

U.S. NUCLEAR REGULATORY COMMISSION

REGION V

Report Nos.: 50-206/88-08, 50-361/88-08, 50-362/88-08

Docket Nos.: 50-206, 50-361, 50-362

License Nos.: DPR-13, NPF-10, NPF-15

Licensee: Southern California Edison Company
P. O. Box 800, 2244 Walnut Grove Avenue
Rosemead, California 92770

Facility Name: San Onofre Units 1, 2 and 3

Inspection at: San Onofre, San Clemente, California

Inspection conducted: February 28 through April 9, 1988

Inspectors:

P. H. Johnson
for F. R. Huey, Senior Resident Inspector
Units 1, 2 and 3

5/6/88

Date Signed

P. H. Johnson
for J. E. Tatum, Resident Inspector

5/6/88

Date Signed

P. H. Johnson
for A. L. Hon, Resident Inspector

5/6/88

Date Signed

Approved By:

P. H. Johnson
P. H. Johnson, Chief
Reactor Projects Section 3

5/6/88

Date Signed

Inspection Summary:

Inspection on February 28 through April 9, 1988 (Report Nos. 50-206/88-08, 50-361/88-08, and 50-362/88-08)

Areas Inspected: Routine resident inspection of Units 1, 2 and 3 Operations Program including the following areas: operational safety verification, evaluation of plant trips and events, monthly surveillance activities, monthly maintenance activities, refueling activities, licensee event reports review, and followup of previously identified items. Inspection procedures 30703, 60705, 60710, 61726, 62703, 71707, 71709, 71710, 71711, 71881, 72700, 90712, 92700, 92701 and 93702 were covered.

Results:

General Conclusions and Specific Findings:

1. The inspectors noted an example of licensee weakness in implementing the requirements of station rigging procedures (Paragraph 5.c).
2. The inspectors noted several apparent examples of maintenance program deficiencies, involving:
 - a. Preparation of maintenance orders (Paragraph 5.g)
 - b. Implementation of vendor manual recommendations (Paragraph 5.e)
 - c. Fastener thread engagement (Paragraph 5.h)
3. During plant walkdowns, the inspectors noted several plant material condition deficiencies, including (Paragraph 6.c):
 - a. Valve labelling problems
 - b. Boric acid leakage problems
 - c. Missing or broken part problems
 - d. Plant configuration control problems

Significant Safety Matters: None

Summary of Violations: None

Open Items Summary:

During this report period, 2 new unresolved and 2 new followup items were opened. A total of 15 follow up items were closed and 2 were examined and left open.

DETAILS

1. Persons Contacted

Southern California Edison Company

- *C. McCarthy, Vice President, Site Manager
- *H. Morgan, Station Manager
 - D. Heinicke, Deputy Station Manager
- *D. Schone, Quality Assurance Manager
 - D. Stonecipher, Quality Control Manager
- *R. Krieger, Operations Manager
- *D. Shull, Maintenance Manager
- *J. Reilly, Technical Manager
 - P. Knapp, Health Physics Manager
 - D. Peacor, Emergency Preparedness Manager
 - P. Eller, Security Manager
 - J. Reeder, Operations Superintendent, Unit 1
 - V. Fisher, Operations Superintendent, Units 2/3
- *L. Cash, Maintenance Manager, Unit 1
- *R. Santosuosso, Maintenance Manager, Units 2/3
- *M. Wharton, Assistant Technical Manager
- *C. Couser, Compliance Engineer

*Denotes those attending the exit meeting on April 8, 1988.

The inspectors also contacted other licensee employees during the course of the inspection, including operations shift superintendents, control room supervisors, control room operators, QA and QC engineers, compliance engineers, maintenance craftsmen, and health physics engineers and technicians.

