

September 25, 2009

Mr. Einar T. Ronningen  
Superintendent, Rancho Seco Assets  
Sacramento Municipal Utility District  
14440 Twin Cities Road  
MS N493  
Herald, CA 95638

SUBJECT: RANCHO SECO NUCLEAR GENERATING STATION - RELEASE OF LAND  
FROM PART 50 LICENSE

Dear Mr. Ronningen:

I am responding to your letter of June 8, 2009, in which you requested the U.S. Nuclear Regulatory Commission's (NRC) approval of the release of a portion of the Rancho Seco Nuclear Generating Station (Rancho Seco) site from the 10 CFR Part 50 license DPR-54. The area to be released consists of the entire licensed site, except for the area associated with the Interim Onsite Storage Installation (IOSB). This would leave only the area associated with the IOSB on the Part 50 License. Your letter indicated that you have reviewed and assessed the survey areas to be released in accordance with the Rancho Seco License Termination Plan (LTP) and the NRC Safety Evaluation of the LTP, dated November 27, 2007, to ensure that this proposed action will have no adverse impact on the ability of the site, in the aggregate, to meet the 10 CFR 20, Subpart E, criteria for unrestricted release.

The NRC staff has reviewed your proposed partial site release, as described in your June 8, 2009, letter, and finds the proposed release to be acceptable, subject to the following comments:

Following removal from the license, in the unlikely event the released areas were to become radiologically contaminated as a result of later decommissioning activities at the Rancho Seco IOSB or Independent Spent Fuel Storage Installation, the contamination would be considered an off-site release, and subject to 10 CFR Part 20.

The Sacramento Municipal Utility District is required to maintain \$100 million in nuclear liability insurance coverage, as described in Indemnity Agreement B-66 "until all the radioactive material has been removed from the location and transportation of the radioactive material from the location has ended as defined in subparagraph 5(b), Article 1, or until the Commission authorizes the termination or modification of such financial protection." Approval of this partial site release request has no impact on the terms of the indemnity agreement. In particular, it should be noted that the site location described in Item 4 of Amendment No. 3 to the indemnity agreement means the "original" 10 CFR Part 50 license site boundaries. The liability insurance coverage level shall not be reduced below the minimum \$100 million amount without prior NRC approval.

A copy of the staff's safety evaluation is enclosed.

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." Based on this review, the residual radioactivity in soil and groundwater at the site do not exceed the trigger values in the MOU and, as such, consultation with EPA in accordance with the MOU is not required.

In accordance with 10 CFR Part 2.390 of NRC's "Rules of Practice," a copy of this letter will be available electronically for public inspection in NRC Public Document Room, or from the Publicly Available Records component of NRC's Agencywide Document Access Management System (ADAMS). ADAMS is accessible from NRC Web site: <http://www.nrc.gov/reading-rm/adams.html>.

If you have any questions concerning this evaluation, please contact John Hickman at (301) 415-3017, or by e-mail at [john.hickman@nrc.gov](mailto:john.hickman@nrc.gov).

Sincerely,

**/RA/**

Keith I. McConnell, Deputy Director  
Decommissioning and Uranium Recovery  
Licensing Directorate  
Division of Waste Management  
and Environmental Protection  
Office of Federal and State Materials  
and Environmental Management Programs

Docket No.: 50-312  
License No.: DPR-54

Enclosure: Safety Evaluation

cc: Rancho Seco Service List

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SAFETY EVALUATION BY OFFICE OF FEDERAL AND STATE MATERIALS  
AND ENVIRONMENTAL MANAGEMENT PROGRAMS  
THE RELEASE OF LAND FROM FACILITY OPERATING LICENSE NO. DPR-54  
RANCHO SECO NUCLEAR GENERATING STATION  
SACRAMENTO MUNICIPAL UTILITY DISTRICT  
DOCKET NO. 50-312

