March 12, 1992

Docket No. 50-312

Mr. James R. Shetler Deputy Assistant General Manager, Nuclear Rancho Seco Nuclear Generating Station 14440 Twin Cities Road Herald, California 95638-9799

Dear Mr. Shetler:

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION RELATED TO THE RANCHO SECO DECOMMISSIONING PLAN AND ASSOCIATED ENVIRONMENTAL REPORT (TAC NO. M80518)

The NRC staff has determined that additional information is necessary in order to complete its review of the Sacramento Municipal Utility District (SMUD's) proposed Decommissioning Plan and associated Environmental Report for the Rancho Seco facility. Enclosure 1 of this letter describes the staff's decommissioning plan informational needs. Enclosure 2 of this letter contains the staff's environmental report informational needs. Cross referencing is acceptable where SMUD believes that the information is provided elsewhere. The NRC staff will be available to meet with SMUD to discuss matters contained in this request for additional information (RAI).

Please submit SMUD's response to this RAI by April 15, 1992.

PDNP PM

3/17/92

SBrownidmj

This requirement affects nine or fewer respondents and, therefore, is not subject to Office of Management and Budget review under P.L. 96-511.

Sincerely, Original signed by: Stewart W. Brown, Project Manager Mon-Power Reactors, Decommissioning and Environmental Project Directorate Division of Advanced Reactors and Special Projects Office of Nuclear Reactor Regulation

Enclosures: As stated

cc w/enclosures: See next page

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

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Stewart W. Brown, Project Manager Non-Power Reactors, Decommissioning and Environmental Project Directorate Division of Advanced Reactors and Special Projects Office of Nuclear Reactor Regulation

Enclosures: As stated

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cc w/enclosures: See next page

#### Mr. James Shetler

Rancho Seco Nuclear Generating Station

#### CCI

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Enclosure 1

Additional Information Needed, RSNGS Decommissioning Plan

#### Specific Comments:

#### 1. Sect. 1.1.2, p. 1-2 (Licensing Basis Documents)

- a. Confirm that other than a license term extension and changes to the Technical Specifications appropriate for hardened SAFSTOR, SMUD has no current plans for license amendments through the custodial-SAFSTOR period.
- b. Provide the schedule for submittal of the Defueled Safety Analysis Report (DSAR).
- c. Confirm that the ODCM and REMP submitted with the DP are current and include all changes mentioned on p. 1-3. Confirm your plan that the ODCM and REMP will remain in force throughout Custodial-SAFSTOR, or identify any planned changes.
- d. Identify the last RSNGS Quality Assurance Program approved by NRC, and any significant differences between that program and the RSSQM document submitted with the DP.
- e. Provide a copy of the current RSNGS Fire Protection Plan (FPP) and confirm your plan that it will remain in force throughout Custodial-SAFSTOR, or indicate any planned changes.
- f. Update statements on p. 1-4 concerning review committees to be consistent with the most recent version of the proposed Permanently Defueled Technical Specifications (PDTS).

#### 2. Sect. 1.1.4, p. 1-7 (Planning Basis and Assumptions)

List and discuss, here or elsewhere in the OP, as appropriate, the systems to be preserved as useful for decommissioning, and the steps taken or to be taker (e.g., lighting, ventilation, etc.) to preserve these systems.

#### 3. Sect. 1.3, p. 1-16 (Site History)

Please provide a tabulation of the total amounts of radioactivity released each year, by radionuclide, for liquid and gaseous effluents through 1991. (Also see related NRC specific comment No. 1 on the ER).

# 4. Sect. 2.2, p. 2-10 (Decommissioning Activities, Tasks and Schedules)

Identify within this section the major activities, tasks and schedules associated with decommissioning for equipment, components and structures, which are not considered radioactive (e.g., the cooling towers and the associated asbesto; panels). The environmental impacts associated with these activities should be included in the Environmental Report (ER).

# 5. Sect. 2.2.1, p. 2-10 (Activities and Tasks)

a. Identify the specific activities and tasks needed to place RSNGS in Custodial-SAFSTOR which: (1) have already been completed; (2) are now in progress or will be initiated prior to DP approval; and (3) will not begin until ?' approval. For the 3rd category of activities, provide descriptions of the wastes to be generated, the waste processing methods to be used, person-rem and person-hour figures, and associated radioactive effluents. The environmental impacts associated with these activities should be included in the ER.

