

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report No. 50-312/92-05 ⁹⁴⁻⁰¹

License No. DPR-54

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

Facility Name: Rancho Seco Nuclear Generating Station (Rancho Seco)

Inspection at: Herald, California (Rancho Seco Site)

Inspection conducted: February 22-24, 1994, and March 1-2, 1994

Inspection by: M. Cillis 3/31/94
M. Cillis, Senior Radiation Specialist Date Signed

Phillip Qualls 3/31/94
Phillip Qualls, Reactor Inspector Date Signed

Approved by: JHR 3/31/94
James H. Reese, Chief Date Signed
Facilities Radiological Protection Branch

Summary:

Areas Inspected:

This was a routine, announced inspection of the licensee's fire protection and housekeeping programs; including, a review of the licensee's emergency preparedness program, followup item, and reviews of spent fuel pool activities, training and qualifications, surveillance program, solid radioactive waste management and transportation of radioactive materials, radiation exposure program, and plant tours of licensee's facilities. Inspection modules 64704, 54834B, 82301, 82302, 92701, 86700, 41701, 61726, 83750 and 86750 were addressed.

Results: Two non-cited violations involving the improper use of fire protection equipment (e.g., fire hoses) and a missed ODCM surveillance are discussed in Sections 2 and 6, respectively. The inspector concluded that these programs were capable of achieving their safety objectives. Strengths were noted in the licensee's activities associated with the management of radioactive wastes, transportation of radioactive materials, ALARA, and the implementation of the new 10 CFR Part 20.1001-20.2401 regulatory requirements.

DETAILS

1. Persons Contacted

J. Shetler, Deputy Assistant General Manager, Nuclear
S. Redeker, Manager, Plant Closure and Decommissioning
*T. Tucker, Operations Supervisor
*J. Delezenski, Nuclear Licensing Superintendent
*D. Gardiner, Radiation Protection/Chemistry Superintendent
*S. Nicolls, Radiological Health Supervisor
*W. Rogers, Supervising Rad Engineering Specialist
W. Wilson, Radiation Protection/Radioactive Waste Supervisor
G. Martin, Radiation Protection Supervisor
*D. Elliot, Quality Assurance Supervisor
R. Redding, Nuclear Instructor
*R. Mannheimer, Licensing Engineer
*J. Field, Technical Services Supervisor
T. Dundon, Training Supervisor
R. Macias, Shift Supervisor
M. Hayes, Control Room Operator
F. Thompson, Emergency Planning Specialist
J. Saum, Senior Engineer

*Denotes those individuals present at the exit interview conducted on March 2, 1994.

Additional discussions were held with other members of the licensee's staff.

2. Fire Protection - Housekeeping (MC 64704 and MC 54834B)

The inspector reviewed the fire protection training program and records, and verified that the personnel required to maintain fire brigade qualifications were trained and that the training was current. The licensee uses the Herald Volunteer Fire Department as the primary fire response force with two "incipient responders", trained in fire extinguisher use, on each shift, to provide immediate fire response.

The inspector toured the Auxiliary Building, Spent Fuel Building, Turbine Building, Tank Farm, and Diesel Fire Pump Building. The inspector noted that overall housekeeping was good. Plant emergency response and fire fighting equipment was in good condition. No significant buildup of combustible materials was noted. The inspector did note that plant personnel were using fire hoses from emergency fire brigade lockers for routine industrial use. The licensee's Fire Protection Plan lists NFPA 24 as one of the codes which will be implemented. NFPA 24 paragraph 5.7 states that the use of hose for purposes other than fire related services shall be prohibited. Technical Specification (TS) D6.8.1 states that the fire protection plan shall be implemented. The licensee stated that they had in each locker twice the hose required for fire response use. Prior to the completion of the inspection, the licensee segregated emergency use fire hose from that hose to be used for industrial use hose. Due to the amount of fire

hose available and the licensee's incipient fire brigade policy, the use of this hose appeared to have minor safety significance. It is however, a violation of TS D6.8.1. The violation is not being cited because the criteria specified in Section VII.B of the Enforcement Policy were satisfied (50-312/94-01-01 NCV). The inspector also discussed fire hose maintenance with members of the licensee's staff. Fire hoses were being hydrotested as required but were not being dried after each use. The inspector noted that NFPA 1980, which would require that hoses be thoroughly drained and dried after each use is not listed in the approved Fire Protection plan.