1.0 INTRODUCTION

On June 7, 1989, Sacramento Municipal Utility District (SMUD, the licensee, the District) permanently terminated nuclear power operations at the Rancho Seco Nuclear Generating Station (Rancho Seco). On December 8, 1989, SMUD completed defueling the reactor. On March 17, 1992, the U.S. Nuclear Regulatory Commission (NRC) amended the Rancho Seco operating license to "Possession Only" status. On March 20, 1995, the NRC issued the Rancho Seco Decommissioning Order. The Order authorized SMUD to decommission the facility and accepted the Rancho Seco decommissioning funding plan. SMUD began actively decommissioning Rancho Seco in February 1997. In March 1997, SMUD revised the Rancho Seco Decommissioning Plan to conform to the content requirements of the Post Shutdown Decommissioning Activities Report (PSDAR).

On June 30, 2000, the NRC issued Materials License SNM-2510 for the Rancho Seco Independent Spent Fuel Storage Installation (ISFSI). This site specific, 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 and no fuel is stored at the 10 CFR Part 50 licensed facility. The ISFSI is a separately licensed facility located outside the Part 50 licensed site, and will not be affected by the action described below.

By letter dated June 8, 2009<sup>1</sup>, SMUD requested NRC approval of the release of a portion of the Rancho Seco site from the 10 CFR Part 50 license DPR-54. The area to be released consists of the entire licensed site except for the area associated with the Interim Onsite Storage Installation (IOSB). This would leave only the area associated with the IOSB on the Part 50 license. The IOSB, which is located within the area covered by the current Part 50 license, is used for the temporary storage of Class B and C waste until an acceptable disposal site is identified by the licensee. There is no greater than Class C waste or High Level Waste stored in the IOSB.

Rancho Seco indicated that they have reviewed and assessed the survey areas to be released in accordance with the Rancho Seco License Termination Plan (LTP)<sup>2</sup> and the NRC Safety

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<sup>1</sup> ADAMS Accession No. ML091670511

<sup>2</sup> ADAMS Accession Nos. ML061460053 and ML081990483

Evaluation (SE)<sup>3</sup> of the LTP dated November 27, 2007, to ensure that this proposed action will have no adverse impact on the ability of the site in aggregate to meet 10 CFR 20.1402, criteria for unrestricted release. Radiological surveys for the areas to be released were submitted in five final status survey (FSS) reports.

## 2.0 EVALUATION

### 2.1 Applicable Requirements

Section 1.4.2 of the LTP describes the licensee's approach to license termination:

The District intends to release the Rancho Seco site for unrestricted use in two phases, with the license terminated after completion of the second phase. The first phase includes the majority of the site, including impacted and non-impacted areas, except for IOSB. In general, each location will be released after the completion of the associated final status surveys. Once an area has been verified as ready for release, no additional surveys or decontamination of the subject area will be required unless the controls (e.g., administrative or engineered) established to prevent re-contamination have been compromised.

Following completion of an FSS for a given survey unit, Rancho Seco staff will develop an FSS Report to document the final radiological condition of the area and demonstrate that the criteria in 10 CFR 20.1402 are met. These reports will be compiled and submitted to the NRC. Following the completion and acceptance of the FSS Reports for the first phase, the District will submit a license amendment request to release the first portion of the site for unrestricted use.

Since there is currently no disposal site for Class B & C radioactive waste that is acceptable to the District, the District will continue to store this waste in the IOSB. After disposing of the Class B & C radioactive waste when an acceptable disposition option becomes available, the District will complete the FSS for the second phase (i.e., the IOSB) and submit a license amendment request to release the remainder of the site and terminate the 10 CFR Part 50 license.

Because the approved LTP includes the phased site release process set forth above, the 10 CFR 50.83 partial site release requirements are not applicable here.

