

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report No. 50-312/82-33

Docket No. 50-312 License No. DPR-54 Safeguards Group \_\_\_\_\_

Licensee: Sacramento Municipal Utility District  
P. O. Box 15830  
Sacramento California 95813

Facility Name: Rancho Seco Nuclear Generating Station

Inspection at: Clay Station, California

Inspection conducted: September 7-10, 1982

Inspectors: F. A. Wenslawski 9/29/82  
for H. S. North, Radiation Specialist Date Signed

Approved by: F. A. Wenslawski 9/29/82  
F. A. Wenslawski, Chief, Reactor Radiation Date Signed  
Safety Section

Approved by: H. E. Book 9/29/82  
H. E. Book, Chief, Radiological Safety Branch Date Signed

\_\_\_\_\_ Date Signed

Summary:

Inspection on September 7-10, 1982 (Report No. 50-312/82-33)

Areas Inspected: Organization and staffing, transportation activities including management controls, implementation, preparation of packages for shipment, delivery of completed packages to carriers, receipt of packages, reporting of incidents, indoctrination and training, audit program, examination of packages; a plant tour including waste handling areas, waste handling area ventilation system installation and the tritium evaporator; Health Physics Appraisal followup of the new computer based multichannel analyzer and records system; Noncompliance item followup, Information Notice followup and reportable occurrence followups. The inspection involved 31 hours onsite by one inspector.

Results: In the 15 areas inspected, no items of noncompliance or deviations were identified.

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## DETAILS

### 1. Persons Contacted

#### SMUD Personnel

- \*R. Rodriguez, Nuclear Operations Manager
- \*R. Columbo, Technical Assistant, Nuclear Operations
- \*R. Miller, Chemistry and Radiation Superintendent
  - J. Beentjes, Chemical Radiation Assistant (CRA)
  - J. Bowser, CRA (Training)
- \*N. Brock, Acting Nuclear Maintenance Supervisor
  - M. Bua, Senior Chemical Radiation Assistant (SCRA) (Training)
- \*S. Crunk, Associate Nuclear Engineer
  - P. Howard, CRA
- \*F. Kellie, Assistant Chemistry and Radiation Superintendent
  - B. Knox, Electrician
  - J. Newy, SCRA (Chemistry)
- \*T. Perry, QA Supervisor
- \*S. Rutter, QA Engineer
  - J. Teske, SCRA (Training)
- \*W. Wells, Administrative Supervisor
- \*D. Whitney, Engineering and QC Supervisor
- \*W. Wilson, SCRA (Radwaste)

#### Non SMUD Personnel

- C. Cox, Field Civil Engineer, Bechtel
- A. Fredlund, Startup Electrical Engineer, Bechtel
- S. Riddle, Senior Technician, Nuclear Support Services

\*Denotes attendance at the exit interview on September 10, 1982.

### 2. Organization and Staffing

Inspection Report No. 50-312/82-24 (June 16-17, 1982) included a review of this topic. Subsequent changes include title changes, (Supervisor to Superintendent) for the two senior chemistry-radiation department managers. An additional SCRA position has been created and filled from the CRA staff. The staff now includes 7 SCRA's, 18 CRA's and 9 Craft Helpers. Eleven Nuclear Support Services, Inc. technicians are on site, 7 assigned to radiation protection and 4 assigned to ALARA and Emergency Planning activities. Recruiting for the position of Nuclear Chemist is continuing. Two openings in the CRA staff remain. One will be filled by transfer from within the SMUD organization and recruiting for the last opening is continuing.

No items of noncompliance or deviations were identified.

3. Transportation Activities

a. Management Controls

A memorandum, dated October 31, 1980, titled Reassignment of Duties of Senior Chemical-Radiation Assistants, assigns responsibility for dry waste packaging, wet waste solidification, contaminated clothing laundry, cleaning of contaminated materials and equipment, final evaluation of all radioactive releases, control of all radioactive shipments, operation of solidification and tritium evaporator equipment and supervision of special decon parties to a single SCRA. An undated memorandum titled Transference of Radioactive Material and a February 9, 1982 memorandum reaffirming delegated authority to sign off shipments specifies that NRC and DOT regulations and Rancho Seco procedures will be followed.

The licensee's procedures governing the receipt, packaging, transfer/delivery to a carrier and transport of radioactive material, were reviewed.

