U. S. ATOMIC ENERGY COMMISSION
DIRECTORATE OF REGULATORY OPERATIONS

REGION V

RO Inspection Report No. 50-312/74-03

Licensee: Sacramento Municipal Utility District
Sacramento, California

Docket No. 50-312

License No.(s) CPPR-56

Priority

Facility: Rancho Seco

Category B

Location: Clay Station, California

Type of Facility: PWR, B&W, 913 MWe (2772 MWt)

Type of Inspection: Routine, announced

Dates of Inspection: April 16-18, 30 and May 6, 7 and 9, 1974

Dates of Previous Inspection: March 4-5, 11-13, 18-20 and 22, 1974

Principal Inspector: A. D. Johnson, Reactor Inspector — 5/30/74 (Date)

Accompanying Inspectors: L. J. Garvin, Reactor Inspector — 5/30/74 (Date)

(Date)

Other Accompanying Personnel: None

Reviewed by: R. T. Dodds, Reactor Inspector — 5/30/74 (Date)

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SUMMARY OF FINDINGS

Enforcement Action

None.

Licensee Action on Previously Identified Enforcement Items

None required.

Unusual Occurrences

Safety Valves - The cause of the pressurizer safety valve maloperation (Daily Report - 4/30/74) was found to have been caused by dirt in the valve seat area. The valve was cleaned, re-assembled and satisfactorily tested. The reported excessive reduction in system pressure was determined to have been from continued operation of the pressurizer spray system.

Design Changes

None examined.

Other Significant Findings

A. Hot functional testing was expected to be complete by June 1, 1974. Fuel loading had been rescheduled to begin on June 24, 1974. (Paragraph 2)

B. The licensee program for conducting fuel loading, low power test and power ascension were found to be consistent with Regulatory requirements. (Paragraphs 6, 7 and 8 of Details)

C. The scope and content of the station operating procedures were found to be consistent with Regulatory requirements. (Paragraph 9 of Details)

D. To date, no major component or system descrepancies have been identified during the hot functional test program. However, the licensee was evaluating a greater than normal vibration level (18-20 mils) observed on one of the primary coolant pumps when it was operated alone. The pump was being re-aligned. (Paragraphs 4 and 5 of Details)

Management Interview

The inspectors met with the following personnel on May 9, 1974 to discuss the scope and findings of the inspection:

Sacramento Municipal Utility District

J. Mattimoe, Assistant General Manager, Chief Engineer
D. Raasch, Manager, Generation Engineering
R. Rodriguez, Manager, Nuclear Operations
R. Colombo, Technical Assistant
D. Whitney, Plant Nuclear Engineer
G. Coward, Plant Mechanical Engineer
L. Schwieger, QA Director
J. Jewett, QA Engineer
J. Sullivan, QA Engineer

Bechtel

W. Stinchfield, Project Manager
L. Brown, Project Engineer
I. Ibsen, QA Supervising Manager

The licensee made the following commitment:

Preoperational Test Data - The data of those tests that have been partially performed, but can not be completed until after fuel loading will be appropriately reviewed and approved prior to the start of fuel loading.

The inspector commented on a licensee question related to unescorted inspection activity as follows:

Right of Unescorted Inspection Activity by AEC Inspectors - The licensee's radiation protection program requires that individuals must be escorted while in the facility unless they have satisfactorily completed the pertinent SMUD training programs. The inspector commented that authorized AEC inspectors have the duty to be knowledgeable of radiation safety and the meaning of the associated posting, labeling and control devices. Therefore, the licensee's program requirement is not applicable to authorized AEC inspectors and unescorted inspection activity by the AEC inspectors would not be an AEC violation of the licensee's procedure requirements. The inspector further stated that RO:V would provide the licensee the names of AEC inspectors authorized to conduct Regulatory Operations' inspections at Rancho Seco.

REPORT DETAILS

1. Persons Contacted

R. Rodriguez, Manager, Nuclear Operations
P. Oubre', Assistant Plant Superintendent, Operations
J. McColligan, Assistant Superintendent, Technical Support
R. Colombo, Technical Assistant
D. Whitney, Plant Nuclear Engineer
G. Coward, Plant Mechanical Engineer
L. Schwieger, QA Director
J. Jewett, QA Engineer
J. Sullivan, QA Engineer
J. Dunn, Supervising Electrical Engineer
J. Haratyk, Electrical Engineer

Babcock & Wilcox Company

V. L. Pritchett, Test Engineer

Bechtel

L. Blackburn, QA Clerk

2. Facility Status

Construction activities were estimated to be 98% complete as of May 1, 1974. The hot functional test program was expected to be completed by the end of May 1974. Plant testing had been essentially suspended during the period of May 6 through 20, 1974 for examination of operations personnel to qualify for the necessary AEC operator licenses. Fuel loading was expected to occur toward the end of June or the first part of July 1974.

3. Licensee Action on Previous Commitments

a. QA Program for Operations (RO Report 50-312/74-02)

(1) A written procedure (AP-22) to control reporting of abnormal occurrences to the Plant Superintendent and Plant Review Committee had been incorporated into the Station Administrative Procedures.

(2) An administrative procedure had been issued to govern control of special operating instruction.

(3) Procedures were under development to provide for periodic review of operating procedures and for controlling appropriate inspection and/or testing after maintenance activity on a component or system.

b. Containment Building Tendons

New tendon strand wires have been ordered by VSL and should arrive on site and be installed as tendon H50A by the first week in June. After the installation of tendon H50A the crane will be removed from the top of the containment.