### 2.2 Area to be Released and FSS Results

The area the licensee intends to release consists of the entire licensed site, except for the areas associated with the IOSB. This would leave only the area associated with the IOSB on the Part 50 license. The licensee submitted FSS reports for the areas to be released which were reviewed by the staff for consistency with the LTP. The reports submitted and the staff's review are summarized below.

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<sup>3</sup> SER related to Amendment 133 to License DPR-54, dated November 27, 2007, ADAMS Accession No. ML072070291

FSS Report 1 was submitted on November 19, 2007<sup>4</sup>. This report addressed the following site survey units:

8510004	Switch Yard Building Interior
8510003	Switch Yard Building Exterior
8050011	Administration Building Interior
8050012	Administration Building Exterior
8040011	Personnel Access Portal (PAP) Building Exterior
8040012	PAP Building Interior
8111571	Reactor Building Dome
8140002	Training and Records (T&R) Building Exterior
8140010	T&R Building Interior
8210001	Water Treatment Building Interior
8210002	Water Treatment Building Exterior
8220011	Chlorine Building Interior
8220021	Chlorine Building Exterior
8310001	Microwave Building Interior
8310002	Microwave Building Exterior
5010011	Receiving Warehouse Exterior
5010012	Receiving Warehouse Interior
8150021	Nuclear Service Electrical Building (NSEB) Exterior
8150011	NSEB Interior
8170021	Diesel Generator (DG) Building Exterior
8170011	Diesel Generator Building Interior
8330002	Warehouse B Exterior
8330001	Warehouse B Interior
8400002	Warehouse A Exterior
8400001	Warehouse A Interior
8520002	Machine Shop Exterior
8520001	Machine Shop Interior
8560001	Secondary Alarm Station (SAS) Exterior
8560002	SAS Interior
813000	Auxiliary Building Rooms

The staff reviewed the FSS1 submittal and, by letter dated April 4, 2008<sup>5</sup>, determined that the subject FSS reports were consistent with the previously approved LTP and were, therefore, acceptable.

FSS report number 2 was submitted on January 24, 2008<sup>6</sup>. This report addressed the following site survey units:

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<sup>4</sup> ADAMS Accession Number ML073370355

<sup>5</sup> ADAMS Accession Number ML080920295

<sup>6</sup> ADAMS Accession Numbers ML080850282

8080011	East & West Cooling Towers, interior of the cooling tower basins.
8090011	Sewer Plant
813000	Auxiliary Building rooms
8240001	Plant Cooling Water Intake
8260001	Condensate Pit Sump
8261001	South Turbine Pedestal
8260002	Turbine Building Polisher Sump
8480013-16	Retention Basin Discharge Boxes and Manholes
8500011-14	Solidification Pad
8990021	Auxiliary Feedwater piping
8990060	Component Cooling Water piping
8990091	Clean Drains to Effluent piping
8990281	Main Condensate Pipe
8990431	Service Air Pipe
8990501	Waste Gas Pipe
8991071,2	Clean Drains & Oily Water Separator piping
8991092	Clean Drains & Regenerant Holdup Tank piping

The staff reviewed the FSS2 submittal and, by letter dated July 29, 2008<sup>7</sup>, determined that the subject FSS reports were consistent with the previously approved LTP and were, therefore, acceptable.

FSS report number 3 was submitted on May 14, 2008<sup>8</sup>. This report addressed the following site survey units:

1000001, 2, 3	Effluent Corridor, the open land area bordering "No Name Creek"
1000004	Effluent Corridor
2000001	South Outfall
5010031	Upper/Outer Yard Pavement
5010032	Hazardous Waste Building Pad
5010041	Extended Parking Area
5010042	Extended Parking Area
8000041	Central Transit Area
8000071	West Industrial Area
8000121	Industrial Area Waste Storage Buffer Zone
8000141	North IA Soil
813000	Auxiliary Building rooms
8230001	Intake Pump Structure
8261002	Low Pressure (LP) Turbine Pedestal
8320001	Diesel Fuel Oil Pad Area
8390001	Transformer Yard
8430011, 21	Barrel Farm
8480021	Retention Basin Buffer Zone