2. Operational Safety Verification (71707) Radiological Protection (71709) Security (71881)

The inspectors performed several plant tours and verified the operability of selected emergency systems, reviewed the Tag Out log and verified proper return to service of affected components. Particular attention was given to housekeeping, examination for potential fire hazards, fluid leaks, excessive vibration, and verification that maintenance requests had been initiated for equipment in need of maintenance. The inspectors also observed selected activities by licensee radiological protection and security personnel to confirm proper implementation of and conformance with facility policies and procedures in these areas.

a. Operator Awareness (Units 2&3)

During this report period, the inspector observed several plant conditions that indicated the need for improved operator awareness. The following examples were noteworthy:

- @ On March 9, 1988, an inspector toured the Unit 2 diesel generator rooms and observed that the oil levels in two of the four diesel engine governors were out of sight high in the sight glass. The label posted on the governor stated that oil level should be within the indicating range of the sight glass and above the minimum level mark when the unit is in standby. Failure to maintain the proper oil level in the diesel engine governors has been a recurrent observation, and the inspector brought it to the attention of the shift superintendent, who took immediate corrective action. The inspector discussed this observation with the Unit Superintendent and noted that corrective actions to address this condition need to be more effective.
- @ While walking down the boric acid makeup system and parts of the reactor coolant chemical and volume control system, the inspector observed numerous deficiencies and minor boric acid leaks that had not been identified and documented. Specific examples are listed in paragraph 6 of this report.
- @ While performing the engineered safety features system walkdown, discussed in paragraph 6 of this report, the inspector observed that the suction pressure for charging pump 3P-192 was oscillating between 40 and 60 psi. The inspector discussed this observation with the shift superintendent, who stated that the problem had been identified previously and referred to station technical for resolution. The inspector observed that the operations department did not appear to be actively pursuing a timely resolution to this problem. Followup action regarding this item will be covered under open item 50-362/87-22-02.

b. Containment Walkdown (Unit 2)

Prior to Unit 2 startup following the steam generator tube repairs, the inspector toured the Unit 2 containment. Housekeeping and material conditions appeared to be good in all areas; however, the inspector observed minor corrosion in the vicinity of the hot leg sample isolation valves 2HV-508 and 2HV-517. The licensee was informed of this observation.

No violations or deviations were identified in this area during the inspection.

3. Evaluation of Plant Trips and Events (93702)

a. Reactor Shutdown to Repair Steam Generator Tube Leak (Unit 2)

On March 16, 1988, the licensee commenced a reactor shutdown to repair steam generator E-088 tube leakage. A primary to secondary leak was identified by the licensee on March 1, and was estimated to be approximately 15 gallons per day (gpd), based on cesium 138 concentrations. The leak rate appeared to remain below 60 gpd until March 15, when the leak rate increased to 77 gpd. On March 16, the

leak rate increased to 86 gpd based on cesium 138 concentrations, and the unit was shut down. At the onset of the leak, the licensee observed that the leak rate based on iodine 131 concentrations was twice to three times that indicated by cesium 138. Just prior to the unit shutdown, the licensee estimated the actual leak rate to be approximately 500 gpd. The licensee determined that the isotope concentrations were being masked by a steam generator hideout phenomenon. The licensee had not been able to calculate leak rate based on tritium concentrations, due to steam generator blowdown reprocessing and reuse. The Technical Specifications allow continued operation of the unit up to a leak rate of 720 gpd. The licensee has revised station procedures to preclude recurrence of this problem. The unit was placed in mode 5 on March 18 and the reactor coolant system was drained to mid-loop on March 20. The licensee repaired the steam generator and returned the unit to operation on April 5. The steam generator hideout phenomenon experienced will be reviewed by a Region V radiation specialist during an upcoming inspection.

During steam generator tube inspection on steam generator E-088, the licensee determined that the leak had originated from a tube that had previously been preventively plugged. The plug had come out of the tube in the cold leg plenum of the steam generator and most likely migrated to the reactor vessel. The licensee also determined that one tube plug was missing from the cold leg plenum on steam generator E-089, but was not able to recover either of the lost plugs. A Confirmatory Action Letter (CAL) was issued by Region V on April 4, 1988 to confirm actions being taken by the licensee before exceeding 20% power. The licensee completed a safety evaluation for the missing plugs and reviewed the basis for unit return to service with NRR prior to unit startup and the CAL was rescinded on April 5. The licensee committed in an April 5, 1988 letter to provide additional information within 30 days for followup review by NRR.

