluent System Reconfiguration design changes) and corrective actions from DQ 03-0044 (HEPA filter requirement removal & Auxiliary Building Stack and Reactor Building Stack filter efficiency design change).

Emergency Plan Change 5, Revision 1 removed RP Responder program requirements to reflect previous elimination of the RP Responder program and made several emergency response program changes to reflect facility operations during decommissioning with all spent fuel stored at the ISFSI. This revised Emergency Plan is a simplified, combined decommissioning (10 CFR 50) and ISFSI fuel storage (10 CFR 72.32) Emergency Plan. The changes did not reduce the effectiveness of the Emergency Plan and did not require NRC approval prior to implementation.

Rancho Seco Quality Manual (RSQM) Section XVIII, "Audits," Revision 10 reduces some Rancho Seco quality assurance audit program audit frequencies and eliminates of a portion of the Fire Protection program audit. In accordance with 10 CFR 50.54(a), this change constitutes a reduction in quality assurance program (QAP) commitments and requires NRC review and concurrence, by either written approval or negative consent within 60 days of the QAP change request submittal. The District submitted the RSQM Section XVIII change request to the NRC in letter MPC&D 04-030, dated April 7, 2004.

Corrective Action Program

Transnuclear West (TNW) Non-Conformance Report 01-049 accepted the Top Shield Plug Assembly side casing thickness exceeding 0.75 inches. Exceeding a thickness of 0.75 inches at some points around the assembly is a change to fabrication details. The assembly thickness is not specified on TNW drawing NUH-05-1053. The thickness depends on the as built inside diameter of the mating canister shell. This change in fabrication details will not significantly affect canister stresses. Design assumptions and methodology remain unchanged. ASME code allowables are maintained at acceptable limits.

DQ 03-0044, "HEPA filter requirement removal & Auxiliary Building Stack and Reactor Building Stack filter efficiency design change," removed the requirement to use HEPA filters and changed the filter efficiency design requirement for the Auxiliary Building and Reactor Building Stack ventilation systems to a minimum efficiency of 90%. This change required a change to the ODCM (CAP-0002) but did not constitute a major change to a radioactive waste treatment system.

Corrective Action Program (Continued)

PDQ 02-0025, "Determination of the appropriate water level above spent fuel during fuel transfer operations," resolved an inconsistency in design basis documents and clarified that a minimum of 9 feet of water must be maintained above active fuel during fuel transfer operations in the Rancho Seco spent fuel pool.

Master Equipment List

MEL Input Authorization Log No. 04-01 downgraded the Quality Assurance (QA) Class for Auxiliary Building ventilation fans A-542A and A-542B from QA Class 2 to QA Class 4 and made the fans available for removal to support the decommissioning of Rancho Seco. The safety evaluation concluded the ventilation fans are not required for contamination control and their removal does not adversely affect the decommissioning accident analysis. This change constituted a major change to a radioactive waste treatment system. A summary of this evaluation will be included in the next DSAR update.

Procedures

Administrative procedure OAP-0001, Revision 21, "Organization and Scope" transferred remaining Operations area responsibilities to Maintenance to complete the transition to facility operations with all fuel stored at the ISFSI. This change required a change to ISFSI FSAR section 9.1.2.2.

Radiation Protection procedure RP.305-40, "RP Responder Instructions," was voided to remove a program that is no longer necessary during the current decommissioning and fuel storage mode. All spent fuel is stored at the ISFSI. The District implemented the ISFSI Technician program to replace plant operators. The ODCM was revised to reflect the decreased potential for gaseous effluent releases. The ISFSI radiation area size was reduced allowing ISFSI and Security staff to access the ISFSI for routine inspections and surveillances without requiring an ANSI qualified RP Technician. This change continues to meet 10 CFR 50.47(b) and 10 CFR 50.54(q) but did require a change to the Rancho Seco Emergency Plan. The change did not constitute a reduction in the effectiveness of the Emergency Plan and did not require NRC approval prior to implementation.

Special Test Procedure STP-1360, "ISFSI Phase II Security Computer System Test (Final Configuration)," tested the Primary and Secondary Alarm Station computer system ability to monitor the ISFSI intrusion detection system. This test is not a test or experiment previously described in the ISFSI FSAR.

Special Test Procedure STP-1363, "Effluent Discharge pH Testing," tested the effects of CO_2 on the pH in the plant effluent stream. This test constituted a test or experiment not described in the DSAR.