

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report No: 50-312/90-12

Docket No. 50-312

License No. DPR-54

Licensee: Sacramento Municipal Utility District (SMUD)  
14440 Twin Cities Road  
Herald, California 95638-9799

Facility Name: Rancho Seco Nuclear Generating Station

Inspection at: Herald, California (Pancho Seco Site)

Inspection conducted: July 7, 1990 through August 17, 1990.

Inspectors: C. J. Myers, Resident Inspector

Approved By:

*Howard S. Wong*  
H. Wong, Chief  
Reactor Projects Section II

9/12/90  
Date Signed

Summary:

Inspection between July 7 and August 17, 1990 (Report 50-312/90-12)

Areas Inspected: This routine inspection by the Resident Inspector involved the areas of operational safety verification, health physics and security observations, safety system walkdown, maintenance, surveillance and testing and design modifications. During this inspection, Inspection Procedures 71707, 61726, 62703, 37700 and 30703 were used.

Results:

General Conclusions:

A significant strength was observed in the licensee's engineering review in support of their use of the emergency diesel generators as peaking units during system lay-up.

A weakness in the control of the installation of the cathodic protection modification was observed.

Summary of Violations or Deviations:

No violations or deviations were noted.

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## DETAILS

### 1. Persons Contacted

#### Licensee Personnel

- D. Keuter, Assistant General Manager (AGM), Nuclear
- \*J. Shetler, Deputy AGM and Nuclear Plant Manager
- \*P. Bender, Manager, Quality and Assurance
- \*C. Linkhart, Manager, Nuclear Support Services
- \*D. Brock, Manager, Nuclear Maintenance
- \*P. Turner, Manager, Nuclear Technical Services
- \*S. Redeker, Manager, Nuclear Operations
- \*J. Delezenski, Supervisor, Nuclear Licensing
- L. Houghtby, Manager, Nuclear Security
- \*M. Bua, Manager, Nuclear Radiation Protection

Other licensee employees contacted included technicians, operators, mechanics, security, and office personnel.

\*Attended the Exit Meeting on August 20, 1990.

### 2. Operational Status of Palo Verde

During this inspection period, the plant remained shutdown with the reactor defueled and fuel assemblies stored in the spent fuel pool. The reactor coolant system has been placed in a long-term full wet lay-up condition. The main turbine, condenser and feedwater systems have also been placed in a long-term dry lay-up condition with dehumidifiers installed. Implementation of planned system lay-up activities is considered by the licensee to be 80% complete including the majority of hardware modifications.

On August 6, the licensee operated three of the emergency diesel generators as peaking units for 8 1/2 hrs. The need for use of the diesel generators was caused by the loss of a major intertie supplying purchased power to the grid due to forest fires in the Sierra Nevada Mountains. No significant problems were experienced during diesel generator operation.

Engineering has completed testing and evaluation of the continued leakage from the spent fuel pool and concluded that the small quantity of leakage is acceptable. No further investigation to pinpoint and repair the defect in the liner of the spent fuel pool is planned. Engineering considers the leakage to be completely contained and adequately monitored within the leak chase system and concludes that the condition is an acceptable long-term condition. Repair activities to date have been successful in reducing the leakage from approximately 6 gallons per day (gpd) to 0.2 gpd.

Engineering continued to develop post-POL, lay-up plans intended to maintain systems in a long-term preservation and protective mode as part of their extended resource recovery activity.

At the end of the inspection period, the site implemented a four-day work week with generally only management and Operations personnel available on Fridays.

### 3. Operational Safety Verification (71707)

The inspector reviewed control room operations which included access control, staffing, observation of system alignments, procedural adherence, and log keeping. Discussions with the shift supervisors and operators indicated an understanding by these personnel of the reasons for annunciator indications, abnormal plant conditions and maintenance work in progress. The inspector also verified, by observation of valve and switch position indications, that systems were properly aligned as required by technical specifications for the plant conditions.