4. Preoperational Tests

The inspectors witnessed the following selected portions of tests performed during the hot functional test program. No deficiencies were observed.

a. Flow confirmation tests of the high pressure injection system with the primary coolant system at normal operating conditions (532°F and 2150 psig).

b. The test setup and data taking for the flow coast down test of the primary coolant system from the four pump operating mode at hot operating conditions.

c. The setup and obtaining of data of pipe displacement of the letdown purification system at normal operating conditions.

5. Preoperational Test Results

Data of 16 tests related to the following systems were examined and discussed with the licensee test coordinators.

Fuel handling
Core flooding
Decay heat removal
Control rod drive cooling
Nuclear service cooling
Feedwater turbines and pumps
Reactor coolant flow
Reactor coolant boron control
Control rod drives
Diesel generators
Makeup and purification
Turbine steam dump and bypass

The data packages were found to be in various stages of the review process prescribed by the licensee's QA program. The inspectors found that the test results were consistent with the acceptance criteria with the exception of the feedwater turbine and pump functional test (TP 275-1) and the nuclear service cooling water test (TP 245-5). These data packages indicated that the tests were completed but had not yet been reviewed by the Plant Review Committee.

In TP 275-1, the feedwater turbine pressure alarm failed to meet the acceptance criteria (1545 ± 10 psig vs. 1520 psig). In TP 245-5, the flow to D cooler (1438 gpm) failed to meet the 1500 gpm acceptance criterion.

In both cases the licensee indicated that the test data review process had not been completed. The inspector was assured that these areas of the tests would be either rerun or the acceptance criteria modified with appropriate approvals.

In addition, during the examination of the data packages, the inspectors observed that several of the test procedures required data to be taken after fuel loading. Therefore, the data would not necessarily be reviewed by the test working group or engineering until after initial fuel loading had been completed. The licensee stated that it had been their intent to assure that appropriate review of test results had been completed of all test data taken during the preoperational test phase prior to proceeding with the loading of fuel into the reactor. The licensee representative indicated appropriate instructions would be issued and implemented to assure that the preoperational test data receives the appropriate reviews prior to the initial fuel loading date.

6. Initial Fuel Loading Procedure

The inspector examined the licensee's initial fuel loading procedures (STP 200). The procedure had been reviewed and approved by the Plant Review Committee and the Plant Superintendent. The format and content of the procedure including the prerequisites, details, and limitations and actions were found to be consistent with the guidance provided in Regulatory Guide 1.68 and the requirements stipulated in Section 3.8 of the proposed technical specifications.

7. Precritical, Approach to Critical and Low Power Test Programs

The programs and procedures to control precritical tests, approach to critical and low power tests were examined and discussed with the licensee. The programs and procedures were found to be detailed and contained the suggested tests delineated in Regulatory Guide 1.68. The inspector observed, however, that the control procedure failed to include a check off list enumerating the precritical tests to provide assurance to Operations that all tests have been completed prior to initiating the approach to critical test program. The licensee representative stated that a list of the precritical tests would be included in the initial approach to critical procedure and would require sign off prior to commencing the approach to critical test to preclude any oversights.

8. Power Ascension Test Program

The test program was examined and discussed with the licensee. The program was found to be consistent with the guidance provided in Regulatory Guide 1.68 as modified by Section 13.A of the FSAR. The detailed procedures to be used to implement the program were in various stages of the development, review and approval process. The inspector observed from a completed procedure that the format scope and content appeared to be consistent with the guidance provided in AEC Regulatory Guide 1.33/ANS 18.7.

9. Plant Operating Procedures

The inspector examined and discussed with the licensee the reactor startup, power operation, shutdown, refueling and the following system procedures:

a. Reactor coolant system
b. Reactor coolant pumps
c. Core flooding system
d. Reactor coolant drain tank system
e. Reactor building spray system
f. Control rod cooling system
g. Control rod drive
h. Decay heat removal system
i. Reactor coolant chemical and hydrogen addition system
j. Letdown and purification makeup system
k. Spent fuel cooling system
l. Diesel generator system
m. 125 V DC system
n. P[illegible] air system
o. Main feed pump system
p. Safety features actuation system

The inspector observed that the format and content of the procedures were consistent with the guidance provided by AEC Safety guide 33/ANS 18.7. In addition, the inspector confirmed that approved procedures were available for the safety related systems including those for correcting abnormal, off normal or alarm conditions identified in the referenced guides. Also, the scope of the procedures for surveillance testing, inspections and calibrations were examined and found to be consistent with the proposed technical specifications.

10. Reactor Vessel

The records of the cleaning of the reactor vessel and the reactor internals were examined. These records included flushing reports and water chemistry sample reports. The records verified that the components met the required degree of cleanliness.

11. Installation of Electrical Equipment

The final installation and startup records for the emergency diesel generators were examined. No anomalies were noted in the installation records. However, two NCR's had been issued following the initial startup test because excess vibration (greater than 10 mills) had been noted. Replacement of bearings and diaphragm plates lowered the vibration to acceptable levels (less than 2 mills). The generators were then satisfactorily tested.

12. Primary Coolant and Other Class I Piping

a. Cleaning

The cleaning records for the primary coolant piping system and selected parts of the purification and decay heat removal systems were examined. These records verified that the piping met the cleaning requirements.

b. Hydro Testing

The hydrostatic testing records for all other Class 1 piping systems were examined. Approximately 1000 pages of testing records were involved in the review. No anomalies were noted.

13. Hydraulic Snubbers

The licensee had completed the investigation to determine the type of seals in the Bergen-Patterson snubbers used on safety related systems. The type of seals on thirty-four snubbers outside the containment could not be verified. These snubbers had not shown signs of leakage. The licensee plans to propose technical specification surveillance requirements to assure timely detection of seal deterioration. Should signs of leakage occur, the snubber will then be repaired with appropriate seal material.