The inspector reviewed the licensee's implementing procedures and noted that the procedures contained controls for ignition sources, combustible materials, housekeeping, hazardous chemicals, and fire system impairments. The inspector reviewed the licensee's QA audits for the fire protection program. The audits appeared adequate to meet regulatory requirements.

One Non-Cited violation was identified.

3. Emergency Planning (MC 82301 and MC 82302)

The inspector reviewed the licensee's critique of the 1993 Emergency Planning exercise. Included in the critique package were copies of the exercise scenario, the exercise objectives, the licensee's evaluations and comments concerning their performance, and corrective actions that were identified. The inspector concluded that the exercise and exercise objectives met the requirements of the approved Emergency Plan.

The inspector reviewed the licensee's Emergency Plan Implementing Procedures (EPIPs) and concluded that they adequately implemented the plan. The inspector reviewed the licensee's QA audits for the emergency preparedness program. The audits appeared adequate to meet regulatory requirements.

The inspector reviewed the licensee's Emergency Response Organization (ERO) and found that positions required by the plan could be adequately staffed. The inspector reviewed the licensee's training records for the ERO and found that an adequate number of trained personnel were available for each position.

The inspector toured the Technical Support Center (TSC) and Control Room. Both facilities were being maintained adequately to implement the emergency plan. An Emergency locker in the TSC was inventoried by the inspector. The equipment was in calibration, adequate in amount, and in good condition. The TSC appeared to be ready for activation if required by the EPIPs. The inspector reviewed the testing of the notification systems and concluded that they were being maintained and noted that the systems were redundant and diverse.

4. Followup Item (MC 92701)

Followup Item 50-312/91-17-01 (Closed): This item concerning a failure of the call up system was reviewed during the inspection. The inspector concluded that the corrective actions taken by the licensee to resolve this item were satisfactory. Item 50-312/91-17-01 is closed.

5. Spent Fuel Activities and Operator Training (MC 86700 and 41701)

5.1 Training

The licensee's training program for certified fuel handlers was reviewed for compliance with the requirement delineated in the TS Sections D6.3 and D6.4. Additional spent fuel activities previously performed and those being planned for in the future was also examined. The examination included a review of the NRC approved certified fuel handler (CFH) training program, dated February 4, 1992.

A review of selected training lesson plans, training attendance records, training schedule, written examinations, on-the-job training records, self reading assignments, and discussions with several CFHs disclosed that the initial and continuing CFH training conducted in 1993 was consistent with the NRC's approved CFH training program. The inspector noted that the training was well documented and that considerable amount of time and effort was given towards ensuring that appropriate training was being provide to all staff members.

The inspector concluded that the licensee's performance in this area was consistent with the regulatory requirements and the NRC's approved training program for CFHs, and that their training program was capable of accomplishing its safety objectives. No violations or deviations were identified.

5.2 Spent Fuel Pool Activities

Discussions with the licensee's staff disclosed that no spent fuel pool activities were performed since the previous inspection. A tour of the Spent Fuel Building during the inspection disclosed that spent fuel pool activities appeared to be in conformance with the TS.

Preparations were in progress to inventory the pool contents and to arrange the fuel (e.g., installation of the control components into fuel assemblies) to determine the types and quantities of storage containers that will be required for the subsequent transfer of the assemblies to the Independent Spent Fuel Storage Installation (ISFSI). Construction of the ISFSI is expected to start between June of 1994 and the later part of 1994. Fuel transfer is expected to follow shortly after obtaining the approved environmental assessment from the NRC. The transfer of fuel to the ISFSI is expected to take approximately one year to complete.

The preparations of the spent fuel included equipment checkout, water

level verification, water chemistry verification, and certification of the overhead and bridge cranes.

No violations or deviations were identified.