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<sup>7</sup> ADAMS Accession Number ML081770362

<sup>8</sup> ADAMS Accession Number ML081580601

8480011	North Retention Basin
8480012	South Retention Basin
8480017	Retention Basin Surface Soil
8480018	Retention Basin Concrete Storage Area
8510001, 2	Switch Yard
857001	Subsurface Vaults
8990071,2,3	Clean Drain System (CDS) Turbine Building Drains
8990291	Main Circ Water Pipe
8990321	Nitrogen System Pipe
8990351	Nuclear Service Water Pipe
8990471	Service Water Pipe
8990511	Carbon Dioxide System Pipe
8990521	Acid Waste System Pipe
8990054	CDS-Storm Drain Non-Discharge Pipe
8991073	CDS-Oily Water Separator
8991091	RHUT Pipe Trench

The staff reviewed the FSS3 submittal and, by letter dated September 23, 2008<sup>9</sup>, determined that the subject FSS reports were consistent with the previously approved LTP and were, therefore, acceptable.

FSS report number 4 was submitted on July 31, 2008<sup>10</sup>. This report addressed the following site survey units:

800001	Helo Pad
8000103	Aux Building-Nuclear Services Electrical Building
8120011, 13, 15, 16	Fuel Building
813000	Auxiliary Building Rooms
826000	Turbine Building
848019	Retention Basin Miscellaneous Small Buildings
8540001, 2	Misc Small Buildings (POL [petroleum, oil and lubricants] and Lawn Maintenance)
899000	Buried or Embedded Radwaste Piping Systems

The staff reviewed the FSS4 submittal and, by letter dated April 23, 2009<sup>11</sup>, determined that the subject FSS reports were consistent with the previously approved LTP and were, therefore, acceptable.

FSS report number 5 was submitted on March 5, 2009<sup>12</sup>. This report addressed the following site survey units:

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<sup>9</sup> ADAMS Accession Number ML082270196

<sup>10</sup> ADAMS Accession Number ML082620127

<sup>11</sup> ADAMS Accession Number ML091060657

<sup>12</sup> ADAMS Accession Number ML090830613

5010051	Access Road Area
8000072	Industrial Area (IA) West of Barrel Farm
800073	IA West of the Barrel Farm
8000091	South East IA Lands
8000101 & 2	IA Central Yard
8000104	Pump alley Access Corridor
8000105	IA roadway
8000106	Central IA Roadways
8000111	IA Central, East-West Corridor and Fab Shop Slab
8000142	Northern IA Paved Surfaces
8080031-3	Cooling Tower Buffers, South West and East
810000	Tank Farm and Steam Sump.
8110000	Reactor Containment
812000	Fuel Building
813000	Auxiliary Building
8140003	Training and Records Building, Auxiliary Building, and Nuclear Service Electrical Building +40' Bridge
826000	Turbine Building
8340011	The IA Railway
8340012	IA Railway
8340021	Rail area external to the IA
8370001,2	Regenerant Holdup Tank, Aux Boiler Pad
8510005	Land on the west side of the IA.
8990074	Turbine Pedestal Drains
8990098	Clean Drain System "C" Hold-Up tank Cross-Tie
8990111	Decay Heat Drain Lines Reactor Building
8990401	Reactor Building Drains
8990441	Fuel Pool Piping System
8991093	RHUT 8" Lines

The license provided supplemental information regarding FSS 5 by letter dated September 1, 2009<sup>13</sup>. This information addressed multiple transposition errors that did not affect the results of the surveys and the integration of the surveys for the Reactor Building Floor. The staff reviewed the FSS5 submittals and has determined that the subject FSS reports are consistent with the previously approved License Termination Plan and are, therefore, acceptable.

