

U. S. NUCLEAR REGULATORY COMMISSION
REGION V

Report No. 50-312/89-15

Docket No. 50-312

License No. DPR-54

Licensee: Rancho Seco Nuclear Generating Station
Sacramento Municipal Utility District
14440 Twin Cities Road
Herald, California 95638-9799


Facility Name: Rancho Seco Unit 1

Inspection at: Herald, California (Rancho Seco Site)

Inspection conducted: September 9, 1989 through October 20, 1989.

Inspectors: A. J. D'Angelo, Senior Resident Inspector
C. J. Myers, Resident Inspector
P. M. Qualls, Resident Inspector
G. Good, Regional Inspector

Approved By:


S. A. Richards, Chief
Reactor Projects Section II

12-6-89
Date Signed

Summary:

Inspection between September 9 and October 20, 1989 (Report 50-312/89-15)

Areas Inspected: This routine inspection by the Resident Inspectors and in part by a regional inspector, involved the areas of operational safety verification, health physics and security observations, engineered safety features system walkdown, maintenance, surveillance and testing, defueling preparations and quality assurance. During this inspection, Inspection Procedures 30702, 71707, 71710, 61726, 62703, 60705, 82301 and 30703 were used.

Results:

General Conclusions:

A strength was observed in the performance and control of Loss of Offsite Power Testing.

Summary of Violations or Deviations:

Two violations were noted in paragraph 7.

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DETAILS

1. Persons Contacted

- *D. Keuter, Assistant General Manager (AGM), Nuclear
- J. Shetler, Deputy AGM
- B. Gibson, Manager, Support Services
- *P. Bender, Manager, Quality and Safety
- *P. Lydon, Manager, Nuclear Plant
- D. Brock, Manager, Nuclear Maintenance
- *S. Crunk, Manager, Nuclear Licensing
- R. Baim, Manager, Nuclear Cost Control and Plant Services
- M. Bua, Nuclear Radiation Protection
- J. Clark, Nuclear Chemistry
- *W. Peabody, Manager, Technical Services
- L. Houghtby, Manager, Nuclear Security
- J. Delezenski, Supervisor, Regulatory Coordination, Licensing
- Q. Coleman, Quality Assurance

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

*Attended the Exit Meeting on October 20, 1989.

2. Operational Status of Rancho Seco (30702)

The plant started this inspection period in the Cold Shutdown mode of operation and continued in this condition while making preparations for defueling the reactor. On October 14, 1989, the licensee detensioned the reactor vessel head and entered the refueling shutdown mode of operation. A management meeting was held concerning Emergency Preparedness on September 15, 1989.

3. Operational Safety Verification (71707)

The inspectors 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 inspectors also verified, by observation of valve and switch position indications, that emergency systems were properly aligned as required by technical specifications for plant conditions.

Tours of the auxiliary, reactor, and turbine buildings, including exterior areas, were made to assess equipment conditions and plant conditions. Also, the tours were made to assess the effectiveness of radiological controls and adherence to regulatory requirements. The inspectors also observed plant housekeeping and cleanliness, looked for potential fire and safety hazards, and observed security and safeguards practices. Boric acid crystals were observed to have built up at several locations. The inspectors discussed with licensee management the need to be alert for this condition due to the possibility of boric acid corrosion.

Plant staffing was inspected on a weekly basis to ensure that licensee staffing levels were maintained at a level necessary for safe plant operation in their current operating condition. Licensee management is following the staffing level at Rancho Seco via a tracking report. The licensee has projected future staffing reductions based on the completion of major milestones, such as defueling of the reactor. The inspectors frequently discussed staffing, as it related to work load, with supervisors and managers. Particular attention was given to the number of licensed operators remaining. For the present plant condition, only two licensed operators are required to be on watch. At the completion of the report period, the licensee had over 30 licensed operators on staff, with another 12 license candidates waiting to receive the results of an NRC licensing exam. Total plant staffing stood at approximately 620 permanent staff plus the full security guard force. The inspectors noted that the Quality/Safety Department staffing remained at about 50. The inspectors considered the present staffing level to be acceptable, considering the plant status.