AP-305-10 Radioactive Waste Disposal In-Plant, Rev. 6  
AP-305-11 Licensed Radioactive Material Handling, Rev. 3  
AP-305-12A Shipments of Radioactive Materials Offsite, Rev. 6  
AP-305-12B Bulk Radioactive Liquid Shipment (Deleted)  
AP-305-12C Radioactive Solidified Waste Shipment, Rev. 1  
AP-305 Radiation Control Manual, Section 3.8 Procurement, Use and Shipment of Radioactive Material and Section 3.9 Radioactive Waste Control.

Special Test Procedure (STP) 413 and Rev. 1 to STP 413, received and approved by the MSRC, following a "50.59 Review of Proposed Facility Change Log #286", provides for solidification of contaminated resins and miscellaneous waste concentrates using the Chem Nuclear Systems, Inc. (CNSI) mobile cement solidification system. The STP provides a Process Control Program (PCP) for tests of solidification prior to production solidification in accordance with a proprietary CNSI procedure. The licensee's procedures have not been revised to incorporate the requirement to notify the Governors of affected states of "Nuclear waste" shipments as specified in 10 CFR 71.5a and b. The SCRA responsible for radwaste had available a copy of Federal Register Notice Vol. 47 No. 109 dated June 7, 1982 which identified a list of the Governor's designees. The licensee has made no "Nuclear waste" shipment as defined in 10 CFR 71.4(r). This matter was discussed with licensee representatives during the exit interview.

Training and indoctrination in transportation activities since the last inspection (Inspection Report No. 50-312/81-13) consisted of attendance of an SCRA and CRA at DOE sponsored hazardous materials transportation seminar. In addition, the SCRA assigned to radwaste provided departmental training titled "Radioactive Waste Training", to SCRA and CRA personnel. The trainees were provided a handout which included copies of:

- DOT Hazardous Materials Transport,
- NEWC Full Spectrum Package Preparation Program,
- U.S. Ecology's State of Washington and State of Nevada licenses,
- A review of DOT Regulation for Transportation of Radioactive material, and
- ANI/MAELU Engineering Inspection Criteria for Nuclear Facility Insurance, Section 4.1 Radioactive waste Packaging and Shipment.

The Training Department has scheduled the attendance of a CRA (Training) at a, "Hazardous Materials/Waste Train-The-Trainer", seminar. Following completion of the training the Training Department will prepare a training program for Chem-Rad Department personnel.

In response to inspectors comments concerning audits (Inspection Report No. 50-312/81-13) the licensee revised MSRC checklist item No. 30 to include more performance related aspects in the Audit program (Inspection Report No. 50-312/82-10). The most recent audit No. 0-430, was conducted in November 1981.

No items of noncompliance or deviations were identified.

b. Implementation

The licensee purchases new, 17H, steel, 55 gallon drums and fabricates, strong tight, plywood boxes as previously described in paragraph 11.b. of Inspection Report No. 50-312/81-13. In addition, the licensee purchases from CNSI L-14 liner's for solidification of resin and liquid waste concentrates. Waste solidification liners and the CNSI solidification system were observed during a previous inspection (paragraph 6 Inspection Report No. 50-312/82-10). A dummy load of packaged 17H steel drums was observed to be properly label as LSA during the inspection.

The licensee has made no type B or fissile material shipments and has shipped no radioactive material in packages with outside demensions of less than four inches. The licensee has submitted letters of registration to use NRC certified packages:

<u>Certificate of Compliance No.</u>	<u>Cask Model</u>
9094	CNSI-14-195-H
9111	CN6-80A
6058	B-3
6144	B-2

The licensee is aware of and complies with the requirements of 49 CFR 173.392(a)-(d) in the full load, exclusive use shipment of LSA material.

No items of noncompliance or deviations were identified.

c. Preparation of Packages for Shipment

The inspector verified that the licensee had written procedures which required inspection of certified packages prior to use, verification of adequate shielding and proper closing. A procedure based check list was used to document adherence to procedures. The licensee made no shipments of non LSA liquids since the last inspection. The licensee makes, and retains with shipping records, photographs of all shipments which show load bracing, package and vehicle marking and labeling. Most shipments were full load, exclusive use, with the exception of a liquid sample picked up by the consignee and a package of decontaminated equipment shipped to a contractor and a single 17H, 55 gallon drum which was shipped to B & W. No problems were associated with nonexclusive use shipments with the exception of the drum which was found to have a small hole while in transit and was returned to Rancho Seco. This occurrence resulted in a special inspection (Inspection Report No. 50-312/82-09) and was also discussed in paragraph 6 of Inspection Report No. 50-312/82-10. No leakage or contamination resulted from this occurrence.