- b. Identify what specific decontamination efforts will be made at each stage, and quantify associated wastes, effluents, and personnel exposures. Identify controls to be used to minimize migration of contamination.
- c. For buildings and areas of buildings not in use, describe inspection and surveillance frequencies, procedures, and expected personnel exposures.
- d. Identify the "heavy components" to be moved and explain why.
- e. Identify the location of waste volume reduction activities.
- f. List and describe the specific activities and tasks needed to put RSNGS in Hardened-SAFSTOR. Include the same information as requested in 5.a, above.
- g. Identify waste storage requirements and locations during Hardened-SAFSTOR, after the Interim Onsite Storage Building is abandoned.
- h. Indicate what consideration has been given to the use of chemical decontamination methods, with application either at this time or in the future, in order to reduce radiation exposure during dismantlement. If future use of chemical decontamination is likely, indicate what consideration has been given to preserving plant systems which might later be treated by chemical decontamination methods, so they would not need extensive repair work prior to treatment. Some additional planning in this area may be beneficial.
- 6. Sect. 2.2.3, p. 2-15 (Staffing and Exposure Summaries)
  - a. In Table 2-2, please identify the stage at which each work activity will occur, and the total person-rem and person-hour estimates for each stage.

b. Reconcile the total SAFSTOR person-rem estimate of Table 2-2 (133 person-rem) with that through Phases 1-5 in Table 4.2 of the TLG Engineering, Inc. (TLG) cost estimate (38 person-rem)

#### Sect. 2.2.4.1, p. 2-16 (Plant Building Structures)

- List the plant buildings and structures which are considered non-contaminated.
- b. For the fuel storage building (FSB), please describe the ventilation system, including filters, release points, and expected emissions.
- c. Discuss and quantify the personnel radiation exposures which will result from continued use of the 2 onsite diesel generators, located in the auxiliary building, as peaking units.

## 8. Sect. 2.2.4.4, p. 2-22 (Plant Water Systems)

- a. Describe and quantify the cooling tower "fills" to be removed during preparation for Custodial-SAFSTOR.
- b. Provide radioactivity contamination data on the cooling towers, the fills, and the basin sludge, in concentrations.

#### 9. Sect. 2.3, p. 2-115 (Decommissioning Organization and Responsibilities)

- a. Explain the relationship between the Assistant General Manager (AGM), the DAGM, and the Nuclear Plant Closure Manager (CM). Which of these positions are filled, will be maintained filled, and for how long?
- b. Explain the statement that "...the CM will assume the AGM's responsibilities."
- c. What is the title of the person directly in charge of the entire radiation protection program, and to whom does that person report?

# 10. Sect. 2.4, p. 2-119 (Training Program)

Confirm that changes to t. e Certified Fuel Handlers Training Program will be submitted to NRC for rf iew and approval.

#### 11. P. 3-10 (Environmental Radioactivity)

Provide a summary of available radioactivity concentration data, and gamma exposure rate data, for the plant discharge canal, Clay Creek, Hadselville Creek, and Laguna Creek. Average and maximum data should be provided, by radionuclide. Data from nearby pasturelands should be included.

#### 12 Sect. 3.1.4, p. 3-12 (Radioactive Waste Volume)

- a. Provide waste volumes by waste class for each stage, including all 6 phases used in the TLG cost estimate (DP Appendix B).
- b. Indicate the source and present status of the greater-than-class C (GTCL) waste.
- c. Indicate the volume and status of any known mixed waste, and the status of permitting for mixed waste storage or treatment.
- d. Indicate to what extent "secondary systems" have been included in the TLG cost estimate. Where secondary systems have been considered as nonradioactive, or suitable for decontamination, please provide a detailed justification.
- e. Indicate how much solid waste has been generated in lay-up or decontamination activities to date, and whether this waste is included in the estimated total of 7,369 cubic yards.

# 13. Sect. 3.1.5, p. 3-12 (Reactor...Radionuclide inventory)

Briefly discuss quality assurance and computer code validation and verification for each computer code modified or developed for the RSNGS activation analysis.

# 14. Sect. 3.2.2, p. 3-23 (Radiation Protection Program)

- a. Is the "AGM Nuclear/Plant Closure Manager" one person filling two positions? Please explain.
- b. Provide a detailed description of plant survey procedures for free release of equipment, parts, materials and scrap, including equipment used, detection limits, release criteria, et cetera.