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 inspectors 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 inspectors 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 inspectors 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 inspectors observed no obstructions in the isolation zone which could conceal a person or interfere with the detection/assessment system. Protected area illumination appeared adequate.

No violations or deviations were identified.

4. ESF System Walkdown (71710)

During the inspection period the inspectors walked down the Spent Fuel Pool Cooling system.

The inspectors concluded that:

- o All observed hangers and supports were properly made up and aligned.
 - o Housekeeping was adequate.
 - o Excessive boric acid buildup was observed on some valves (see paragraph 3).
 - o Major system components were properly labeled, lubricated and cooled. No excessive leakage was apparent.
 - o Instrumentation appeared to be properly installed.
 - o No out of calibration gauges were identified.
 - o Flow path components appeared to be in the correct position.
 - o Required support systems were available.
 - o Proper breaker and switch positions were verified.
- No violations or deviations were identified.

5. 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:

- o SP.319B Refueling Interval Diesel Generator (G-886B), SFAS and Loss of Offsite Power Loading Scheme Surveillance.
- o SP.319A Refueling Interval Diesel Generator (G-886A), SFAS and Loss of Offsite Power Loading Scheme Surveillance.

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. A pretest briefing was held prior to performance of the test. Management personnel observed test performance. Procedural problems that arose during test performance were resolved in accordance with plant Administrative Procedures.

No violations or deviations were identified.

6. Monthly Maintenance Observation (62703)

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.

- Refueling bridge maintenance.
- "A" Decay Heat Removal Pump maintenance.
- Maintenance on fuel transfer equipment.

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 (except as noted in Paragraph 7 of this report); 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.

The inspector also reviewed plant maintenance of systems presently in layup. Initially, some confusion appeared to exist within the licensee's organization regarding when and what type of layup maintenance activities would be performed, resulting in almost no maintenance actually being conducted on inactive systems. The inspector brought this concern to senior management, who reiterated their intent to maintain laid up systems pending NRC approval of a decommissioning plan. Management then clarified their intentions with the maintenance and operations departments. At the conclusion of the inspection period the licensee was performing maintenance in accordance with the draft system layup plans. The maintenance requirements will change to meet the final system layup plans as they are approved.

No violations or deviations were identified.

7. Refueling Equipment Modifications (37700, 62703, 60705)

- a. During a tour of the reactor building to review the progress of repairs to the Main Fuel Handling Bridge (MFHB), the inspector observed that the Auxiliary Fuel Handling Bridge (AFHB) was being dismantled and removed from the reactor building. The AFHB was described in the Updated Safety Analysis Report (USAR) as part of the facility refueling equipment. However, the licensee did not plan on utilizing the AFHB during the upcoming defueling operations. In discussions with the licensee engineering personnel, the inspector found that the AFHB was being permanently removed from the reactor building and dismantled for storage and/or salvage.

The inspector reviewed Design Change Package, DCP-R88-61, which controlled the refurbishment of the refueling equipment. The design basis report for the DCP stated that the AFHB was not included

within the scope of the refurbishment activity in preparation for refueling. The DCP further stated that after refueling, the AFHB was to either be abandoned in place or removed from the reactor building.

Since the dismantling of the AFHB did not appear to be directed by DCP-R88-61, the inspector reviewed the work controls in place for the activity and found the controlling document to be Work Request No. 01650150-0. The work request directed the removal and storage of the AFHB for unspecified long term repairs. The inspector was concerned that the open ended work request appeared to decommission and remove plant equipment described in the USAR and, as such, appeared to be either a temporary or permanent facility modification.

The inspector reviewed licensee procedure RSAP-0803, Work Request, which established the controls over maintenance activities. The inspector found no control over the duration of open work requests. Neither was there a requirement to restore the affected plant equipment to the approved design configuration following completion of the maintenance activity. The inspector found that this lack of procedural guidance allowed plant equipment described in the USAR to be left in a failed or maintenance mode for an extended period of time without a 50.59 safety evaluation.