No violations or deviations were identified in this area during the inspection.

4. Monthly Surveillance Activities (61726)

a. Observation of Routine Surveillance Activities (Unit 1)

The inspector observed the following surveillances:

- @ S01-12.3-10 Diesel Generator Load Test
- @ In-service testing of pressurizer power operated relief valves CV-545 and CV-546
- @ In-service testing of feedwater pump hydraulic valve FWS-HV-851B

b. Observation of Routine Surveillance Activities (Units 2&3)

The inspector observed the following surveillance activities:

- @ S023-3-3.23 Diesel Generator Monthly Test
- @ S023-3-3.23 Att 1 Diesel Generator G-002 Surveillance
- @ S023-3-3.23 Att 4 Diesel Generator G-003 Surveillance

The inspector observed that surveillance activities were well planned and controlled and satisfied the requirements of paragraphs 4.8.1.2.a and b of the Technical Specifications.

No violations or deviations were identified in this area during the inspection.

5. Monthly Maintenance Activities (62703)

a. Observation of Routine Maintenance Activities (Unit 1)

The following maintenance activities were observed:

- @ MO 88021839 EQ upgrade for S1-AFW-MOV-1204
- @ MO 88031017 Leak Test of Backup Nitrogen Check Valve S1-ISI-813 and S1-ISI-812 for the Auxiliary Feedwater (AFW) Discharge Valve
- @ MO 88032840 Adjustment of valve position indicator limit switch on FWS-HV-815B

b. Observation of Routine Maintenance Activities (Units 2&3)

During this report period, the inspector observed the following maintenance activities:

- @ M088040610 Core Protection Calculator Channel C Locked Up Keyboard (Unit 2)
- @ M086101814, Revision 1 Auxiliary Feedwater Penetration Isolation Valve 3HV-4731 Routine Maintenance (Unit 3)
- @ M087103705 Auxiliary Feedwater Pump 3P-141 Pump Oil Change (Unit 3)
- @ M088011718 Auxiliary Feedwater Pump 3P-141 Motor Oil Change (Unit 3)
- @ M088013165 Auxiliary Feedwater Pump 3P-141 Outboard Motor Bearing Oil Level Low (Unit 3)

c. Improper Rigging (Unit 1)

On March 14, 1988, while the unit was in Mode 5 for the mid-cycle outage, the inspector observed maintenance personnel improperly lifting a missile shield using the vertical section of a steam safety valve tailpipe for rigging. In response to the inspector's concern, the licensee revised the rigging arrangement to conform with station procedure requirements. This event was not safety significant, since the weight of the load was approximately 200 pounds and the tail pipe is not safety related pipe. However, this practice was contrary to the licensee's most current procedure S0123-I-7.24, "Rigging - Standards and Guidelines for Maintenance Activities." The licensee initiated a maintenance incident investigation and determined that training had not been properly implemented. The licensee took action to correct this deficiency.

This item is closed (50-206/88-08-01).

d. Maintenance Procedure Deficiencies

While observing maintenance associated with a keyboard failure on core protection calculator (CPC) channel C, the inspector noted the following deficiencies:

- @ Work authorization request (WAR) 2-8802021 was signed by the Control Operator to release the equipment for maintenance with an advance copy of the maintenance order (MO) attached to the WAR. The MO was still in planning and the work plan had not been documented on the MO.
- @ The inspector verified that the computer technician was using an MO which included work plan instructions. The work plan directed the computer technician to perform surveillance testing in accordance with procedure S023-V-12.2.1 and to perform troubleshooting as necessary to resolve any out-of-tolerance condition. The MO directed the computer technician to initiate a nonconformance report (NCR) and to return the MO to planning for revision if a nonconformance was found. The inspector noted that NCR 2-2371 was issued to address the CPC failure, but the MO was not returned to planning for revision. It appeared to the inspector that the NCR was being used as the work plan and that the MO was no longer directing the maintenance activity.

