

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report No. 50-312/85-21
Docket No. 50-312
License No. DPR-54
Licensee: Sacramento Municipal Utility District
P. O. Box 15830
Sacramento California 95813
Facility Name: Rancho Seco Unit 1
Inspection at: Herald, California (Rancho Seco Site)
Inspection conducted: July 8-26, 1985

Inspector: L. R. Kanow 8/6/85
L. R. Kanow, Reactor Specialist Date Signed
Approved By: T. Young, Jr. 8-6-85
T. Young, Jr., Chief, Engineering Section Date Signed

Summary:

Inspection during the period of July 2-26, 1985 (Report No. 50-312/85-21)

Areas Inspected: Routine inspection of the implementation of selected TMI Action Items. This inspection effort required 78 inspection hours onsite and 16 inspection hours in the Region V office by one region based inspector. During this inspection, Inspection Procedure 92704 was covered.

Results: No violations or deviations were identified.

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DETAILS

1. Persons Contacted

a. Licensee Personnel

- *G. Coward, Plant Superintendent
- *R. Colombo, Regulatory Compliance Supervisor
- *J. Jewitt, Site QA Supervisor
- *H. Canter, QA Operations Surveillance Supervisor
- *N. Brock, Electrical/I&C Supervisor
- *J. Williams, Supervisor, I&C Nuclear Engineering
- *L. Conklin, Senior I&C Engineer
- *B. Stiver, Acting Mechanical Maintenance Supervisor
- *S. Crunk, Regulatory Compliance
- *J. McColligan, Principal Project Engineer
- +*R. Roehler, Licensing Engineer
- *D. Muth, Assistant Licensing Engineer
- *J. Delrue, Shift Technical Advisor
- *L. Adkins, Control Room Operator
- *M. Meredith, Senior Control Room Operator
- +B. Speight, Licensing Engineer
 - B. Spencer, Operations Supervisor
 - B. Beebe, I&C Engineer
 - B. Chung, I&C Technician
 - S. Redeker, Shift Technical Advisor
 - J. Mau, Training Supervisor
 - D. Tzouros, Control Systems Engineer

b. Contract Personnel

- +*M. Makao, Licensing, Bechtel

The inspector also talked with other licensee personnel during the inspection. These include plant staff engineers, administrative assistants, and document control personnel.

+Denotes personnel present during the exit interview on July 12, 1985.

*Denotes personnel present during the exit interview on July 26, 1985.

2. TMI Action Plan Requirements

a. (Open) Item I.C.1, "Short-Term Accident and Procedures Review-Inadequate Core Cooling/Transients and Accidents"

Summary: NUREG-0737 requires licensees to perform analyses of transients and accidents, prepare emergency procedure guidelines, upgrade emergency procedures, including procedures for operating with natural circulation conditions, and to conduct operator retraining. Supplement 1 to NUREG-0737 (Generic Letter No. 82-33), dated December 17, 1982, requires that each applicant submit a Procedure Generation Package (PGP) at least three months before the

date of formal operator training on the upgraded procedures. Additional clarification was provided in NUREG-0578.

Conclusions: The inspection of this TMI item was previously addressed in Inspection Reports 83-17, 82-28 and 82-06. NRC staff found the Abnormal Transient Operating Guidelines (ATOG) developed by the B&W owners group to be acceptable as a basis for implementation of improved plant specific procedures. This was documented in a letter dated September 19, 1983 from NRC to licensees of B&W pressurized water reactors.

Rancho Seco participated in the B&W Owners Group program in the development of the ATOG, which resulted in plant specific technical guidelines.

On January 31, 1984, the licensee submitted their Abnormal Operating PGP. This included their plant-specific Technical Guidelines, the Emergency Operating Procedures (EOPs) Writers Guide and a Description of the Program to validate the EOPs. From the PGP, the Rancho Seco EOPs were developed.