6. Surveillance Observations (MC 61726)

The inspector reviewed records associated with surveillance requirements prescribed in the TS and the surveillance committed to in licensee's Radiological Environmental Monitoring Program (REMP), and the Offsite Dose Calculation Manual surveillance programs pursuant to the guidelines provided in Generic Letter 89-01, "Implementation of Programmatic Controls for Radiological Controls Section of the Technical Specifications and the Relocation of Procedural Details of RETS to the Off-site Dose Calculation Manual or Process Control Program," dated January 31, 1989.

Surveillance tests for the following areas were verified:

- TS Section D3/4.1 - Spent Fuel Pool Level
- TS Section D3/4.2 - Spent Fuel Pool Temperature
- TS Section D3/4.3 - Fuel Storage Building Load Handling Limits
- TS Section D3/4.4 - Spent Fuel Pool Area Radiation Monitor
- TS Section D3/4.5 - Spent Fuel Pool Water Chemistry
- TS Section D3/4.7 - Sealed Source Contamination
- REMP Section 4.0 - Land Use Section
- ODCM - Attachment 14 - Radioactive Liquid Effluent Monitoring
Surveillance Requirements
- ODCM - Attachment 17 - Radioactive Gaseous Effluent
Instrumentation Surveillance Requirements

ODCM Attachment 17 prescribes the surveillance requirements for: the reactor building stack monitor, auxiliary building stack monitor, auxiliary building grade level vent monitor, and the Interim On-site Storage Facility (IOS) vent monitor. Required surveillance to be performed by Attachment 17 are: Instrument Channel Checks - Daily, Instrument Channel Calibration - once every eighteen months, and Channel Tests - Quarterly for all monitors except the IOS monitor. The Channel Tests for the IOS monitor is on a Semi-annual (SA) schedule.

The inspector noted that all of TS and REMP surveillances reviewed during the inspection were performed in accordance with an approved Surveillance Procedure (SP). ODCM required surveillances were all required to be performed in accordance with a SP, except for the IOS monitor. Surveillance for the IOS monitor was scheduled and performed in accordance with the licensee's plant maintenance procedures. The licensee's staff informed the inspector that SP surveillances received a higher priority than tests performed under a plant maintenance procedure.

Plant maintenance procedure I.675 was used for performing the SA surveillance Channel Tests for the IOS vent monitor R-15106. The review

of completed surveillance procedures for IOS monitor R-15106 disclosed that a SA surveillance had not been performed during the period of December 15, 1992, through September 9, 1993. This exceeded the period allowed by the ODCM by approximately three months. All other surveillances had been accomplished at their required frequencies.

A review of licensee report, Potential Deviation from Quality (PDQ) No. 93-0087 dated December 22, 1993, identified that licensee procedure RASP-0501 required that surveillances must be documented by a SP. The PDQ also stated that licensee procedure RASP also required SP procedures to be on the master surveillance schedule maintained by the Technical Services. The report added that plant maintenance procedure I.675 was not listed on the master surveillance schedule. Dispositioning of the PDQ was due for completion on March 2, 1994. The individual assigned to disposition the PDQ had been re-assigned to perform another task and was not available to address the dispositioning of the PDQ.

The above observations were brought to the licensee's attention during the inspection. Prompt action was taken by the licensee to schedule the dispositioning of the PDQ which would allow for the preparation of a SP to perform future Channel Test surveillances of the IOS vent monitor. The licensee also took action to insure that the SA Channel Test would be accomplished on its next surveillance due date of March 9, 1994.

The inspector informed the licensee that failure to perform the SA surveillance test was an apparent violation. However, the violation is not being cited because the criteria specified in Section VII.B of the Enforcement Policy were satisfied (50-312/94-01-02 NCV).

7. Solid Radioactive Waste Management and Transportation of Radioactive Materials (MC 86750)

7.1 Audits and Quality Control Surveillance

The inspector noted that the licensee continued to maintain a quality control program that was consistent with 10 CFR Part 61. The inspector noted from a review of records that licensee audits/surveillance have not disclosed any significant findings in this subject area.

