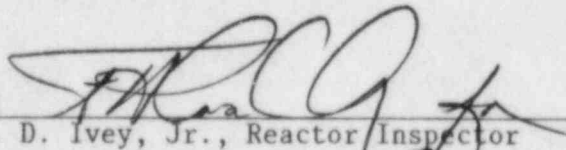


U. S. NUCLEAR REGULATORY COMMISSION

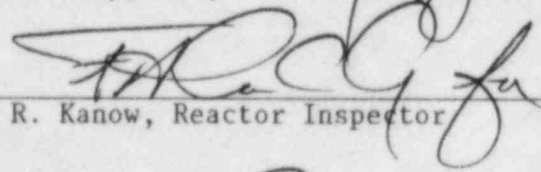
REGION V

Report No. 50-312/85-09  
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: March 27 - April 3 1985

Inspectors:

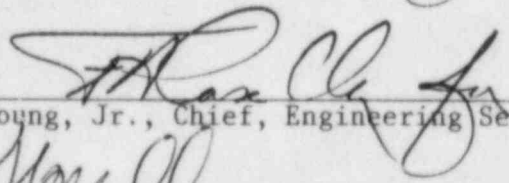
  
K. D. Ivey, Jr., Reactor Inspector

4/25/85  
Date Signed

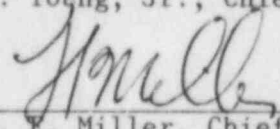
  
L. R. Kanow, Reactor Inspector

4/25/85  
Date Signed

Approved By:

  
T. Young, Jr., Chief, Engineering Section

4/25/85  
Date Signed

  
L. F. Miller, Chief, Reactor Projects Section 2

4/26/85  
Date Signed

Summary:

Inspection between March 27 - April 3, 1985 (Report 50-312/85-09)

Areas Inspected: Routine inspection of the implementation of selected TMI Action Items. This inspection effort required 89.5 inspector-hours onsite and eight inspector-hours in the Region V office by two regional inspectors.

Results: No violations or deviations were identified.

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## DETAILS

### 1. Persons Contacted

#### a. Licensee Personnel

- \*G. Coward, Plant Superintendent
- \*N. Brock, Electrical/I&C Maintenance Supervisor
- \*H. Canter, QA Engineer
- \*R. Colombo, Regulatory Compliance Supervisor
- \*S. Crunk, Associate Nuclear Engineer
- \*J. Field, Engineering and Quality Control Superintendent
- \*R. Lawrence, Mechanical Maintenance Supervisor
- \*L. Keilman, Manager, Nuclear Engineering
- \*J. Delezinski, Licensing
- \*J. Williams, Instrumentation and Controls, Nuclear Engineering
- \*J. McColligan, Principle Project Engineer
- \*R. Dieterich, Licensing Supervisor
- \*M. Nickerson, Shift Technical Advisor
- J. Mau, Training Supervisor
- L. Conklin, Senior Electrical Engineer
- M. Ross, Engineer

#### b. Contract Personnel (BBC Brown Boveri)

- M. Makao, Licensing, Bechtel
- D. Prosch, Senior Engineer, Bechtel

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

\*Denotes personnel present during the exit interview on April 3, 1985.

### 2. TMI Action Plan Requirements

#### a. (Open) Item I.D.2 "Plant Safety Parameter Display Console"

Summary: NUREG-0737 requires the addition of a Safety Parameter Display System (SPDS) in the control room to display for operating personnel a minimum set of plant parameters which define the safety status of the plant. Additional guidance and clarification is given in NUREG-0696 and generic letter 82-33.

Conclusion: At the time of the inspection the SPDS was installed and was in the final stages of review before implementation.

The inspectors spoke with licensee personnel and reviewed a sample of licensee personnel training records. Training on the SPDS has been developed and is being taught in a three part lesson plan by Babcock and Wilcox.

The inspectors also performed a visual inspection of the electrical portion on the SPDS beginning at the signal conversion cabinet H4SCA

and H4SCB in the Auxiliary Building to the two CRT display channels and two operating control panels located on the control room panel H2SP and H1SS, respectively. The inspectors reviewed plant operations procedure A.76 "Safety Parameter Display System," Engineering Change Notice (ECN) 3907A through 3907M "Safety Parameter Display System," and QA/QC documentation relating to the installation of the SPDS. Based on this review the inspectors verified the following:

- ° Installation of the SPDS.
- ° Components are correctly identified and located.
- ° Adequate QC involvement during installation.
- ° QA and QC documentation properly reviewed and signed.
- ° An adequate procedure exists which provides instruction for the operation of the SPDS.