The inspector reviewed the Rancho Seco EOPs to verify consistency with the plant-specific ATOG. The following EOPs were reviewed:

<u>ATOG No.</u>	<u>EOP No.</u>	<u>Title</u>
Section III.A	E.03	Loss of Sub-cooling
Section III.B	E.04	Loss of Heat Transfer
Section III.C	E.05	Excessive Heat Transfer
Section III.D	E.06	SGTR
Section 1CC	E.07	1CC

Based on this review the inspector identified the following inconsistencies: 1) Section III.B, Step 5.4 and Section III.D, Step 20-0/20.5 of the ATOG were not found in the EOPs. These steps appear to be in the guidelines as added precautions and reminders to the operators; 2) ATOG Section 1CC, Step 21.F references an operating procedure to establish core cooling but was not referenced in the EOP; 3) The flow chart for procedure E.04 did not reflect step 9.0 of the EOP in its entirety; and 4) ATOG System Auxiliary Diagram (SAD) section had not been incorporated into the EOPs.

The licensee committed to correct the inconsistencies of Item 1 and item 2 by September 1, 1985. The licensee also committed to review and update the EOP flow charts and incorporate a SAD section into the EOPs at a later date.

The inspector reviewed the operator training lesson plan for implementation of the EOPs and training records for 13 licensed operators. The inspector found that for one operator a portion of the training had not been documented and that for another operator a re-examination for a portion of the training had not been documented. The training department expressed that verbal training and a verbal exam. had been given. The licensee committed to

provide documentation that training had been given by August 1, 1985.

The inspector verified that current revisions of the EOPs were available to the operators in the Control Room.

This item will remain open pending completion of licensee actions on the commitments mentioned above.

b. (Open) TMI Item II.E.1.1.2, "Auxiliary Feedwater System Evaluation - Long-Term System Modifications"

Summary: NUREG-0737 requires licensees to evaluate its auxiliary feedwater (AFW) system and to upgrade the system where needed based on the evaluation.

Conclusions: The inspector's understanding of this item consists of the following issues: (1) Protection of the AFW system from internally generated missiles; (2) Automatic loading of the auxiliary feedwater pumps onto the diesel buses; (3) Changing of the auxiliary feedwater piping arrangement so that single-failure criteria can be met with respect to valve FWS-055 and installation of an automatically controlled pneumatic isolation valve (FV-31855); (4) Installation of seismically qualified valves on the ICS; and (5) Installation of the EFIC system.

Discussions with the licensee personnel disclosed that Item (1) was addressed in a letter from SMUD to NRC dated April 1, 1985. No modifications were required as a result of SMUD's review of the AFW system from internally generated missiles. This was found acceptable by NRR, therefore no other action is required on this item. Item (2) was performed under ECN No. A-3653 Rev. 1. Item (3) was performed under ECN No. A-3094 Rev. 2, but that the isolation valve (FV-31855) will not be automatically controlled until EFIC is complete. It is the inspector's understanding that Item (5) is scheduled for completion at the end of Cycle 9 (scheduled for 1988).

c. TMI Item II.E.1.2, "Auxiliary Feedwater System Initiation and Flow"

Sub-item 1.B.2 (Open) AFW Safety Grade Initiation

Summary: This item requires the licensee to provide a control grade automatic initiation feature for this AFW system and then upgrade it to meet safety grade requirements.

Conclusions: The licensee stated that this modification (No. 13) was initiated by ECN No. A-3653, Rev. 1 and provides for auto loading of the auxiliary feedwater pump P319 onto its emergency power upon initiation of the safety features actuation system. The licensee also stated that requirements have been met, but that installing the EFIC system will provide additional safety grade protection. The licensee's claim is currently under NRC staff review.

Sub-Item 2.C.2 (Open) - AFW Safety Grade Implementation

Summary: This item requires the licensee to provide a safety grade indication of the auxiliary feedwater flow to each steam generator in the Control Room.

Conclusions: The inspector reviewed ECN A-3622, Rev. 2 which implements the change to upgrade the auxiliary feedwater flow indication and ECN A-2912 Rev. 2 which implements the change to upgrade the condensate storage tank level monitor. The inspector also reviewed the training lesson plan on the modifications and on a sample basis QA/QC records, procedures and drawings.

Based on this review the inspector determined the following;

- ° records were reviewed and signed by appropriate levels of management
- ° QA/QC controls had been established
- ° procedures and drawings had been reviewed and changed to reflect the modifications
- ° a training lesson had been developed to provide training on the modifications

The inspector did note that the current training lesson plan on the AFW system did not reference which transmitters input into the SPDS for the auxiliary feedwater flow indication and the proper level transmitters in the lesson plan and associated diagram for the condensate storage tank level monitor. This was identified to the licensee who promptly proceeded to incorporate the transmitters into the lesson plan.

