

February 27, 2007

Mr. Steve J. Redeker, Manager
Plant Closure & Decommissioning
Sacramento Municipal Utility District
14440 Twin Cities Road
Herald, CA 95638-9779

SUBJECT: RANCHO SECO NUCLEAR GENERATING STATION – REQUEST FOR
ADDITIONAL INFORMATION RE: ENVIRONMENTAL ASSESSMENT FOR
LICENSE TERMINATION PLAN (TAC NO. L52668)

Dear Mr. Redeker:

By letter dated April 12, 2006, Sacramento Municipal Utility District submitted a License Termination Plan (LTP) and an application to amend the license to incorporate a new license condition addressing the LTP for the Rancho Seco Nuclear Generating Station. The new license condition would document the date of the U.S. Nuclear Regulating Commission (NRC) approval of the LTP and provide criteria to determine the need for NRC approval of changes to the approved LTP. The NRC staff has reviewed the information provided and has determined that additional information is required as identified in the enclosure.

If you have any questions on these matters, please contact me at (301) 415-3017.

Sincerely,

/RA/

John B. Hickman, Project Manager
Decommissioning and Uranium Recovery
Licensing Directorate
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Materials Programs

Docket No.: 50-312

Enclosure:
Request for Additional Information

cc: Rancho Seco Service List

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DATE	2 /27/ 2007	12/26/2006	2 /27/ 2007

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cc: Rancho Seco Nuclear Generating Station Service List

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REQUEST FOR ADDITIONAL INFORMATION
REGARDING THE LICENSE TERMINATION PLAN
RANCHO SECO NUCLEAR GENERATING STATION
DOCKET NO. 50-312

ENVIRONMENTAL ISSUES

1. Section 8.6.3.13, Aesthetics Issues, states that the District intends on leaving the major concrete plant structures in place after the completion of decommissioning and license termination. It is understood that temporary structures will be dismantled and removed.
 - a. Please describe any plans for restoration, re-vegetation, and other permanent environmental measures (e.g., erosion controls) at the site (e.g., areas of the site where temporary structures will be dismantled and removed).
 - b. Please describe the approximate acreage of the site occupied by infrastructure (e.g., buildings, roads, parking lots) prior to decommissioning and what that acreage would be after the site is released from NRC licensing.
 - c. Please identify potential environmental effects (e.g., on migratory birds and raptors) from the structures (e.g., hyperbolic cooling towers) that will remain in place after unrestricted release of the site or portions of the site. Include any related requirements that will need to be complied with after release of the site or portions of the site from NRC licensing (e.g., avian protection related acts).
 - d. Please provide a listing to clarify which specific structures will likely remain standing at the site after release from NRC licensing.
2. Please summarize any changes that are planned for the site storm drain system and outfall discharge pipes, including the portions of the system that provide drainage from the switchyard and the Independent Spent Fuel Storage Installation (ISFSI).
3. Section 3.3.6.1, Deferred Activities, Storage of Class B and C Waste, states that it is the decision of the District management that acceptable waste disposal options for Class B and C waste do not exist at this time. Further, the waste will be stored in the IOSB until such time as an acceptable waste disposal site is available, when the waste will be shipped and the building will be decontaminated as required. Additionally, Section 8.3, Site Description After Unrestricted Release, states that the District intends to release the site for unrestricted use in two phases, with the majority of the site released in the first phase. The second phase is identified as release of the IOSB, which is indicated as remaining on the 10 CFR Part 50 license until the license is terminated with the unrestricted release of the IOSB.
 - a. Please confirm that the current maintenance and monitoring procedures used for the site include the IOSB, including physical and radiation monitoring of the facility and waste containers. Please specifically confirm that the IOSB is addressed in the current environmental monitoring, emergency, and security plans.