The licensee's procedures specify contamination and radiation limits for packages. Records examined verified that all packages were within the required limits. The licensee limits contamination to 200 dpm/100 cm<sup>2</sup>. The licensee's procedures do not address heat loads of shipping casks. The licensee has made and presently plans no spent fuel or other shipments where heat load would be a factor in shipping.

No items of noncompliance or deviations were identified.

d. Delivery of Completed Packages to Carriers

Since the inspection of April 6-9, 1981 (Inspection Report No. 50312/81-13) the licensee made 16 shipments in 1981 and 19 shipments in 1982. Shipping paper documentation was examined for the following shipments:

<u>Shipment No.</u>	<u>Shipment Date</u>	<u>Type of Shipment</u>
81-14	7/9/81	LSA, Exclusive Use, Drums & Boxes
81-16	11/17/81	LSA, Exclusive Use, Drums
82-1	6/10/82	LSA, Exclusive Use, Drums
82-2	7/9/82	LSA, Exclusive Use, CNSI Liners
82-5	7/14/82	LSA, Exclusive Use, CNSI Liners
82-7	7/15/82	LSA, Exclusive Use, CNSI Liners
82-10	7/16/82	LSA, Exclusive Use, CNSI Liners
82-17	7/28/82	LSA, Exclusive Use, Drums
82-19	8/5/82	LSA, Exclusive Use, CNSI Liner

Copies of instructions to driver's concerning maintenance of exclusive use as well as prohibitions against changes of tractor cab to load distance were also on file. The licensee's procedures required and records substantiated the notification of the consignee of shipments.

No items of noncompliance or deviations were identified.

e. Receipt of Packages

Procedures AP 305-16 Receipt of Radioactive Material, AP 305-11 Licensed Radioactive Material Handling and AP 305 Radiation Control Manual provide for prompt notification of receipt or pickup, monitoring, safe opening and appropriate notification of carriers and the NRC of discrepant shipments. Records of receipt of 8 shipments in 1981 and 3 shipments in 1982 were examined.

No items of noncompliance or deviations were identified.

f. Reporting of Incidents

The licensee provides instructions to driver's concerning reporting of incidents and accidents. There were no occasions which required such reporting. On one occasion a single 17H, 55 gallon drum of slightly contaminated material shipped to B & W was apparently damaged in shipment. The occurrence was reported to the licensee by the carrier and promptly reported to the NRC by the licensee. This occurrence was discussed in Inspection Report Nos. 50-312/82-09 and 50-312/82-10 paragraph 6. There were no other occasions where the effectiveness of packaging was substantially reduced.

No items of noncompliance or deviations were identified.

g. Indoctrination and Training and Audit Program

These aspects of the licensee's program were discussed in paragraph 3.a. of this report.

h. Examination of Packages

During the inspection a single 17H, 55 gallon drum of compacted waste (No. 82-890) was selected from a dummy load. The load was palletized and assembled in load configuration, covered with a waterproof tarp. The drum was new, in undamaged condition labeled as LSA on two sides and with the date of packaging (7/15/82), weight (245 lbs.), barrel No. (82-890), contact and three foot dose rates (2 and 1mr/hr), isotopes ( $Co^{58}$ ,  $Co^{60}$ ,  $Mn^{54}$ ) and as type "B" waste ("B" waste is a licensee designation of compacted dry waste). On opening, the drum was found to contain compacted dry waste. Using a Keithley ion chamber survey instrument (Model 36100, serial number 11108, NRC 009163, due for calibration August 9, 1983) confirmatory surveys verified the posted radiation levels of the dummy load. The dummy load was stored in a locked, key controlled, properly posted, fence enclosed, waste storage yard surrounded by shielding earth embankments.

No items of noncompliance or deviations were identified.

4. Plant Tour

During the inspection the location of the new radwaste compactor in the auxiliary building was observed. Receipt of the "Stock Equipment Company" compactor on site was noted in paragraph 12 of Inspection Report 50-312/81-28. Initial use was awaiting final installation and operating procedure preparation and approval. The inspector examined the installation of the new Radwaste Service Area Fan system which is in progress. The fan-filter housing has space for 20 pre and HEPA filters each and 60 charcoal trays. When complete the fan will discharge to the auxiliary building vent.