This maintenance activity was observed late in the report period and remains unresolved pending additional inspector evaluation (50-361/88-08-01).

e. Implementation of Vendor Manual Requirements

The inspector reviewed the following vendor manuals relative to maintenance activities being directed by M086101814 and M088011718:

- @ S023-503-7-1-959-4 Overhaul and Maintenance Manual for Hydraulic Valve Operator Part Number 7-4058

@ S023-405-6-98-1 Instructions for Large Frame
Horizontal Induction Motors (Siemens -
Allis)

The inspector observed that both vendor manuals had been revised and had Bechtel change sheets attached. It was not clear to what extent the vendor had concurred in the revisions that were made. The inspector also observed that manual S023-503-7-1-959-4 specified that hydraulic pressure should be released from the nitrogen accumulator before checking the nitrogen precharge. The licensee's procedure did not include this statement. The inspector discussed these observations with the licensee, emphasizing the need to capture appropriate vendor information in station procedures and to document vendor concurrence to vendor manual revisions.

This is an open item, pending additional licensee action (50-362/88-08-01).

f. Determination of Component Surveillance Requirements

While reviewing Vendor Manual S023-503-7-1-959-4 for valve 3HV-4731, the inspector observed that the hydraulic unit contained a relief valve that was set at 1800 psig and an oil filter high differential pressure indicator (specification not given). The inspector questioned to what extent periodic maintenance and surveillance were conducted on these items. The licensee stated that specific requirements did not at that time exist. The Station Technical Manager agreed to evaluate the need for periodic maintenance and surveillance.

This is an open item pending additional licensee action (50-362/88-08-02).

g. Inadequate Maintenance Order Preparation

While reviewing the work plan for various maintenance activities, the inspector noted several deficiencies. For example:

@ M088011718 made reference to procedure S023-I-8.12, TCN 0-6 for changing the motor oil on auxiliary feedwater pump 3P-141. The inspector observed that paragraphs 3.2 and 6.1.4 of the procedure referred to the MO for the type of oil to be used, but an oil type was not listed on the MO. The inspector discussed this with the mechanic and maintenance planners and verified that the proper oil was used.

@ M087103705 made reference to procedure S0123-I-8.3 TCN 0-1 for changing the pump oil on auxiliary feedwater pump 3P-141. The inspector observed that paragraph 3.3 of the procedure provided for the mechanic to sign the MO to document that prerequisites had been completed. In reviewing the maintenance order, the inspector noted that the maintenance order did not provide for this verification and it was not performed. The inspector

observed that the verification was administrative in nature and was of no safety significance.

- @ M086101814 specified the use of a radiation exposure permit (REP) for entering the work area. The inspector noted that the work area was not posted and did not require an REP for entry. The inspector discussed these observations with representatives of the maintenance planning organization and emphasized the need for improvements in the development and review of work plans and procedures.

This item is closed (50-362/88-08-03).

h. Improper Thread Engagement

While conducting the ESF walkdown discussed in paragraph 6 of this report, the inspector observed two examples of apparently inadequate thread engagement. The packing gland follower nuts for the charging pump suction isolation valve from the refueling water storage tanks (3HV-227C) were approximately 1/8" short of full engagement; and the packing gland follower nuts for the volume control tank outlet isolation valve (3LV-227B) were approximately 1/16" short of full thread engagement. The licensee's Torque Manual (M-37204) requires that pressure retaining nuts be fully engaged, with one thread showing, or additional evaluation is required. The inspector referred this matter to the licensee for additional evaluation and questioned the manner in which the Torque Manual was being implemented. The licensee evaluated the observed packing gland stud nut engagements and determined that they were within design requirements. The licensee also committed to emphasize proper implementation of torque manual requirements.