At the time of the inspection, indication in the control room was from control grade instrumentation and the IDADS computer. The safety grade indication will be from the SPDS computer once it becomes operational and upgraded to safety grade (scheduled for cycle 9).

This item will remain open pending verification that the auxiliary feedwater flow and condensate storage tank level indication is available on the SPDS.

d. TMI Item II.F.1.6, "Accident Monitoring"

Sub-Item 6 (Closed) - Containment Hydrogen Monitor

Summary: This item was previously addressed in Inspection Report 85-09 dated May 1, 1985.

Findings and Conclusions: To verify turnover of IDADS to operations STP 629 was reviewed. The inspector verified that the STP had been completed, reviewed, and signed by the appropriate levels of

management. The inspector did note that the acceptance criteria specified in the procedure at the time the STP was performed did not reflect the proper acceptance criteria for the system. The procedure was later changed to reflect the proper acceptance criteria.

Completion of this modification (No. 21) remains open due to one Work Order (No. 101289) which changes instrument tag numbers. Instrumentation has been installed and indication can be found in the control room. Based on the above, this item is considered closed.

e. TMI Item II.K.2, "Orders on B&W Plants"

Sub-Item 8 (Open) - Upgrade of the AFWS

Summary: All operating Babcock and Wilcox (B&W) plants were ordered to be shut down shortly after the TMI-2 accident. The licensees were required to comply with the Commission Orders regarding certain short-term and long-term auxiliary feedwater system (AFWS) modifications.

Findings and Conclusions: All AFWS upgrade modifications for B&W plants are being reviewed as part of TMI items II.E.1.1 and II.E.1.2. Therefore, this item will remain open pending closure of items II.E.1.1 and II.E.1.2.

Sub-item 10.B (Open) - Safety Grade Trip

Summary: NUREG-0737 requires B&W designed reactors to install a safety grade, anticipatory reactor trip (ART) on loss-of-feedwater and turbine trip.

Background: The initial safety grade design utilized safety grade pressure switches, the NRR staff found this acceptable in the safety evaluation report dated November 2, 1981, provided acceptable seismic and environmental qualifications for the press switches were obtained. The licensee could not obtain the safety grade pressure switches at that time, therefore, the design was revised to incorporate one pressure transmitter and four electronic comparators. Later, the licensee's design review discovered the new design was not testable during operation. The licensee decided to revise the design to incorporate the use of the safety grade pressure switches which were testable for the turbine trip portion of the ART system. The loss of feedwater flow portion of the system is to utilize new inputs from safety grade main feedwater flow transmitter channels which could be compared to reactor power for a flux/flow trip. The flow signal will also be used as part of the EFIC system to initiate auxiliary feedwater flow from the reactor protection system.

Findings and Conclusions: The inspector reviewed the modification (No. 13) by reviewing ECN A-4827 and ECN A-2792. The inspector also reviewed on a sample basis QA/QC records, procedures changes, and changes to as-built drawings.

Based on this review the inspector determined the following:

- ° modifications were made with appropriate levels of management review
- ° adequate QA/QC controls had been established
- ° procedures had been reviewed and changed to reflect the modification
- ° current revisions to affected procedures were located in the control room.

The inspector reviewed the equipment qualification Test Report No. AQR-101083/Rev. 1, for the ASCO pressure switches and found that it appeared to be adequate.

The installation of the pressure switches satisfied the commitment to upgrade the turbine trip portion of this item. The upgrade of the main feedwater flow trip is affected by the implementation of the EFIC as stated in a letter from Rodriguez to Stolz dated April 28, 1983. The upgrade is scheduled to be completed by Cycle 9 (estimated 1988).

This item will remain open pending a review of the modification to upgrade the main feedwater trip portion of the ART system and a review of Technical Specification changes to assure channel functional checks (including sensors) for ART system are scheduled with a frequency commensurate with existing RPS channel functional checks.

3. Exit Meeting

On July 12 and 26, 1985, an exit meeting was conducted with licensee representatives identified in paragraph 1. The inspector summarized the scope of the inspection and findings as described in this report.