# 15. Sect. 3.3.1, p. 3-27 (Spent Fuel Disposition)

- a. Provide a statement as to the District's plans in the event dual purpose casks can not be made available.
- b. Indicate the decommissioning cost implications of not having certified dual purpose casks, and how the District would modify its decommissioning fund contribution schedule.

# 16. Sect. 3.3.2, p. 3-29 (Radioactive Waste Processing)

- a. Indicate what ventilation systems will be maintained in each stage, and what filters will be used. Note that Table 2-1 appears to indicate all HVAC systems will remain functional until DECON.
- b. For each stage of decommissioning (except DECON), provide an estimate of gaseous source terms and releases, including spent fuel pool tritium.
- c. For each decommissioning stage (except DECON), indicate what equipment will be used to process liquid waste.

d. For each stage (except DECON), list, quantify, and discuss all significant liquid waste sources, including volumes and concentration levels, and resulting site effluents. Provide a comparison to releases from past operations in terms of curies per year by radionuclide.

#### 17. Sect. 4.1.2, p. 4-2 (Soil)

Draft NUREG/CR-5512 is in the process of being corrected and finalized. The final version should be used when it becomes available.

#### 18. Sect. 5.2, p. 5-7 (Decommissioning Financial Plan)

The scheduled initiation of DECON in 2008 is inconsistent with the license expiration date of October 11, 2008. Discuss the District's plans to reconcile these dates.

## 19. App. B. p. 22, 24, 27

- a. Justify not including secondary systems in the cost estimate. The cost of removal and disposal or decontamination should be included unless the District shows that this material meets free release standards.
- b. Justify not including the cost of electrical energy in the cost estimate.
- c. Justify assumption No. 16, regarding LSA material.
- d. Provide the detailed calculation sheets supporting the line item entries in Table 4.2, including the detailed basis for the unit cost factor calculations.

Enclosure 2

Additional Information Needed, RSNGS Environmental Report (ER)

#### General Comments:

- Revise the ER to include sufficient information to allow NRC to include in the Environmental Assessment (EA), as required by 10 CFR 51.30(a)(1), "A brief discussion of...the environmental impacts of the proposed action and alternatives as appropriate."
- 2. Address all actual or potential environmental impacts, as described in 10 CFR 51.45. Sufficient information is needed to allow an independent review and analysis by NRC, with definitive conclusions. In general, the level of detail supplied should be in proportion to the significance of the associated impacts.
- 3. In responding to NRC comments Nos. 1 and 2 above, be aware that, as provided by § 51.23(b) and § 51.30(b), the NRC's EA need not discuss impacts deriving from the storage of spent fuel. Therefore, the ER need not include information concerning the environmental impacts of spent fuel storage.
- Revise the ER in the appropriate locations to include, for each stage of decoumissioning, information on the following (see § 51.45(b)):
  - Waste generation, including sources, volumes, classification and numbers of shipments
  - Radiological effluent controls and effluents, characterized by rate, concentration, and duration, for air and liquid releases
  - o Radiological impacts to the public and workers

- --- Maximum offsite and unrestricted area individual exposures, air, water, and food pathways
- --- Cumulative population exposures, air, water, and food pathways
- --- Individual and cumulative worker exposures
- --- Impacts of waste transport, public and workers
- --- Impacts of potential accidents
- Air quality (nonradiological impacts from dust, asbestos, equipment exhaust)
- o Socioeconomic impacts
  - --- Impacts of temporary work force
  - --- Impacts on cooperating local agencies and services
- o Other impacts (noise, biota, etc.)
- o Impacts on radioactive waste disposal site operations
- Reasonable alternatives to the proposed action, and their associated environmental impacts, need to be evaluated and discussed in the ER for comparison (see § 51.45(b)(3)). The following alternatives merit consideration:
  - o No action
  - o Longer SAFSTOR period
  - o Fuel transfer to an offsite location, with full cleanup and license termination promptly

o Keeping spent fuel in the spent fuel pool (no ISFSI)

Differences among the alternatives should be quantified, in so far as practicable, in terms of dollar costs, person-rem exposure to workers, waste volumes, and waste transportation impacts.

- Revise the ER to be consistent with changes and new information being incorporated in the DP due to requests for information on the DP.
- Where calculational results are provided, the calculational basis should be provided so as to allow independent NRC staff analysis.