Enclosure

- b. Please identify the approximate area size and location of the fence line and gate for the portion of the site that will remain on the license with the IOSB and the relationship to the spent fuel storage area, including both the distances between the spent fuel and the IOSB fence lines. Also, indicate the location and expected readings for maximum radiation levels between the IOSB and spent fuel storage area. If the land between the spent fuel storage area and IOSB is not going to remain on the license, indicate the anticipated maximum radiation doses in this region where unrestricted release is occurring between the two fence lines and provide the analysis to assure that 10 CFR Part 20 public dose limits will not be exceeded (using dose contributions from the ISFSI, released area, and IOSB). Additionally, please identify these locations on a map or diagram.
 - c. Please identify access roads and paths that will continue to exist after the first phase of site release and will be located nearest to the new IOSB fence line, including location and distance from the IOSB. Clarify whether access to these roads and paths are controlled in some way or available for public access. Please include travel volume estimates for these roads and paths. Additionally, please identify the locations on a map or diagram.
 - d. Please indicate if there are plans to store non-radioactive waste in the IOSB. Also, clarify whether or not there are any plans to store waste from other facilities at the IOSB and whether or not this waste is radioactive waste.
4. Section 8.5.1.3.1, Land Use, states that the Rancho Seco Updated Safety Analysis Report (USAR) Figure 2.2-6 provides a detailed description of all agricultural and residential activities within a 5-mile radius of the site, and USAR Figures 2.2-7, 2.2-8, and 2.2-9 identify agricultural activities within a 50-mile radius.
- a. The Defueled Safety Analysis Report (DSAR), Amendment 2, Section 1.1, Introduction, states that the DSAR replaced the USAR as the primary licensing basis document applicable to Rancho Seco in the Permanently Defueled Mode. Further, Figure 2.2-4 of this document appears to be the only figure in the DSAR that identifies agricultural uses. Given these differences in descriptions between the Supplemental Environmental Report reference to the USAR and the DSAR, please provide new copies of the appropriate figures that identify current agricultural and residential activities to better assure that our review is addressing the applicable information.
 - b. Please identify references used for any information provided. Further, please include a brief written explanation of the figures provided.
5. Section 8.5.4.1, Hydrology, states that within recent times no flooding or inundation from storms or runoff has occurred within the site boundaries. Further, it is highly unlikely that the site could be flooded, even with abnormal rainfall intensities.
- a. Please identify what period of years the wording “in recent times” is intended to include.
 - b. Please provide the specific reference(s) for the source(s) of both the “recent times” determination and conclusion that it is highly unlikely that the site could be flooded.

- c. Please identify the location of the nearest flooding outside of the current site boundaries for the same period of years or at least the last 100 years, whichever is the longest period of time.
6. Throughout the plan and, especially, in Chapter 2, Site Characterization, the terms Industrial Area, Area 8, Impacted Area, and Un-Impacted area are used (example: Sections 2.1.7.3, 2.1.10, and Section 2 figures).
 - a. Please clarify the size of each area (e.g., acres), other than the Industrial Area (already indicated in the LTP).
 - b. Please clarify the location of barriers and access points (e.g., fences and gates) that are currently associated with these areas and will remain after these areas are released from licensing. Further, identify the type and location of any new barriers or access points that will be established with release of these areas.
 - c. Please clarify the location and approximate size (e.g., acres) of all recreational areas in the vicinity of Rancho Seco and the approximate distance from the Industrial Area. Include a listing of recreational activities, for areas not already described. Please clarify the location of any water recreation areas and their position along the hydrogradient (e.g., up-gradient, down-gradient) from the Industrial Area. A size estimate for Rancho Seco Lake is already provided, but clarifications are needed regarding what recreational activities take place at the lake.
7. Sections 8.7.1, Federal Requirements, and 8.7.2, State and Local Requirements, identify regulations, permits, licenses, notifications, and approvals that are in place during decommissioning.
 - a. From these Sections, please provide a listing of local, State, and Federal regulations that will continue during the period when only the IOSB remains on the NRC license, as well as, afterward, when the entire site is released from the license.
 - b. The Federal Requirements listing indicates that Rancho Seco must comply with the U.S. Environmental Protection Agency regulations for underground storage tanks (Part 280 of 40 CFR). Please clarify whether any tanks will remain on the site after the site is released from NRC licensing. If so, please identify their past and, if applicable, continued use, as well as any performance issues.
8. Section 8.5.1.3.3, Water Supply, identifies that potable water comes from four wells and one well serves a residence located at the northeastern corner of the site.
 - a. Please summarize plans for operation of the plant's water supply system with release of the site from NRC licensing.
 - b. Please specify the approximate distance between the current Industrial Area fence and the residence located on the site.