Tours of the auxiliary, reactor, and turbine buildings, including exterior areas, were made to assess equipment conditions and plant conditions. Also, tours were made to assess the effectiveness of radiological controls and adherence to regulatory requirements. The inspector also observed plant housekeeping and cleanliness, looked for potential fire and safety hazards, and observed security and safeguards practices.

During work activities, it appeared that the health physics managers were conducting plant tours and monitoring work in progress. They appeared aware of significant work which occurred during this period. The inspector's Radiation Work Permit (RWP) review revealed that the RWP did include: job description, radiation levels, contamination, airborne radioactivity (if expected), respiratory equipment, protective clothing, dosimetry, special equipment, RWP expiration, health physics (HP) coverage, and signatures. The RWP radiation and contamination surveys were kept current. Employees understood the RWP requirements.

The inspector observed that personnel in the controlled areas were wearing the proper dosimetry and personnel exiting the controlled areas were using the monitors properly. Labeling of containers appeared appropriate.

The inspector walked down portions of the protected and vital area boundaries to ensure that they were intact and that security personnel were properly posted where known deficiencies existed. The inspector also observed protected area access control, personnel screening, badge issuing and maintenance on access control equipment. Access control was observed. Personnel entering with packages were properly searched and access control was in accordance with licensee procedures. The inspector observed no obstructions in the isolation zone which could conceal a person or interfere with the detection/assessment system. Protected area illumination appeared adequate.

Radwaste processing continued during the inspection period. The total onsite radwaste volume has decreased from 20,000 cubic feet when operating to 10,000 cubic feet. The current liquid radwaste in tanks onsite totals 26,500 gallons, down from 43,400 gallons at the end of 1989. The frequency of shipments varies depending on the material shipped, but typically occurs when 220 barrels are accumulated. Only one shipment has occurred this year. As part of the licensee's radwaste volume reduction program, some uncompacted bags of very low-level trash are currently being stored in 20 steel boxes in the interim onsite storage building (IOS) pending release as uncontaminated waste after being surveyed. Priority RP support activities consisted of spent resin dewatering and packaging into high integrity containers and storage trailer inventory surveys. Currently 25 trailer-sized containers are used to store contaminated materials (e.g., scaffolds, ladders, refueling equipment, test equipment) prior to decontamination/salvage operations, or disposal as radwaste. Inventory and sorting of the contaminated material is complete. SMUD recently sent proposals to radwaste volume reduction contractor for bids on the contaminated tools and scaffold.

A new blender/dryer system for dewatering liquid radwaste concentrates is currently under in-place evaluation and procedure writing. Upon acceptance, processing of liquid radwaste will begin.

No violations or deviations were identified.

#### 4. Monthly Surveillance Observation (61726)

Technical Specification (TS) required surveillance tests were observed and reviewed to ascertain that they were conducted in accordance with Technical Specification requirements.

The following surveillance activities were observed:

- ° SP.006 Diesel Fire Pump Test, P.996
- ° STP.1319 Combined Three Diesel Generator Operation Test

The following items were considered during this review: testing was in accordance with adequate procedures; test instrumentation was calibrated; limiting conditions for operation were met; removal and restoration of the affected components were accomplished; test results conformed with TS and procedure requirements and were reviewed by personnel other than the individual directing the test; the reactor operator, technician or engineer performing the test recorded the data and the data was in agreement with observations made by the inspector, and that any deficiencies identified during the testing were properly reviewed and resolved by appropriate management personnel.

The inspector reviewed STP.1319, Combined Three Diesel Generator Operation, and observed portions of the test conducted to verify the adequacy of the licensee's intended use of the emergency diesel generators (EDG) as peaking units. While similar to previous monthly EDG testing, the special test was intended to verify the stability of parallel EDG operation aligned through a common startup transformer. This unique system alignment had not been previously utilized during EDG testing.

No significant operational problems were observed during the conduct of the test. Switching between fuel oil and lube oil strainers was required during the test as part of the expected operation. No problems in sequential loading of the EDGs or operational stability were encountered. Due to the proximity of an outside fire detector to the "B" Bruce diesel generator exhaust stack, along with high ambient temperature, an inadvertent fire protection sprinkler activation occurred near the end of the time the EDGs were operating, but did not affect the test. Subsequently, the licensee relocated several of the fire detectors to preclude repetition of the problem.