#### Specific Comments:

#### 1. Section 2.1, p. 2-1 (Nuclear Operating History)

This section should contain information on past radiological effluents from the facility, to allow for comparison with effluents projected during the various stages of decommissioning. Provide a tabulation showing releases by year, by radionuclide, for gaseous and liquid effluents through 1991.

#### 2. Section 2.2, p. 2-5 (Radionuclide Inventory)

- a. Please identify the radionuclides and concentrations yielding the doses given on the top of page 2-5. Provide the dose yielded by each radionuclide individually.
- b. If the dose from "Downstream Creek Sediment" is based on maximum concentrations found at that location, please provide the dose (by radionuclide) based on average sediment concentrations as given on page 2-6.
- c. Explain how the "CA Environment" dose could be larger than the other doses for onsite locations.

d. Provide current information (as available) on offsite contamination at other locations, and in other environmental media.

## Section 3.2, p. 3-2 (SAFSTOR Activities and Tasks)

- a. Kevise this section to include a tabulation, with appropriate discussion and analysis, of the specific activities and tasks to be performed at each stage of decommissioning. In particular, those activities leading to significant quantities of waste, or personnel exposure, or radioactive effluents must be addressed. Specific steps in "preparation for SAFSTOR" (e.g., draining of the reactor coolant system) and "preparation for Hardened-SAFSTOR" (e.g., draining and decontaminating the spent fuel pool) must be detailed sufficiently to assess environmental impacts.
- b. Discuss in this section the major nonradiological activities and tasks for each stage (e.g., removal of asbestos panels from the cocling towers). Quantify the sources, types and volumes of all significant sources of nonradioactive waste for each stage.
- c. Indicate, to the extent feasible, what specific decontamination work will be done and at what stage. Indicate if work will be done in other than the two "preparation" stages and DECON.
- d. Provide a summary of what systems will be maintained to assist with leter DECON efforts.
- e. Indicate the frequency, nature and resulting personnel exposure of routine inspections of abandoned facilities during both Custodial and Hardened-SAFSTOR.

#### Section 3.3, p. 3-6 (Staffing and Exposure Summaries)

a. Reconcile the figures in this Section with those in the TLG cost study.

- b. Provide a breakdown of the data to indicate at which stage each task will be performed, and the aggregate personnel exposure for each stage.
- c. If it is a significant fraction, provide the estimated personnel exposure from transfer of the spent fuel to the ISFSI so that it may be segregated from other exposure figures.

#### 5. Section 5.2.1, p. 5-2 (Occupational Dose)

- a. Provide a comparison and discussion of the NUREG/CR-0130 and TLG cost study personnel exposure estimates for each stage of decommissioning.
- b. Reconcile che 135 person-rem figure with the estimates in the TLG cost study.
- c. Provide a breakdown of the personnel exposure total by decommissioning stage, and provide activity-specific totals for key efforts (e.g., reactor vessel segmentation).
- d. For comparison, provide historical data on annual cumulative personnel exposure for RSNGS during operations.

# Section 5.2.2, p. 5-2 (Offsite Dose)

- a. As requested in General Comments above, please provide estimates of radioactive releases and offsite impacts for each decommissioning stage.
- b. Provide estimates of offsite doses from existing RSNGS-generated offsite contamination, including nearby creeks, pasture areas, and other appropriate location. Results should be provided by exposure pathway and radionuclide.

c. Provide, if possible, an estimate (by decommissioning stage) of waste transport exposure specific to this case, the quantities of waste to be generated, and the number of shipments to be made. A breakdown by decommissioning stage would be most useful.

# 7. Section 5.5, p. 5-11 (Natural Resources)

- a. Identify the minimum discharge canal flow that the District is obligated to maintain, and for how long.
- b. Identify the land area size (acres) that will be maintained unavailable for use while RSNGS is in SAFSTOR.
- c. Estimate the radioactive waste disposal site land area which the RSNGS low-level waste will permanently occupy.

## 8. Chapter 6, p. 6-1 (Alternatives to Proposed Action)

See General Comment No. 5. Please provide a quantitative, as well as qualitative comparison of reasonable alternatives.

# 9. Chapter 7, p. 7-1 (Status of Compliance)

Provide the information specified in 10 CFR 51.45(d). Include any permits for mixed or hazardous waste.

# 10. Chapter 8, p. 8-1 (Summary and Conclusions)

Please provide, as a basis for the conclusions drawn, an "Analysis" as specified in 10 CFR 51.45(c), which compares the environmental and economic costs and benefits of the proposed action and reasonable alternatives.