Multiple other survey areas were identified in the LTP for which no FSS reports were submitted. By e-mail dated May 22, 2009<sup>14</sup>, the staff requested the licensee to reconcile this discrepancy. The licensee replied by e-mail dated June 1, 2009<sup>15</sup>. The licensee explained that several survey areas were combined during final status surveys due to the results of the characterization. In

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<sup>13</sup> ADAMS Accession Number ML092570337

<sup>14</sup> ADAMS Accession Number ML091970607

<sup>15</sup> ADAMS Accession Number ML091540134

some cases, there is some overlap of survey units, so more than one survey unit contains some portion of the area listed. The licensee provided a cross-reference for the survey units in question and surveys performed. The staff reviewed this information and determined that all survey areas were addressed satisfactorily.

In the September 1, 2009, supplement for FSS 5, the licensee also provided a report of as left doses by survey unit. This report documented that the highest as left dose was 11 mRem/year, in the reactor building dome, and the lowest as left dose was 0.02 mRem/year, in several locations. The average as left dose for all survey units was 1.16 mRem/year. These doses are significantly less than the NRC release criteria of 25 mRem/year.

### 2.3 Remaining Dismantlement / Decommissioning Activities

With the exception of decommissioning activities at the IOSB to be undertaken when all stored waste has been removed, all decommissioning and dismantlement activities have been completed at this site. Thus, no dismantlement activities are required in the survey areas to be released. The IOSB and immediately surrounding areas are to be retained under the Part 50 license.

### 2.4 Controls to Prevent Recontamination

The only remaining sources of potential recontamination of the area to be released are the ISFSI and the IOSB. As indicated above, the Rancho Seco ISFSI is governed by a separate 10 CFR Part 72 license and is located outside the 10 CFR Part 50 site and the area to be released. Any contamination of the released site by the ISFSI would be an offsite release from the Part 72 licensed facility and would be addressed under that license. Any contamination of the released site by the IOSB would be an offsite release from the Part 50 licensed facility and would be addressed under that license.

### 2.5 Impact of Proposed Partial Site Release on Programs and Documents

#### 2.5.1 Decommissioning Safety Analysis Report (DSAR)

The proposed release will require minor changes to the DSAR to revise the reduced site area description. DSAR Figure 2-2 will be revised to identify the new site boundary. The licensee has stated that this revision will be performed.

#### 2.5.2 Technical Specifications

The Rancho Seco Defueled Technical Specifications are not impacted by the release of the subject survey areas, as a size and description of the site are not included in the Technical Specifications. The survey and release processes are consistent with the LTP and associated License Condition. The few remaining Technical Specifications, addressing site location and high radiation area controls, remain in effect for the IOSB until that facility is decommissioned.

### 2.5.3 Radiological Environmental Monitoring Program

Gaseous, liquid, and solid radwaste systems associated with the operation of Rancho Seco have been removed and disposed. Site decommissioning activities have been concluded for the site (except those required in the future for the IOSB), and discharges of radioactive material (gaseous or liquid) are no longer made from the reactor building, auxiliary building, or spent fuel building. No systems operate at the IOSB which would lead to gaseous discharges. Waste repacking performed prior to shipment or eventual decontamination of the IOSB could lead to minor gaseous discharges through the monitored building ventilation system, but they are not expected to be measurable outside the building. Accordingly, the Radiological Environmental Monitoring Program has been revised to address direct radiation monitoring associated only with the IOSB which is to be retained under the Part 50 license.

### 2.5.4 Offsite Dose Calculation Manual (ODCM)

Gaseous, liquid, and solid radwaste systems associated with the operation of Rancho Seco have been removed and disposed. Site decommissioning activities have been concluded for the site (except those required in the future for the IOSB), and liquid discharges of radioactive material are no longer made. The IOSB will continue to store solid waste, and as stated above, minor gaseous discharges may occur through the IOSB monitored building ventilation system. Therefore, the licensee revised the ODCM to reflect that Rancho Seco no longer discharges liquid radioactive effluents.