This item is closed (50-362/88-08-04).

i. Control of Thread Sealant

While conducting the ESF walkdown discussed in paragraph 6 of this report and during a containment inspection conducted prior to Unit 2 return to service, the inspector questioned the controls associated with the use of thread sealant in the following applications:

- @ On a threaded plug screwed into each of the charging pump suction accumulators.
- @ On the capped fitting downstream of vent valve 1204MR-269, located inside containment, on the 45' level, near safety injection tank (SIT) MT-010.

The Maintenance Manager stated that the Consumables Manual (M-36609) controls the application of consumables such as thread sealant. The inspector reviewed the Consumables Manual and found that it provided guidance for the use of consumables, but it stated that specific application of consumables is controlled by work instruction or procedure. The Maintenance Manager stated, in response to the

inspector's observations, that the adequacy of procedures for controlling the use of thread sealants would be evaluated.

This item remains open, pending additional inspector review. (50-361/88-08-02).

No violations or deviations were identified in this area during the inspection.

6. Engineered Safety Feature Walkdown (71710)

a. Unit 1

While the unit was in mid-loop operation, the inspector verified the required system alignment utilizing the following procedures:

@ S01-4-37 "Residual Heat Removal System Alignment"

@ S01-12.2-13 "RC/RHR Pumps Breaker Alignment"

b. Unit 3

The inspector walked down the boric acid makeup system and parts of the chemical and volume control system. The inspector verified that system configuration was in accordance with the following piping and instrumentation diagrams (P&IDs):

40123 Reactor Coolant Chemical and Volume Control System (System 1208)

40124 Reactor Coolant Chemical and Volume Control System (System 1208)

40125 Reactor Coolant Chemical and Volume Control System (System 1218)

The inspector verified that the systems were aligned as required by the Technical Specifications for Mode 1 operation.

c. Plant Material Condition Deficiencies (Unit 3)

During the Unit 3 system walkdown the inspector noted several plant material condition deficiencies. The deficiencies were grouped into the following categories:

(1) Valve Position Indication Problems

* Charging pump 3P-191 drain valves 1208MU075 & 102 indicated open at the remote handwheel operators, although the valves were closed.

* Refueling water storage tank gravity feed valve 3HV-2270 indicated 8% open locally, although the valve was closed.

- * Boric acid makeup tank T-072 gravity feed valve 3HV-9235 indicated 10% open locally, although the valve was closed.
- * Boric acid to charging pump suction valve 3HV-9247 indicated 10% open locally, although the valve was closed.

(2) Boric Acid Problems

- * Boric acid makeup pump 3P-175 recirculation line valves 3PSV-9232 and 1218MR031 were leaking boric acid.
- * Structural pipe supports in the vicinity of the boric acid makeup pumps were in need of preservation.
- * Boric acid to blending tee control valve 3FV-210Y was leaking boric acid.
- * Pressurizer surge line sample isolation valve 3HV-513 was leaking boric acid.
- * The fitting near the orifice isolation valve for flow orifice 3FT-0311 was leaking boric acid.
- * Letdown isolation valve 3HV-9205 was leaking boric acid onto the floor and creating a puddle.
- * Reactor coolant system hot leg sample cooler was leaking boric acid onto the floor and creating a puddle.

(3) Labelling Problems

- * Concentrated boric acid to boric acid makeup tank T-072 isolation valve 1218MU057 was not labeled.
- * Boric acid pump relief line vent valve 1218MR086 was incorrectly labeled as MR-080.
- * Boric acid to charging pump suction vent valve 1218MR028 was incorrectly labeled as 1218MU115, and was also missing a valve operator.
- * Labeling for boric acid vent and drain valves 1218MR001 and MR075 was not legible.
- * P&ID 40125AS03-4 (E-1) made reference to boric acid pump "A" relief valve PSV-9246. The relief valve is actually common to both boric acid makeup pumps P-174 and P-175.
- * P&ID 40125BS03-4 (F-8) incorrectly made reference to P&ID 40124S03 (F-3) for chemical and charging pump suction. The correct reference should be P&ID 40124BS03 (G-8).

