



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

May 16, 2017

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

SUBJECT: REVIEW OF FINAL STATUS SURVEY REPORT FOR RANCHO SECO
NUCLEAR GENERATING STATION INTERIM ONSITE STORAGE BUILDING

Dear Mr. Tallman:

On February 28, 2017, Sacramento Municipal Utility District (SMUD) submitted to the U.S. Nuclear Regulatory Commission (NRC) the Final Status Surveys Report (FSSR) (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML17065A034 and ML17118A025) for the second and final phase of the Rancho Seco Nuclear Generating Station (Rancho Seco) decommissioning.

The FSSR states that SMUD has completed remaining radiological decommissioning and final status surveys (FSSs) of the Rancho Seco facility and site in accordance with the NRC-approved license termination plan (LTP) Rev. 1 (ADAMS Accession Nos. ML061460053 and ML081990483), and the FSSs results demonstrate that the facility and site meet the criteria for decommissioning and release of the site for unrestricted use that are stipulated in Title 10 of the *Code of Federal Regulations* (10 CFR) 20.1402 "Radiological criteria for unrestricted use."

On June 30, 2000, the NRC issued Materials License SNM-2510 for the Rancho Seco Independent Spent Fuel Storage Installation (ISFSI). This site-specific, 10 CFR part 72 license authorizes SMUD to store Rancho Seco spent fuel at the Rancho Seco ISFSI. The licensee completed transferring all of the spent fuel to the ISFSI on August 21, 2002. All of the spent fuel is now stored at the ISFSI. The ISFSI is a separately licensed facility located outside the Part 50 licensed site.

The NRC approved the Rancho Seco LTP on November 27, 2007 (ADAMS Accession No. ML072070291). LTP Section 1.4.2 discusses SMUD's intent to release the Rancho Seco site for unrestricted use in two phases. The NRC approved release, from the 10 CFR Part 50 license DPR-54, of a portion of the Rancho Seco site (Phase I) on September 25, 2009 (ADAMS Accession No. ML092520046). After completion of Phase I decommissioning in 2009, the only remaining portion of the site to be decommissioned was the Interim On-Site Storage Building (IOSB), which contained radiological waste (Class B and C waste) from Phase I of decommissioning. In 2014, SMUD completed the last shipment of radiological waste to a disposal facility in Texas and notified the NRC that the licensee would begin Phase II of decommissioning. Phase II of decommissioning included the approximately two-acre IOSB and

surrounding area. As described in Section 8.3 of the LTP, the licensee committed to follow Chapter 5 of the LTP, Final Status Survey Plan, for completing the remaining cleanup activities.

Section 6.6.2.5 of the Rancho Seco LTP identified six radionuclides of concern (ROCs) based on site characterization sample results. Site-specific derived concentration guideline levels (DCGLs) were calculated for the ROCs. The licensee committed to meeting the site-specific DCGLs listed in Table 6-5 of the Rancho Seco LTP and the as-low-as-reasonably-achievable (ALARA) criterion described in Section 4.4 of the LTP to demonstrate that it met the 10 CFR 20.1402 criteria for unrestricted use of the IOSB. DCGLs were developed for soils, embedded piping, surfaces and structures. The licensee must meet the DCGLs for the six ROCs to demonstrate compliance with 10 CFR 20.1042, which sets forth the criteria for unrestricted use of the site at license termination. Specifically, 10 CFR 20.1402 requires that the residual radioactivity that is distinguishable from background radiation results in a total effective dose equivalent (TEDE) to an average member of the critical group that does not exceed 25 mrem/year, including that from groundwater sources of drinking water, and that the residual radioactivity has been reduced to levels that are ALARA.

On September 16, 2016, NRC Region IV issued inspection report 050-00312/2016-002 for the IOSB at the Rancho Seco site (ADAMS Accession No. ML16259A414). The inspector interviewed licensee staff, observed work in progress, and reviewed selected documents related to the licensee's decommissioning activities. The inspector concluded that the licensee and its contracted work force were conducting decommissioning activities in accordance with the NRC-approved LTP. The inspector also determined that the licensee's final status survey plan was in general agreement with NRC guidance in NUREG-1757, Vol. 2, Section 4.5 "Final Status Survey Report."

At the request of the NRC, the Oak Ridge Institute for Science and Education (ORISE), managed by Oak Ridge Associated Universities, conducted confirmatory survey activities at the IOSB during the week of August 29, 2016. The confirmatory survey activities included beta and gamma radiation surface scans, direct and removable confirmatory measurements, side-by-side direct measurements, and soil sampling activities. As a result of the confirmatory survey activities, ORISE identified one location of elevated direct gamma radiation in the south side of the IOSB in the asphalt area. This location was previously identified by SMUD and scheduled for remediation. Only one direct measurement collected by ORISE during the side-by-side measurement exceeded the DCGL in the Truck Bay area. However, this area had not undergone an FSS at the time of ORISE's site visit. ORISE documented the conduct and results of its survey activities in a report dated March 22, 2017 (ADAMS Accession No. ML17083A983). ORISE concluded that the licensee implemented the FSS appropriately. Soil samples collected by ORISE were in the range of typical background concentrations. In addition, soil samples collected by the licensee and analyzed by ORISE were in the typical range for background concentrations.

The NRC staff performed technical evaluation of each individual survey unit report. The 35 survey units were divided into 5 Class 1, 4 Class 2, and 26 Class 3 survey units. Some of the survey unit parameters evaluated in the reports included: survey unit classification, survey unit area, DCGL, ROCs, instrument efficiency, scan coverage, and number of samples or measurements taken. Based on its review, the NRC staff concludes that the licensee's FSS data adequately and accurately demonstrated that the IOSB and two-acre surrounding area is well below the licensee's DCGLs, and as such, meets the criteria of 10 CFR 20.1402.

The staff has reviewed the residual radioactivity values in the Final Status Survey reports and compared them to the trigger values in the 2002 Memorandum of Understanding (MOU) between the NRC and the U.S. Environmental Protection Agency (EPA) entitled, "Consultation and Finality on Decommissioning and Decontamination of Contaminated Sites" (ML022830208). Based on this review, the residual radioactivity in soil and groundwater at the site is well below the values in the MOU and, as such, consultation with EPA in accordance with the MOU is not required.

Therefore, on the basis of clean-up activities carried out by the licensee, the NRC's review of SMUD's final status survey report, and the results of NRC confirmatory surveys, the NRC concludes that the licensee has met the criteria of 10 CFR 20.1402 and therefore, the Phase II area is suitable to be released for unrestricted use.

In accordance with 10 CFR 2.390 of the NRC's "Rules of General Applicability," a copy of this letter and the referenced correspondence will be available electronically in the NRC Public Document Room or from the Publicly Available Records component of the NRC's document system at the referenced ML numbers. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

If you have any questions concerning this matter, please contact Zahira Cruz at (301) 415-3808.

Sincerely,

/RA Ted Carter for/

Bruce Watson, Chief
Reactor Decommissioning Branch
Division of Decommissioning, Uranium
Recovery, and Waste Programs
Office of Nuclear Material Safety and
Safeguards

Docket No.: 50-312

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