### 2.5.5 Defueled Emergency Plan

The Rancho Seco Emergency Plan describes the emergency response plan for both the decommissioning power reactor site and the ISFSI. As the former nuclear plant has been dismantled and decommissioned, the Emergency Plan for the site has been reduced to primarily address the ISFSI. The emergency plan will continue to address response to emergencies at the ISFSI consistent with 10 CFR 72, while the decommissioning reactor portion will be reduced, pursuant to 10 CFR 50.54(q), to address the reduced source term remaining in the IOSB consistent with 10 CFR 50. Therefore, the emergency Plan will not be affected by release of the proposed areas.

### 2.5.6 Security Plan

The nuclear security plan addresses the 10 CFR Part 72 licensed ISFSI only and will not be affected by the release of the proposed areas. Regarding the IOSB, the staff is currently considering increased controls with respect to the possession of radioactive material quantities of concern. Security for the IOSB will be addressed as a separate issue for the Part 50 license and does not impact this proposed release.

### 2.5.7 License Termination Plan

The proposed partial site release is consistent with the LTP, and the proposed release does not impact the LTP.

### 2.5.8 Groundwater

The Groundwater Monitoring Program is intended to integrate all aspects of groundwater characterization, monitoring, and remediation required to support unrestricted release of the Rancho Seco site. The LTP included a commitment to provide a report of groundwater sampling and analyses which would be issued upon the completion of sampling and analyses of one full year (four calendar quarters representing the annual four seasons) of groundwater monitoring. The Rancho Seco Groundwater Monitoring Report (RSGMR) was issued on September 6, 2006<sup>16</sup>.

The RSGMR concluded:

Licensed radioactive materials, including tritium, resulting from the operation and decommissioning of Rancho Seco, have not contaminated the regional aquifer under the Rancho Seco site.

Groundwater under the Rancho Seco site is a regional aquifer, with the top of the aquifer approximately 183 feet bgs [below ground surface] under the Industrial Area of the site and the bottom of the aquifer at approximately 2,000 feet bgs.

With site-specific data obtained in the 2005-2006 investigation and previous investigations, an estimate of the migration speed of a water particle concludes it is likely that migration from the site surface to groundwater will require more than 80 years and migration to the property boundary will require more than 1,500 years.

The NRC has reviewed the licensee's groundwater sampling documents and analysis and agrees that there is no indication of site radionuclides or other site contaminants in the groundwater. No plant generated radionuclides have been observed in the soil or rock materials beneath the RSNIGS industrial area at a depth of greater than 25 feet and any contamination in the near surface soils has been remediated to meet the site release criteria. Therefore, based on the lack of detectable contamination in the groundwater, the minimal residual contamination, and the long transit time to the groundwater aquifer, groundwater compliance with the release criteria has been achieved.

### 2.5.9 10 CFR 100 Siting Criteria

10 CFR Part 100 addresses design and environmental aspects to be considered in siting a power reactor. Decommissioning of the Rancho Seco power reactor portion of the site has been completed. Only the IOSB will remain under the 10 CFR Part 50 license after this proposed partial site release. Therefore, the criteria of 10 CFR Part 100 no longer applies to this site and need not be addressed.

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<sup>16</sup> ADAMS Accession Number ML062980496

### 2.5.10 Decommissioning Environmental Report

The licensee evaluated the environmental impacts of decommissioning Rancho Seco compared to NUREG-0586, "Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities" (GEIS) and determined that the decommissioning was bounded by the GEIS. The decommissioning process is completed for the area to be released, therefore the conclusions documented in the "Rancho Seco Environmental Report – Post Operating License Stage" are not impacted by the proposed release.