(4) Missing or Broken Part Problems

- * Charging pump discharge to high pressure safety injection header isolation valve 1208MU065 was missing a remote handwheel. The handwheel was removed by FCN S2421M to require local operation, but a caution tag was not placed at the remote operator.
- * Charging pump 3P-190 discharge valve 1208MU068 remote position indication was broken. The reach rod mechanism was disabled by maintenance order 87062245, but a caution tag was not hung at the remote operator.
- * Boric acid makeup pump 3P-175 recirculation needle valve 1218MU-043 was missing a handwheel.
- * Boric acid to charging pump suction vent valve 1218MR028 was incorrectly labeled as 1218MU115, and was also missing a valve operator.
- * Manual valve operators for boric acid vent and drain valves 1218MR075 and MR155 were adrift.
- * The manual operator for boric acid vent and drain valve 1218MR001 was not secured.

(5) Housekeeping Problems

- * A box of KWIK bolt concrete anchors was left adrift in 3P-175 boric acid makeup pump room.

(6) Configuration Control Problems

- * The lock for charging pump 3P-190 discharge valve 1208MU068 was hanging loose at the operator for the valve.
- * Caution tag 3-88-020 and 3 red tags for work authorization 3-8800918 were left adrift in Unit 3 penetration room 209.

Although the inspector noted a number of deficient plant conditions which indicated that operator awareness could be improved, the inspector observed that overall, housekeeping conditions were being maintained at a high standard. The inspector discussed these observations at the exit meeting.

This item is closed (50-361/88-08-03).

No violations or deviations were identified in this area during the inspection.

7. Refueling Activities (60705, 60710, 71711, 72700)

a. Mid Cycle Outage (Unit 1)

On February 14, 1988, Unit 1 was taken off line for a 45 day mid-cycle outage. The purpose of this outage was to perform

inspection, maintenance, modification and testing activities which would normally be done during the Cycle X refueling outage, scheduled for July 1988. The outage was divided to avoid a simultaneous refueling outage with Unit 3, which is scheduled for April - June, 1988.

The significant work performed during this outage was:

- @ Technical Specification required steam generator tube inspection and plugging. This effort was completed and the results were sent to NRR for review.
- @ Reactor Coolant Pump RCP-A motor overhaul and seal inspection. This effort was completed.
- @ Containment integrated leak rate testing (ILRT).
- @ Spent fuel transshipment to Unit 2/3 spent fuel pool. The licensee received the shipping cask and completed equipment and procedure preparation. The licensee also conducted an On-Site Safety Committee Review and determined that this activity would not result in an unreviewed safety question. However, the actual transfer activity and dry run were suspended pending resolution of license amendment concerns with NRR.

b. Startup Testing (Unit 2)

The inspector reviewed the test results of the Unit 2 startup testing conducted following the cycle IV refueling outage. Data taken by the following procedures were reviewed:

- @ S023-V-1.0 TCN 8-1 Low Power Physics Testing
- @ S023-V-1.0.1 TCN 1-1 Criticality Following Refueling
- @ S023-V-1.0.2 Revision 2 Boron Endpoint Determination
- @ S023-V-1.0.3 Revision 2 Isothermal Temperature Coefficient Measurement at Hot, Zero Power
- @ S023-V-1.0.5 Revision 2 Control Element Assembly Worth by Boration/Dilution
- @ S023-V-1.0.6 TCN 2-1 Control Element Assembly Worth by Exchange
- @ S023-V-1.0.7 TCN 1-2 Determination of Neutron Flux Level for Low Power Physics Testing
- @ S023-V-1.10 Revision 4 Reactivity Computer Installation and Alignment
- @ S023-V-1.12 Revision 9 Power Distribution Monitoring

- @ S023-V-1.18 Revision 3 NSSS Calorimetric
- @ S023-V-1.19 Revision 4 Nuclear and Thermal Power Calibration
- @ S023-V-1.19.1 Revision 1 Excure Log Power Calibration
- @ S023-V-1.20 TCN 3-3 RCS Calorimetric Flow Measurement
- @ S023-V-1.21 TCN 1.1 Core Performance Record
- @ S023-V-1.25 Revision 1 Process Variable Cross Comparison
- @ S023-V-2.6 TCN 2-2 Power Ascension Testing Using the CEFAST Method
- @ S023-V-3.2.5 Revision 3 Refueling Interval Temperature Sensor Calibration

No violations or deviations were identified in this area during the inspection.