The Work Request No. 01650150-0 had not been reviewed as a facility modification under 10CFR50.59.

Licensee configuration control procedures require facility modifications to be controlled in accordance with RSAP-0303, Facility Modifications, or RSAP-1606, Temporary Modifications, to insure that the proposed modification or design change is handled in accordance with the requirements of 10CFR50.59.

This failure to follow plant configuration control procedures is an apparent violation (89-15-01).

After the inspector expressed his concern for the lack of a 50.59 safety review for the AFHB removal to licensee management, the licensee initiated a Potential Deviation from Quality, PDQ-89-747, identifying that the removal of the AFHB was not properly authorized. As a result of the PDQ, the licensee initiated a Design Change Package, DCP R89-0085, to control the AFHB within existing configuration control procedures and perform the required 50.59 review.

- b. During a subsequent tour of the reactor building, the inspector observed that the partially dismantled AFHB was being stored on the deck grating on the 60 ft. level of the reactor building. The inspector reviewed open Work Request No. 01650150-0, which was directing the work, and found no instructions to lift and store the equipment to that location. In discussions with licensee maintenance personnel, the inspector was told that the AFHB was

being temporarily stored at the 60 ft. level to facilitate testing of the MFHB. However, the inspector was concerned that:

1. the AFHB wheel loading on the deck grating was not analyzed,
2. the AFHB was oriented to roll toward the fuel transfer canal and the wheels were not blocked,
3. the AFHB load on wheels was not reviewed for seismic restraint, and
4. the work request had not been changed to include the revised scope of the work activity.

Licensee procedure RSAP-0803, Work Request, requires that work be stopped and the work request be revised for changes in the scope of the work activity. This failure to follow procedures in an apparent violation (89-15-02).

The inspector expressed his concern regarding the control of work activities to licensee management who acknowledged the inspectors concerns and indicated that it would be addressed in their review of work controls under PDQ-89-0085.

Two violations were identified.

8. Health Physics Drill (82301)

On September 27, 1989, the licensee conducted a semi-annual health physics (HP) drill. Semi-annual HP drills are required by Section 8.3.5.a of the licensee's Emergency Plan (EP) and are to involve "response to, and analysis of, simulated, highly contaminated air and liquid samples, and direct measurements in the environment." Periodic drills are conducted for training purposes and are considered to be supervised instruction periods intended for developing, maintaining and testing skills in a particular operation. The HP drill was observed by two NRC inspectors; one Region based and one Resident Inspector. One of the inspectors observed the activities in the Operational Support Center (OSC) and accompanied two field teams. One of the field teams was dispatched onsite, but out-of-plant, and the other team was dispatched onsite, inplant. The other NRC inspector observed the activities in the Technical Support Center (TSC).

The licensee developed the HP drill to encompass the following major areas: (1) activation/augmentation of personnel and facilities; (2) onsite and offsite radiological monitoring capabilities; (3) dose assessment capability; (4) analysis of plant conditions, and; (5) formulation of protective action recommendations. The Control Room (CR), TSC, OSC and the Unified Dose Assessment Center (UDAC) were activated in response to the drill scenario. Objectives were developed for each of the Emergency Response Facilities (ERFs) participating in the drill.

The drill began at about 7:30 A.M. with a simulated bomb threat. The bomb threat prompted the declaration of an Unusual Event (UE). A

simulated explosion in the Waste Gas Decay Tank (WGDT) room occurred at 9:00 A.M. which led to a declaration of a Site Area Emergency (SAE), due to the magnitude of the simulated release. A second, simulated explosion occurred at 9:40 A.M. and caused a small break loss of coolant accident (LOCA). At 10:00 A.M., the simulated bomb search team found a device in a critical area that could not be moved. The discovery of this simulated bomb was intended to prompt discussions to identify which systems would be affected if the device exploded. The exercise was terminated at 11:30 A.M., after the simulated bomb search team concluded that there were no more devices.

Critiques were held at each of the ERFs immediately following the drill.