### 2.6 NRC Inspections and Confirmatory Surveys

NRC survey contractors from the Oak Ridge Institute for Science and Education (ORISE) performed multiple in-process and confirmatory surveys of the radiological conditions at Rancho Seco during decommissioning. ORISE also performed confirmatory analysis of samples from Rancho Seco. Samples were tested by gamma spectroscopy for Co-60, Cs-137, gross beta activity, and other gamma-emitting radionuclides associated with Rancho Seco. Reports of ORISE surveys and sample analyses were provided on January 18, 2005<sup>17</sup>, October 25, 2006<sup>18</sup>, July 12, 2007<sup>19</sup>, December 21, 2007<sup>20</sup>, March 12, 2008<sup>21</sup>, April 25, 2008<sup>22</sup>, August 29, 2008<sup>23</sup>, May 6, 2009<sup>24</sup>, May 7, 2009<sup>25</sup>, July 21, 2009<sup>26</sup>, and September 24, 2009<sup>27</sup>. NRC inspections of Rancho Seco site survey activities are documented in inspection reports dated July 5, 2006<sup>28</sup>, December 6, 2006<sup>29</sup>, September 6, 2007<sup>30</sup>, November 16, 2007<sup>31</sup>, February 1, 2008<sup>32</sup>, June 6, 2008<sup>33</sup>, September 24, 2008<sup>34</sup>, and January 9, 2009<sup>35</sup>.

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<sup>17</sup> ADAMS Accession Number ML050210212

<sup>18</sup> ADAMS Accession Number ML073450454

<sup>19</sup> ADAMS Accession Number ML071990133

<sup>20</sup> ADAMS Accession Number ML080350070

<sup>21</sup> ADAMS Accession Number ML090510029

<sup>22</sup> ADAMS Accession Number ML090480583

<sup>23</sup> ADAMS Accession Number ML090480582

<sup>24</sup> ADAMS Accession Number ML091350468

<sup>25</sup> ADAMS Accession Number ML091470103

<sup>26</sup> ADAMS Accession Number ML092050215

<sup>27</sup> ADAMS Accession Number ML092680306

<sup>28</sup> ADAMS Accession Number ML061860673

<sup>29</sup> ADAMS Accession Number ML063400133

NRC inspectors reviewed the licensee's survey results, the licensee's survey methodology, and the licensee's plans for demonstrating that the survey results would demonstrate that structures and areas met acceptable radiological levels for release. NRC staff also reviewed confirmatory and in-process radiation and contamination surveys conducted by ORISE. Confirmatory surveys provide confidence that the licensee's survey results are representative of the conditions for that survey unit. In-process surveys provide confidence that the licensee's survey results are accurate. Based on the data review, discussions and observations, the inspector observed that the licensee had in place methods for demonstrating compliance with the release criteria. The inspector found that the licensee had in place a methodology in which the survey results were used to assess the radiological condition of the structures in order to determine whether further remediation was required, or the structures were suitable for demolition.

During some ORISE confirmatory surveys (Reports dated April 25, 2008, May 6, 2009, and July 21, 2009), areas of elevated activity were identified at some locations which were due to discrete particles of radioactive material. Since ORISE only surveyed portions of applicable survey units that potentially could have discrete particles, NRC requested Rancho Seco to re-survey all outdoor class 1 areas and onsite transport routes. The licensee began a review of its survey procedures relative to the post FSS identification of these "hot particles" and the dose significance of the particles. The licensee provided a description of its actions in response to the hot particles and a dose analysis in Attachment 2 to its June 8, 2009, site release request. Although the licensee identified several discrete particles in its re-surveys and remediated any identified areas of elevated radioactivity it also reported that the post final status surveys did not identify any areas of radioactivity that exceeded the LTP criteria. The staff has reviewed the licensee's actions and determined that they are acceptable.

In addition to the independent in-process surveys, the inspectors also split several samples with the licensee to assess the licensee's capability to characterize various areas and structures of the site. The samples were analyzed by the NRC's contract laboratory, ORISE. The results indicated that the licensee correctly characterized systems and structures.