8. Review of Licensee Event Reports (90712, 92700)

Through direct observations, discussion with licensee personnel, or review of related records, the following Licensee Event Reports (LERs) were closed:

Unit 1

- 87-17 Entries into Technical Specification 3.0.3 to Perform Vents of Safety Injection Header
- 88-04 Failure of Solenoid Valve SV-3900 for Safety Injection Isolation Valve HV-851B

Unit 2

- 85-61 Main Steam Safety Valve Setpoints Outside Technical Specification Limits
- 87-27,R1 Technical Specification Fire Door Surveillance Discrepancies
- 87-31-R1 Manual Reactor Trip Due to Feedwater Isolation Valve Failing Closed
- 88-04 Spurious Control Room Isolation Actuation Due to Spike on Radiation Monitor RT-7825
- 88-05 Spurious Train 'A' Toxic Gas Isolation System Actuators due to Equipment Failure

Unit 3

88-03 Delinquent Inservice Test (IST) of Containment
Emergency Cooling Subsystem Valve due to Inadequate
Administrative Controls

No violations or deviations were identified in this area during the inspection.

9. Followup of Previously Identified Items (92701)

a. (Closed) Open Item (50-206/87-14-01) Boric Acid Leakage on Safety Injection Bypass Valves Packing (Unit 1)

During a previous inspection, the inspector found that the packing of safety injection bypass valve MOV358 continued to leak after the mid-cycle outage in June, 1987. This resulted in boric acid crystal accumulation on safety related cable trays under the valve. Other instances of packing leaks on RCS valves were also found. The licensee cleaned up the boric acid and committed to identify actions to preclude continued packing leakage from safety injection bypass valves.

During this inspection, the inspector toured the containment while the Unit was in Mode 5 and noted that packing leakage problems had improved. In particular, the licensee had initiated a boric acid task force to address the long term solution to the packing leakage. This item is closed.

b. (Closed) Open Item (50-206/87-24-01) Momentary Loss of Containment Integrity (Unit 1)

Summary

On August 25, 1987, while the Unit was at power, an HP technician entered the containment for a brief inspection. The inner hatch door was left open to expedite exit, as permitted by the applicable station procedure. As the hatch operator closed the inner door to prepare opening the outer door, the drive chain of the inner door broke and left the door in an open position. Since he was operating the doors from outside the outer door, he was unaware of the situation and proceeded to open the outer door. This resulted in the simultaneous opening of both doors. In addition, the alarm in the control room did not annunciate when both doors were open. The licensee repaired the broken chain and committed to strengthen procedures to minimize recurrence, troubleshoot the alarm anomaly, and replace worn out parts during the next outage.

During this inspection period, the licensee replaced the worn drive chain and swing rod and completed troubleshooting of the alarm problem. The licensee found that the limit switch on the inner door hinge (for detecting actual door position) had failed open. Accordingly, when the door was open, the switch did not close to complete the alarm logic with the closed outer door limit switch.

The licensee replaced the defective switch and ordered an improved as-built drawing of the alarm circuit.

This item is closed.

- c. (Closed) Open Item (50-206/87-24-03) Piping and Instrument Diagram (P&ID) Update

During a previous inspection, the inspector found that some of the plant P&IDs were not promptly updated to reflect field changes. During subsequent discussions with the QA organization, the licensee stated that similar deficiencies had been identified during QA surveillances and audits. The responsible organization acknowledged the QA findings and expedited drawing updates. The backlog of non-updated drawings has been corrected. This item is closed.