7.2 Changes

No changes had occurred since this functional area was previously inspected.

7.3 Records and Reports

No shipments of radioactive wastes were made since the previous inspection. The licensee's total inventory of radioactive waste at the time of this inspection was less than 2000 cubic feet. Radioactive material in storage appeared to be properly packaged and labeled.

The inspector noted that the licensee had completed eighteen shipments

of radioactive materials during 1993. No concerns were identified.

7.4 Procedures

Procedures used for radwaste processing, transportation, and receipt of radioactive materials were found to be current and consistent with 10 CFR Parts 20 and 71, and with Department of Transportation (DOT) regulations prescribed in 49 CFR Parts 100-177. No concerns were identified.

7.5 Training

The inspector reviewed the licensee's training program for radwaste handlers and found it to be consistent with Inspection and Enforcement Bulletin (IEB) 79-19, "Packaging of Low-Level Radioactive Waste for Transport and Burial." All training was found to be current.

7.6 Waste Class, Form, and Characterization

The licensee sampled their waste streams annually for establishing the proper waste form and classification as required by 10 CFR Parts 61.55 and 61.56. The inspector concluded that the licensee's waste form and classifications made in 1991 and 1992 were consistent with 10 CFR Part 61 requirements. No concerns were identified.

7.7 Receipt of Radioactive Material

The licensee's program for receipt of radioactive materials was examined and was found to be consistent with 10 CFR 20.205 for 1993 and with 10 CFR Part 20.1906 for shipments of radioactive materials received in 1994. No concerns were identified.

7.8 Solid waste Program

The licensee's solid radwaste program was examined. The program was found to be consistent with the information in the licensee's January-June 1992, Semiannual Radioactive Release Report which had been submitted in accordance with 10 CFR 50.36(a), 10 CFR 50.4, and the Rancho Seco Permanently Defueled Technical Specification D6.9.3. The examination revealed that the licensee had an aggressive radwaste minimization program. No concerns were identified.

The inspector concluded that the licensee's performance in this area continues to improve. The program appeared to be fully capable of accomplishing its safety objective. No violations or deviations were identified.

8. Occupational Radiation Exposure (MC 83750)

The inspector examined the licensee's occupational radiation exposure program for compliance with the requirements prescribed in 10 CFR Parts 19 and 20, License Conditions, and licensee procedures. The examination

included a review of audits and appraisals reports, internal and external exposure records, ALARA goals, radiation work permits, and applicable procedures, training (e.g., General Employee Training (GET) and Respiratory Protection), changes, surveys, and observations of work practices.

The inspector's examination focused on the licensee's efforts to implement the new 10 CFR Part 20 regulations (e.g., 10 CFR Part 20.1001-10.2401) that became effective January 1, 1994.

Licensee procedure RP-305, "Radiation Protection Plan," Revision 3, dated January 1, 1994, which was recently revised to incorporate the new 10 CFR Part 20 regulatory requirements, provides an outline of the licensee's radiation protection program and the licensee's commitment to maintain exposures as low as is reasonably achievable (ALARA) as prescribed in 10 CFR Part 20.1101. The procedure also established the lines of authority and responsibility for the radiation protection program.

The inspector also verified that posting and labeling were in compliance with 10 CFR parts 19.11 and 10 CFR Parts 20.1901-20.1905.

8.1 Audits and Appraisals

The following Rancho Seco audit/Surveillance reports were reviewed:

- Surveillance Report No. 93-S-005 - "Radiation Protection"

This surveillance included an in-depth review of the procedure changes that were prepared to implement the new 10 CFR Part 20 Standards for Protection Against Radiation and evaluated the degree of preparedness for complying with the new regulations when they became effective. The surveillance was conducted during the period of December 13-22, 1993. The surveillance was performed by a qualified individual who concluded that procedures and training necessary to implement the new regulations were in place, however, some areas of improvement were recommended to further strengthen the program.

- Audit Report No. 93-A-005 - "Radiological Environmental Monitoring Program (REMP)"

This audit assessed the adequacy of the REMP and the effectiveness of program implementation. The audit was conducted during the period of May 10, 1993, to June 24, 1993.