The inspector noted that although ECN No. 3907 has been closed out, the basis for completion and acceptance of STP 636 "Safety Parameter Display System Acceptance Test" is for training purposes only.

The system has not been turned over to operations. This item will remain open pending examination of the final turn over package of the SPDS to operations, and review of procedure and Technical Specification changes due to this modification.

b. (Closed) Item II.E.4.1 "Dedicated Hydrogen Penetrations"

Summary: NUREG-0737 requires that plants using external recombiners or purge systems for post-accident combustible gas control of the containment atmosphere should provide containment penetration systems for external recombiner or purge systems that are dedicated to that service only, that meet the redundancy and single-failure requirements of General Design Criteria 54 and 56 of Appendix A to 10 CFR 50, and that are sized to satisfy the flow requirements of the recombiner or purge system.

Conclusions: The inspection of this TMI item was continued as a followup to Inspection Report 50-312/84-19 for the inspection period July 19 - August 29, 1984.

The inspectors performed a visual inspection of dedicated hydrogen penetrations 60 and 67 located in the East and West Decay Heat Cooler Rooms of the Auxiliary Building. The locations of these two penetrations were not visibly marked, but were identified through location of valves HS53623 and HS53622 (which are part of the dedicated hydrogen system) and Drawing No. M-118, Rev. 6 "Penetration Pipe Spool Table of Dimensions." The inspectors reviewed turnover package No. 83-143 and Engineering Change Notice No. 3917. They also reviewed a sample of changes to plant procedures, changes to as-built drawings located in the control

room, and QA and QC documentation relating to the installation and acceptance of the hydrogen penetration.

Based on this inspection and review, the inspectors verified the following:

- ° Components are correctly identified and located.
- ° There is physical independence between redundant instrument components and actuating devices.
- ° Changes have been incorporated into various plant procedures to reference the dedicated hydrogen penetration or associated hardware.
- ° Changes have been incorporated into various as-built drawings.
- ° QC involvement during installation.
- ° QA and QC documentation was properly reviewed and signed.

The installation of the dedicated hydrogen penetrations has been completed and turned over to operations.

This item is considered closed.

c. Item II.E.4.2 "Containment Isolation Dependability"

Sub-item 5.B (Closed) - Containment Pressure Setpoint

Summary: NUREG-0737 requires that the containment setpoint pressure that initiates containment isolation for nonessential penetrations be reduced to the minimum compatible with normal operating conditions.

Findings and Conclusions: SMUD stated, in a January 16, 1981 letter to NRR, that the present setpoint limit of 4 psig is adequate to meet the 0737 requirement. In a subsequent letter to SMUD dated July 14, 1981, NRR agreed that the present setpoint limit is satisfactory and the item is closed out.

This item is closed.

Sub-item 7 (Closed) - Radiation Signal on Purge Valves

Summary: NUREG-0737 requires that containment purge and vent isolation valves close on a high radiation signal.

Findings and Conclusions: The modification (No. 5) was made in accordance with sub-ECN A-3683C and has been completed. The modification involved adding interlocks to close the Reactor Building purge valves (if open) on detection of high radiation levels during post LOCA conditions, using a signal from radiation monitors installed per TMI Action Item No. II.F.1.3.



The inspectors reviewed design and modification documents to ensure that the changes were made in accordance with procedures and reflected in the current as-built drawings and operating procedures. The inspectors discussed training for modifications with a training supervisor and reviewed training records to verify that appropriate personnel were trained on this modification.

Revision 5 to System Operating Procedure A.67, "Area Radiation Monitoring System," dated December 29, 1983, and Section 3.6.1 of Enclosure 5.25 to Administrative Procedure 305-33, "Radiation Monitoring System," Rev. 5, dated October 25, 1984, demonstrate that containment purge valves close on a high radiation signal.

Technical Specifications were changed in Amendment No. 40 to Facility Operating License No. DPR-54 for the Rancho Seco Nuclear Generating Station to reflect the changes made per TMI 0737 Requirement II.E.4.2.7.