- d. (Closed) Violation (50-361/87-31-03) Failure to Submit Report as Required by 10 CFR 50.73 for Inoperable Steam Generator Code Safety Valves

The inspector reviewed the licensee's response and corrective actions to address this violation with the Assistant Technical Manager. The licensee could not determine why a report had not been issued for the inoperable steam generator code safety valves, although it appeared that this condition occurred as the result of an administrative error. The licensee's corrective actions, which were documented in a letter dated March 25, 1988, responding to the Notice of Violation, appeared to be adequate. This item is closed.

- e. (Closed) Open Item (50-362/86-31-01) Resolution of Deficient Conditions Prior to Unit Startup Following a Refueling Outage

The inspector reviewed with the Deputy Station Manager the licensee's program for identification and resolution of deficient plant conditions prior to unit startup following a refueling outage. The licensee appeared to have a good program for prioritizing outstanding work items and for tracking resolution of these items prior to startup. However, the inspector noted that the extent of management participation in conducting final reviews prior to reactor startup following the refueling outage appeared to be somewhat informal. The Deputy Station Manager agreed to evaluate the need for additional controls, in this regard. This item is closed.

- f. (Open) Open Item (50-362/87-15-01) Adequacy of Calibration of Flow Instruments

The cognizant technical supervisor discussed with the inspector actions that were taken to resolve this item. An extensive evaluation had been completed to address this item, and the licensee concluded that calibration of the flow transmitters in question should include a static alignment check during initial installation and at other times, as deemed appropriate by the I&C supervisor. When the inspector questioned the basis for not performing a static

alignment check on these transmitters on a refueling interval calibration frequency, the engineering supervisor could not provide a basis and stated that additional review was needed. This item remains open.

g. (Open) Open Item (50-362/87-22-02) Suction Pressure Fluctuations Associated with Charging Pump 3P-192

While performing the engineered safety features system walkdown discussed in paragraph 6 of this report, the inspector observed that charging pump 3P-192 suction pressure was oscillating between 40 and 60 psig. The inspector discussed this observation with the Control Room Supervisor (CRS) who stated that the matter had been referred to Station Technical for resolution. In discussing this matter further with the CRS, it appeared that this condition had existed for several weeks and Station Technical was not being responsive in resolving this condition. The inspector's observation also indicated that the technical evaluation that had been performed previously was incomplete. The inspector discussed these observations with the Technical Manager. This item remains open.

h. (Closed) Open Item (50-362/88-03-01) Adequacy of Post Trip Review

The Station Technical Manager reviewed the specific weaknesses involved with this item and stated that appropriate improvements would be made to the post trip review process. An additional aspect of this item involved the inconclusive nature of the 1/M plot that was performed during a Unit 3 reactor startup. The licensee determined that the 1/M plot was not performed properly, in that the inverse count rate ratio was not calculated correctly. Although the Shift Technical Advisor had performed this calculation properly on many previous occasions, he did not recognize that his calculations were in error during this reactor startup. During the most recent Unit 2 startup, conducted on April 4, 1988, the inspector observed that two separate 1/M plots were performed and both were performed properly. This item is closed.

i. (Closed) Followup Item (50-206/88-03-06) AFW Backup Nitrogen System Leakage Test

During a previous inspection, the inspector noted that the licensee had not performed a leakage test on backup nitrogen system check valves associated with the auxiliary feedwater system. The licensee performed leakage testing on these check valves during this inspection period. The inspector witnessed this testing and confirmed satisfactory valve leakage performance. The licensee was revising the valve test program to ensure periodic testing of all safety related nitrogen system check valves. This item is closed.

10. Exit Meeting (30703)

On April 8, 1988 an exit meeting was conducted with the licensee representatives identified in Paragraph 1. The inspectors summarized the

inspection scope and findings as described in the Results section of this report.

The licensee acknowledged the inspection findings and noted that appropriate corrective actions would be implemented where warranted. The licensee did not identify as proprietary any of the information provided to or reviewed by the inspectors during this inspection.