The following NRC observations were made during the drill:

- a. No liquid samples were taken as part of the drill.
- b. No chemistry technicians were designated to take part in the drill. As a result, Reactor Coolant Samples (RCS) and an effluent sample were simulated. One of the OSC's objectives called for the collection of particulate and charcoal filters from the effluent sampling system.
- c. Proper HP practices were not consistently utilized by the onsite, out-of-plant field team. Smear samples were placed in a bag, but the bag was handled using the contaminated, outer gloves. The bag was then stuffed into the emergency kit. Paper wipes used to clean the air sampler, prior to removing the filter and cartridge, were not bagged. One team member did not wear his hood in a proper manner. The team took a 12 minute air sample next to the reactor building. The advantage of taking such a long sample did not appear to be balanced against the information to be gained. Readings in the area appeared to be attributed to shine, rather than the plume.
- d. On both teams observed, radiation protection (RP) technicians did not always hold their survey meters in front of them and, in one instance, the instrument was not even switched to the "on" position before surveying a sample.
- e. It took 28 minutes to dispatch the onsite out-of-plant field team after the explosion in the WGDT room, even though the team was already suited-up. The team had been suited-up as a precautionary measure.
- f. Dose rates in the WGDT room did not permit the damage assessment team to enter. Although this was an appropriate decision, the team was not provided with an opportunity to take any samples other than direct measurements en route. After determining the dose rates in the WGDT room, the team returned to the OSC.
- g. The critique conducted in the OSC at the conclusion of the drill was thorough. The controllers did a good job identifying problems during the drill. The inspector did note that some of the players were not present for the critique.

- h. The inspector in the Control Room questioned the Shift Supervisor concerning the use of RSAP-0222, Rancho Seco Chemistry Control Commitment, with the iodine levels in the RCS during the drill initiation. The Shift Supervisor was unable to use RSAP-0222. The procedure has subsequently been revised by the licensee to make it useable by plant staff.

Based on the above observations, the inspectors concluded that the requirement to conduct an HP drill had been met; however, the scope of the drill, from an HP standpoint, was only considered to be marginally adequate. The scenario was not particularly taxing for the OSC staff or the field team members and the extent of simulation involving sample collection detracted from the training value of the drill. The activation of the other ERFs did provide added continuity and an opportunity for other emergency response personnel (non-HP) to practice their skills. The quality of the critique conducted in the OSC enhanced the training value of this drill.

After the drill, the above conclusions were discussed with plant management, including representatives from Environmental Monitoring and Emergency Preparedness (EM & EP). The validity of the conclusions was not challenged.

No violations or deviations were identified.

9. Licensee Commitment Tracking (71707)

Prior to the plant mode change made during this report period, the inspector reviewed the open licensee Coordinated Commitment Tracking System (CCTS) List items and the open Long Range Schedule List (LRSL) items, which were priority 2 for any outstanding commitments, which would affect the mode change from Cold Shutdown to Shutdown Refueling. No problems were identified. The licensee had in progress, at the conclusion of the inspection period, a review of open CCTS and LRSL items, and any other regulatory commitments to the NRC. This review was to determine which outstanding commitments needed to be completed for the long term plant defueled condition and which commitments the District would request the NRC to hold in abeyance. SMUD has committed to provide a written submittal to the NRC summarizing their intentions with regard to commitments by November 31, 1989.

No violations or deviations were identified.

10. Defueling Preparations (60705)

The inspectors observed maintenance on the fuel handling and fuel transfer equipment. The inspectors also monitored licensee activities to determine the source of the leakage in the Spent Fuel Pool Liner. Fuel handling and Refueling Procedures, M-4, Control Rod Drive Mechanism Uncoupling; M-1, Reactor Vessel Head Removal; M-2, Reactor Internals Removal; A.13, Fuel and Component Handling; and, B.8, Refueling Operations, were reviewed by the inspector.

No violations or deviations were identified.

11. Exit Meeting (30703)

The inspector met with licensee representatives (noted in paragraph 1) at various times during the report period and formally on October 20, 1989. 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.