The inspector observed the pre-preop testing of the tritium evaporator heaters (approximately 1 megawatt) and observed the installed system. It was noted that the system is exposed to the weather and is located in a paved, walled area with approximately 3 inch curbs at the access openings. The only storm drain passed through the wall which will be the dividing barrier between the controlled and uncontrolled access area when the evaporator begins operation. There were no provisions for the retention, collection or disposal of leakage from the system. The potential for contamination resulting from leakage from pump and valve seals and difficulties in controlling a spread of contamination in stormy weather was called the licensee's attention during the exit interview. The licensee acknowledged an awareness of the potential for a problem.

No items of noncompliance or deviations were identified.

5. Health Physics Appraisal Followup

Health Physics Appraisal report (Inspection Report No. 50-312/80-32), Appendix A, Significant Findings in item 2. Exposure Controls (a) External, and (c) Surveillance addressed problems in the generation, retention, accessibility and retrievability of personnel monitoring and radiation protection records. The licensee has received delivery of a Canberra multichannel analyzer system with two supporting computer systems consisting of two each of the following hardware:

- PDP 11/44 computers,
- RLO2 10 mega byte Disc,
- RM02 67 mega byte Disc,
- T-Bar Switch - permitting transfer of all functions to either computer,
- Decwriter III - to be installed at the computers, and six Video terminals and keyboards.

The software for this system includes:

- Gamma analysis and QA including E Bar and dose equivalent iodine
- Radwaste - an inventory control and record system
- Radioactive source inventory
- Task scheduling
- Instrument calibration
- Dosimeter calibration
- Employee exposure history
- RWPs
- Work type personnel exposure
- System/Component related exposures
- RWP worker list
- Table of activities or work codes
- Table of craft or work codes
- Table listing systems and for each system components
- Correlation between individual MPC hours accumulated during a quarter and the estimated isotope specific MPC-hours calculated on the basis of whole body counts or other bioassays.

The programs will generate reports of personnel exposure, termination letters and liquid and gaseous effluent releases among others.

The six terminals will be located on the basis of need and changing plant activities between the hot lab, each access control point, the clerical staff, Radwaste SCRA's office, the ALARA group and the Chemistry SCRA's office.



When complete and operating this system should satisfy the concerns raised during the Health Physics Appraisal in the noted areas as well as providing significant support of the ALARA effort. (81-32-02, 81-32-03, 81-32-05)

No items of noncompliance or deviations were identified.

6. Noncompliance Item-Followup

In response to an item of noncompliance identified in Inspection Report No. 50-312/81-28, the licensee committed to procure and install flow measurement and recording devices on the reactor building and auxiliary building stacks during the next refueling outage. A licensee representative stated that the licensee planned to meet the original commitment.

No items of noncompliance or deviations were identified.

7. Followup on IE Information Notices

The inspector verified that the licensee had received, reviewed for applicability and taken or initiated appropriate action in response to the following IE Information Notices:

82-18, Assessment of Intakes of Radioactive Material by Workers (FW-06-16 Closed)

82-31, Overexposure of Diver During Work in Fuel Storage Pool.

(Closed)

No items of noncompliance or deviations were identified

8. Followup on Reportable Occurances

The licensee submitted Licensee Event Reports (LER) (82-13 and 82-16) in accordance with T. S. Appendix B, Section 5.6.2.c concerning occasions when the plant effluent exceeded the chlorine limits specified in T. S. Appendix B Section 2.2. These matters are considered closed (82-13-T0 and 82-16-T0).

The licensee informed the inspector at the time of the exit interview of an occurrence when the concentration of dissolved oxygen in the receiving waters was less than 5.0 mg/l. (T. S. Appendix B Section 2.5 A). The licensee stated that a written notice as required by T. S. Appendix B Section 5.6.2.c would be submitted. LER 82-25, dated September 17, 1982 was received on September 21, 1982. This matter is considered closed (82-25-T0).

No items of noncompliance or deviations were identified.

9. Exit Interview

The inspector met with the licensee representatives (denoted in paragraph 1) at the conclusion of the inspection. The scope and findings of the inspection were summarized. The licensee was informed that no items of noncompliance or deviations had been identified. Three matters of concern were identified, first the present effectiveness of the waste management and transportation activities appear to result principally from a single individual's knowledge and skill. Familiarization of another individual in this sensitive area would appear to merit consideration.

Second, the potential for contamination spread from the tritium evaporator after operation begins was identified. The licensee acknowledged an awareness of the potential problem.

Third, the licensee was informed that procedural revisions to provide for the notification of Governors as required by 10 CFR 71.5a and b should be accomplished. It was noted that the licensee has made no shipments requiring such notification.

The licensee was informed that the revised MSRC Audit checklist used for transportation activities appeared particularly effective, resulting in a thorough and well balanced audit effort.