The inspector found the licensee actions to be appropriate to insure that use of the emergency diesel generators as peaking units did not degrade the system lay-up condition.

No violations or deviations were identified.

5. Monthly Maintenance Observation (62703)

Maintenance Activities

Maintenance activities for the systems and components listed below were observed and reviewed to ascertain that they were conducted in accordance with approved procedures, regulatory guides, industry codes or standards, and the Technical Specifications.

- ° Troubleshooting of the "B" Bruce output breaker seal-in circuit
- ° Lay-up modification of EDGs for use as peaking units

The following items were considered during this review: The limiting conditions for operation were met while components or systems were removed from service; approvals were obtained prior to initiating the work; activities were accomplished using approved procedures and were inspected as applicable; functional testing or calibration was performed prior to returning components or systems to service; activities were accomplished by qualified personnel; radiological controls were implemented; and fire prevention controls were implemented.

No violations or deviations were identified.

6. Cathodic Protection Well Drilling (37700)

As part of the licensee's activities in conformance with EPA requirements for control of underground storage tanks, the licensee had initiated improvements in the cathodic protection system originally installed in

the plant. These activities included the drilling of a test hole on July 10, 1990 and installation of a new anode to survey the required coverage area prior to locating four additional cathodes. The onsite location of the test hole was reviewed by cognizant plant personnel. The 288 ft. test well was drilled and the anode installed by the contractor conducting the application survey. When the in-progress work activity was observed by the licensee maintenance manager, he questioned the adequacy of the work control established over the contractor activity and stopped any further work. A potential deviation from quality (PDQ) was initiated to review the apparent lack of configuration control. As a result of the PDQ review, the licensee determined that the modification activity had not been appropriately controlled within the DCP process and that adequate controls over the plant configuration were not being maintained. Immediate corrective actions included soil sampling of the test hole which verified that no radioactive contamination was present. Furthermore, the test hole was capped and no further digging or modification work performed until resolution of the PDQ.

The inspector reviewed the circumstances of the event and found the licensee actions to be appropriate. The inspector found that the test work activity had originally been designated as a repair activity for the existing anode installation. The inspector discussed the inappropriate use of a work request to control the testing and installation of a change in the plant configuration with licensee management. The licensee initiated a root cause review of the apparent programmatic problem to be included in resolution of the PDQ.

Review of the licensee actions resulting from the PDQ will be addressed in a subsequent inspection report. The inspector found the licensee's initial identification of the problem to be both timely and thorough.

No violations or deviations were identified.

#### 7. Use of Emergency Diesel Generators as Peaking Units (37700)

The inspector reviewed the licensee's lay-up plans for use of three of the four emergency diesel generators as peaking units to the grid during periods of high load demand. The inspector found that the licensee had responded to requests from NRR for additional information regarding the planned maintenance of the diesel generators to insure that operation as peaking units did not degrade their capability to be restored to nuclear service.

The inspector noted that the licensee plans included parallel operation of the "B" TDI and "B" Bruce diesel generators through the same startup transformer. The inspector questioned the need for specific testing since such an electrical alignment had never been performed previously. The licensee acknowledged the inspector's concern and reviewed the adequacy of their preparations for use of the EDGs as peaking units. As a result of their review, the licensee developed and conducted a special test procedure (STP.1319) to insure the stability of operation of the parallel diesel generators and to demonstrate adequacy of their electrical alignment.

The inspector found that the licensee actions appeared to be adequate to preclude degradation of the diesel generators while used as peaking units.

No violations or deviations were identified.

8. Exit Meeting (30703)

The inspector met with licensee representatives (noted in paragraph 1) at various times during the report period and formally on August 20, 1990. The scope and findings of the inspection activities described in this report were summarized at the meeting. Licensee representatives acknowledged the inspector's findings at that time.