The audit report identified several minor deficiencies and included several recommendations for improvement items.

- Audit Report No. 93-A-007 - "Radiation Protection"

This audit assessed the licensee's radiation protection and ALARA

programs. The audit was conducted during the period of June 10, 1993, to August 19, 1993.

One minor deficiencies and one recommendation for improvement were identified.

- Audit Report No. 92-A-005 - "Radiological and Non Radiological Environmental Monitoring Program/Offsite Dose Calculation Manual (ODCM)"

This audit assessed the adequacy of the licensee's REMP and Non-REMPs and the ODCM. The audit was conducted during the period of April 20, 1992, through May 11, 1992.

No audit findings were identified.

The inspector confirmed that appropriate corrective actions had been taken for identified deficiencies.

8.2 Changes

The implementation of the new 10 CFR Part 20 regulations was the most significant change noted.

The licensee informed the inspector that they were in the process of replacing the back shift radiation protection technician (RPT) staff with operators who were trained as Radiation Protection Responders (RPR) to perform certain RPT functions at the onset of a possible radiological emergency. The RPT currently on shift will be reassigned to day shift. The RPTs will be assigned to a seven day work schedule and will continue to be fully responsible for performing all radiation protection program functions that are currently performed. The RPRs will not be authorized to perform any work activity that may require the services of a fully qualified RPT. The RPRs' sole responsibility will be to make initial assessment of a radiological event that may occur on shift and then notifying a fully qualified RPT. The licensee expected to implement the RPR program by April 1-15, 1994. The Manager, Plant Closure and Decommissioning informed the inspector that he would not allow an operator to be assigned as an RPR until he was fully satisfied that the individual had successfully completed the RPR training program and understood his/her responsibilities.

The inspector reviewed the RPR training program. The training program included the following elements:

- Two days of class room training. This training program includes basic health physics instructions, understanding of applicable procedures, and is concluded with a final written examination.
- Completion of On-the-job (OJT) training program. Each operator must demonstrate to a fully qualified RPT that he/she can complete each task as much as practical with the actual equipment.

- Upon completion of class room and OJT training, each individual must pass an oral examination which will be administered by radiation protection supervision. To ensure consistency in administering the oral examination, oral board members will be provided with a standard set of questions that were developed by the training group.
- Annual refresher training.

No concerns were identified.

8.3 Training and Qualifications of Personnel

The licensee's General Employee Training (GET), CRP&DT, and Respiratory Protection training programs were reviewed. Applicable training lesson plans and attendance records were reviewed and were determined to be consistent with all of the applicable regulations, regulatory guides, and industry standards. The training programs were revised to address the changes made to 10 CFR Part 20, as set forth in Federal Register 50 FR 23377, dated May 21, 1991.

A review of selected lesson plans, student handout material, training attendance records, written examinations, and discussions with plant workers during the inspection disclosed that continuing training was being conducted in accordance with the regulatory requirements prescribed in 10 CFR Part 19.12 and had included the recent changes prescribed in 10 CFR Parts 20.1001-20.2401. During facility tours and discussions with plant personnel, the inspector observed no indication of work being performed by inadequately trained personnel.

The examination disclosed that no changes in personnel qualifications had occurred since the previous inspection. No concerns were identified.

8.4 Access Control

Discussions held with the licensee's radiation protection staff disclosed that a new computerized radiation exposure and access control system called the Radiation Protection Data Management System (RPDMS) had been developed and put into service. The system is described in licensee procedure RP.312.I.16. The inspector had occasion to test the system during the inspection and found it be very "user friendly."

8.5 External Exposure Control

Occupational exposure records for 1993 were reviewed during the inspection. Workers exposures were very low and collectively were well below the annual ALARA goal of 5.04 man-rem that was established for 1993. The total occupational exposure report for 1993 was 3.025 man-rem. During facility tours, the inspector also observed that work practices were consistent with the licensee's ALARA program.