IN SITU GAMMA SPECTROSCOPY ISSUES

The Staff has identified technical issues with the application of in situ gamma spectroscopy. An ORISE report is available on ADAMS (ML06360021) for further review. More specifically, the Staff is concerned with the application of the in situ gamma spectroscopy, and its ability to detect and differentiate between hot particles, hot spots, and uniform contamination. The Staff is concerned with the detection capabilities and dose implications from these different sources.

Table 5-11, "Typical FSS Survey Instrumentation", pg 5-37, and Table 5-12, "Typical FSS Detection Sensitivities," identifies the high purity germanium detector for possible in situ field spectrum analysis. Rancho Seco provided the Decommissioning Technical Basis Document, DTBD-06-003, "Use of In Situ Gamma Spectroscopy for Final Status Survey" for establishing a technical basis for the use of in situ gamma spectroscopy for final status surveys.

HOT PARTICLES

1. During a recent visit to the site, the NRC staff observed "Hot Particle" control areas. Please provide a historical assessment of hot particles at Rancho Seco. Please describe how your hot particle survey program relates to the remediation and final status survey programs. Please provide a technical bases for the hot particle detection program.
2. In DTBD-06-003, Rancho Seco identifies the method for determining the Investigation Criteria. DTBD-06-003 states:

"Determination of the Investigation Criteria is based on taking a series of measurements using the detector in a standard geometry, such as a disk, located at a defined distance from the detector. The required geometry parameters are entered into the geometry composer and the acquired spectra area analyzed using the standard geometry. A new geometry is then developed which reduces the source to a area of 1 m² located at the periphery of the detector field of view. The original spectra are then re-analyzed using the new , small source area geometry. The ratio of the full field of view activity to the small source activity is determined and the ratio is multiplied by the DCGL_{emc} for a 1 m² area which becomes the Investigation Criterion."

How does Rancho Seco determine if the activity measured is uniform activity, a hot particle, or a smaller area that exceeds the DCGL_{emc} averaged over an area less than 1 m²?

3. DTBD-06-003 states, *"It is anticipated that final surveys will typically be performed with the detector at a distance of 2 m to 3 m from the source with a 90 degree collimator installed. This geometry defines a detector field of view (FOV) of 12 m² to 28 m²."*

What is the minimal detectable activity (MDA) using a 12 m² FOV vs using a 28 m² FOV, assuming a hot particle is present in the FOV on soil and structure surfaces, at a depth of 2 cm in concrete and at a depth of 15 cm in soil?

4. If such a hot particle exists, how does ISOCS determine its position in the FOV?
5. Based on the MDAs for hot particles, what is the dose implication if such a hot particle is present?

IN SITU GAMMA SYSTEMS AT RANCHO SECO

1. Please provide the technical bases that assures that the DCGL and elevated concentrations do not exceed the depth of 15 cm of soil or 2 cm of surface on structures? Please provide your bases for MDAs taking into consideration the spatial and volumetric measurements you plan to make.
2. Soil moisture can adversely impact the quality of ISOCS measurements. How does Rancho Seco identify and adjust for soil moisture while using ISOCS?
3. Describe how the proposed ISOCS measurements with the proposed FOV will meet the DQOs for the FSS.
4. How does Rancho Seco use the naturally occurring radionuclides that will be identified in the ISOCS measurements to assure quality operations or to identify equipment malfunction?

OTHER

1. In Section 6.4.2, pg. 6-6. Rancho Seco identifies an "industrial worker scenario for surface and subsurface soil exposures" for unrestricted release. It further states in Section 6.4.2.1 that "...the public does not have ready access to the remaining areas of the site". More specifically, please provide assurances as to how RS will maintain these areas under the industrial worker scenario after the first phase and after the second phase (See Section 8.3 Site Description After Unrestricted Release, pg. 8-4). What mechanism will RS use to maintain these areas as an industrial worker scenario?