This item is closed.

d. Item II.F.1 "Accident Monitoring"

The inspectors verified the licensee's actions taken in response to the following NUREG-0737 sub-items are as documented in correspondence between the licensee and the NRC.

Areas of inspection included:

- ° Review of design changes to ensure that modifications were reviewed, approved, inspected and tested in accordance with established procedures.
- ° Review of as-built drawings and procedures to ensure that revisions were incorporated to reflect modifications made to the systems.
- ° Discussions with training personnel and review of training records to ensure that applicable personnel received training on the modifications.
- ° Visual verification of the installation of accessible modifications.

In a September 8, 1982 letter, the NRC found the designs for these sub-items to be acceptable. In a February 17, 1983 letter, SMUD submitted proposed technical specification changes to NRR for approval. The technical specification changes are still under review.

Sub-item 4 (Closed) - Containment Pressure Monitor

Summary: NUREG-0737 requires that a continuous indication of containment pressure be provided in the control room of each operating reactor. Measurement and indication capability shall

include three times the design pressure of the containment for concrete, four times the design pressure for steel, and -5 psig for all containments.

Findings and Conclusions: The modification (No. 55) was made in accordance with Engineering Change Notice (ECN) A-2936 and completed October 28, 1983. The modification involved upgrading the existing containment pressure measurement to provide a continuous indication. Control room indication was verified by the inspectors. This indication includes a strip chart recorder on the control panel and will provide computer indication on the Interim Data Acquisition and Display System (IDADS) and the Safety Parameter Display System (SPDS) upon their turnover to operations (due at the end of the 1985 refueling outage). The inspectors also verified installation of the system by a visual inspection of the monitors at the penetrations into the containment building. The modification appears to satisfy the requirements of NUREG-0737.

This item is closed.

#### Sub-item 5 (Closed) - Containment Water Level Monitor

Summary: NUREG-0737 requires that a continuous indication of containment water level be provided in the control room for all plants. A narrow range instrument shall be provided for PWRs and cover the range from the bottom to the top of the containment sump. A wide range instrument shall also be provided for PWRs and shall cover the range from the bottom of the containment to the elevation equivalent to a 600,000 gallon capacity.

Findings and Conclusions: The modification (No. 12) was made in accordance with ECN A-2940 and completed October 28, 1983. The modification involved adding Class 1E equipment to the existing containment sump monitors and installing new flood level sensors in the containment building. Control room indication was verified by the inspectors. Narrow range indication is by status lights on the H2SF control panel. Wide range indication is by a strip chart recorder on the H1CO control panel and computer indication by the IDADS and SPDS computer systems (upon turn over to operations). The modification appears to satisfy the 0737 requirements.

This item is closed.

#### Sub-item 6 (Open) - Containment Hydrogen Monitor

Summary: NUREG-0737 requires that a continuous indication of hydrogen concentration in the containment atmosphere be provided in the control room. Measurement capability shall be provided over the range of 0 to 10% hydrogen concentration under both positive and negative ambient pressure.

Findings and Conclusions: The modification (No. 21) is being made in accordance with ECN A-2938 and is awaiting closure of sub-ECN A-2938E (which changes instrument tag numbers) for completion. All

hardware has been installed and accepted per ECN's A-2938A thru A-2938D. The modification utilizes two existing containment penetrations. The analysis system is a sample withdrawal type that receives, conditions for pressure, temperature and flow, analyzes and returns the sample to its source. In operation, the system will form part of the containment pressure boundary and contains redundant solenoid operated isolation valves to meet the isolation requirements of 10 CFR 50.

Control room indication for hydrogen concentration is provided by a dedicated strip chart recorder located on the H1CO control panel and also on the IDADS and SPDS computer systems (upon turnover to operations). Solenoid valve position is indicated on the local control panels (in the auxiliary building) and in the control room via the IDADS computer system. Since the IDADS computer system has not been turned over to operations, there is no qualified control room indication for solenoid valve position at this time.

This item is open until the turnover of the IDADS computer system to operations to provide control room indication of solenoid valve position (for containment isolation indication) and pending the closeout of ECN's A-2938E and A-2938 for completion of the modification (No. 21).

e. Exit Meeting

On April 3, 1985, an exit meeting was conducted with licensee representatives identified in paragraph 1. The inspectors summarized the scope of the inspection and findings as described in this report.