The inspector noted that the licensee had conducted a site characterization of possible doses to "members of the public" (10 CFR Part 20.1301). A review of licensee procedure RP 312.I.14, "Occupational Radiation Exposure Limits and Extensions," establishes the following annual occupational exposure limits for adults (10 CFR Part 20.1201):

- Total Effective Dose Equivalent (TEDE) - 1.0 Rem (With approval of employee, Radiological Health Supervisor or Radiation Protection Superintendent, and The Plant Review Committee Chairperson, this limit may be extended to a maximum of 4.0 Rem)
- Total Organ Dose Equivalent (TODE) - 30 Rem (With approval of employee, Radiological Health Supervisor or Radiation Protection Superintendent, and The Plant Review Committee Chairperson, this limit may be extended to a maximum of 40 Rem)
- Lens of the eye Dose Equivalent (LDE) - 12 Rem (Maximum allowed)
- Shallow Dose Equivalent (SDE) - 30 Rem (With approval of employee, Radiological Health Supervisor or Radiation Protection Superintendent, and The Plant Review Committee Chairperson, this limit may be extended to a maximum of 40 Rem)
- Pregnant worker or embryo/fetus - Not to exceed 0.500 Rem after the pregnancy is declared (This dose limit may be reduced, and the allowed dose per month may be reduced as prescribed in 10 CFR 20.1208).
- The TEDE exposure limit established for all visitors, including declared pregnant visitors is 0.050 Rem/Year.

The licensee does not have any immediate plans for implementing Planned Special Exposures at this time, however, provisions for establishing procedure to implement this option will be considered only if it becomes necessary.

The inspector was informed that the licensee was in the process of testing electronic dosimeters which will be put into use if the tests prove to be satisfactory. The access RPDMS discussed in Section 8.4 was designed to accept the types of electronic dosimeter that were being tested.

No concerns were identified.

8.6 Internal Exposure Control

The inspector verified that the licensee's respiratory protection program was consistent with 10 CFR Parts 20.1701-20.1704, Regulatory Guide 8.15, "Acceptable Programs for Respiratory Protection," and NUREG 0041, "Manual of Respiratory Protection Against Airborne Radioactive Materials." Personnel clothing contamination records, contamination

survey records, whole body counting records, and airborne survey records were reviewed.

The inspector concluded that the licensee had an aggressive contamination control program. The licensee has been effective in maintaining most work areas free of radioactive contamination, thereby reducing the risk of personnel contamination occurrences and the need for utilizing respiratory protective equipment and protective clothing.

8.7 Control of Radioactive Materials and Contamination, Surveys, and Monitoring

Radiological access control point work practices were observed during the inspection. In addition, the inspector conducted independent radiation measurements and tours of the licensee's facility.

Radiation surveys conducted by the licensee's staff were determined to comply with 10 CFR Parts 20.1501-20.1502. The inspector also verified that contamination surveys of radiologically controlled areas and non-radiologically controlled areas were routinely performed by the licensee's staff. The inspector concluded that the licensee's survey and monitoring program appeared to be effective in preventing the inadvertent release of radioactive materials to unrestricted area. No concerns were identified.

8.8 Maintaining Exposures ALARA

This subject area was reviewed and found to be in compliance with 10 CFR Part 20.1101 (See Section 8.5, above).

8.9 Procedures

The licensee revised approximately 36-48 existing radiation protection program procedures for the purpose of implementing the new 10 CFR Part 20 regulations. The inspector reviewed selected copies of the revised procedures and concluded that they appeared to adequately capture the new regulatory requirements. The inspector concluded that the procedures were "user friendly" and had been successfully implemented.

The inspector determined that the licensee had effectively implemented the revised 10 CFR Part 20 on January 1, 1994, and that the radiation protection program was capable of achieving its safety objectives. No violations or deviations were identified.

9. Exit Interview

The inspector met with the individuals denoted in Section 1 at the conclusion of the inspection on March 2, 1994. The scope and findings of the inspection were summarized. The inspector discussed the non-cited violations described in Sections 2 and 6. The licensee

acknowledged the findings that were brought to their attention. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspector during the inspection.