In summary, NRC Inspections and ORISE Confirmatory Surveys corroborated that the radiological conditions of the open land areas survey units that are proposed to be released, met the approved site-specific DCGLs, and that Rancho Seco's laboratory data were consistent and in agreement with the ORISE's analytical results.

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<sup>30</sup> ADAMS Accession Number ML072490429

<sup>31</sup> ADAMS Accession Number ML073200888

<sup>32</sup> ADAMS Accession Number ML080320255

<sup>33</sup> ADAMS Accession Number ML081580536

<sup>34</sup> ADAMS Accession Number ML082690356

<sup>35</sup> ADAMS Accession Number ML090090386

## 2.7 Evaluation of the Need for a NRC/EPA Level 2 Consultation

### 2.7.1 Background

NRC and the U.S. Environmental Protection Agency (EPA) entered into a Memorandum of Understanding (MOU) for "Consultation and Finality on Decommissioning and Decontamination of Contaminated Sites." on October 9, 2002<sup>36</sup>. The MOU provides that, unless an NRC-licensed site exceeds any of three trigger criteria contained in the MOU, EPA agrees to a policy of deferral to NRC decision making on decommissioning without the need for consultation.

For sites that trigger the criteria in the MOU, NRC will consult with EPA at two points in the decommissioning process: (1) prior to NRC approval of the LTP or decommissioning plan, which NRC terms Level 1 consultation; and (2) following completion of the FSS, which NRC terms Level 2 consultation.

On August 24, 2007<sup>37</sup>, the NRC sent a Level 1 consultation letter to EPA titled "Consultation on the Decommissioning of the Rancho Seco Nuclear Generating Station in Herald, California". This letter was sent because the licensee's proposed derived concentration guideline levels (DCGLs) for certain radionuclides at Rancho Seco exceed the soil concentration values in Table 1 of the MOU.

### 2.7.2 Evaluation

As noted in the Level 1 consultation letter to EPA, no plant generated radionuclides have been observed in the soil or rock materials beneath the RSNGS industrial area at a depth of greater than 25 feet. The closest groundwater source beneath the RSNGS is the water table which is approximately 165 feet below the ground surface. It is unlikely that plant-generated radionuclides will reach the groundwater or migrate offsite in the future.

When comparing the soil analysis results to the MOU trigger levels for soil concentration in pCi/g, NRC did not identify any measurement of soil concentration that exceeded the MOU trigger levels. The maximum Cs-137 concentration is 1.04 pCi/g (trigger level = 11 pCi/g) and the maximum Co-60 concentration is 2.01 pCi/g (trigger level = 6 pCi/g). The "as left" survey unit doses are below the DCGLs and meet the 10 CFR 20, Subpart E release criteria. After evaluating this information, NRC determined that a Level 2 consultation with EPA is not necessary.

## 3.0 Conclusions

NRC's review of the licensee's LTP determined that the proposed DCGLs would ensure that the 10 CFR 20, Subpart E, release criteria would be met. NRC's review of the FSS reports determined that the reports were consistent with, and demonstrated compliance with, the LTP

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<sup>36</sup> ADAMS Accession Number ML228302208

<sup>37</sup> ADAMS Accession Number ML072210206

and the FSS results demonstrate that the survey areas to be released meet the radiological criteria for unrestricted release. The average as left dose for all survey units was 1.16 mRem/year which is significantly less than the NRC release criteria of 25 mRem/year. NRC also concluded that a Level 2 consultation with EPA was not required based on the as-left soil radioactivity concentrations. Review of the licensee's submittal requesting the release adequately addressed the criteria as provided in the LTP. NRC inspections and confirmatory measurements substantiated that the licensee's decommissioning and FSS programs adequately assessed the radiological conditions at the site. Therefore, the NRC approves releasing the subject survey areas from the license, as specified in SMUD's June 8, 2009, request.

Principal Contributors: John B. Hickman  
Stephen Giebel

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