APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-498/90-09 Operating License: NPF-76
50-499/90-09 NPF-80

Dockets: 50-498
50-499

Licensee: Houston Lighting & Power Company (HL&P)
P.O. Box 1700
Houston, Texas 77251

Facility Name: South Texas Project (STP), Units 1 and 2

Inspection At: STP, Matagorda County, Texas

Inspection Conducted: March 1-31, 1990

Inspectors: J. I. Tapia, Senior Resident Inspector, Project Section D
Division of Reactor Projects

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Approved: D. Persinko, Acting Chief, Project Section D
Division of Reactor Projects — 4/6/90 Date

Inspection Summary

Inspection Conducted March 1-31, 1990 (Report 50-498/90-09; 50-499/90-09)

Areas Inspected: Routine, unannounced inspection included plant status, onsite followup of events, operational safety verification, monthly maintenance observations, monthly surveillance observations, preparation for refueling, and spent fuel pool activities.

Results: Within the areas inspected, one noncited violation was identified. The violation involved the failure to follow a safety-related procedure (paragraph 8). A walkdown of the Unit 1 Diesel Generator No. 12 support systems was performed and all components were noted to be in positions required to support plant operation (paragraph 4). Four maintenance tasks were observed with no violations identified (paragraph 5). Three surveillance tasks were observed with no violations identified (paragraph 6). An inspection of preparation for refueling activities for Unit 1 was performed with no concerns identified (paragraph 7). Selected spent fuel pool activities were inspected prior to Unit 1 refueling, with one noncited violation being identified (paragraph 8).

DETAILS

1. Persons Contacted

*W. H. Kinsey, Plant Manager
*R. W. Chewning, Vice President, Nuclear Support
*A. C. McIntyre, Manager, Support Engineer
*W. J. Jump, Maintenance Manager
*G. L. Parkey, Manager, Integrated Planning and Scheduling
*J. R. Lovell, Technical Services Manager
*J. W. Loesch, Plant Operations Manager
*V. A. Simonis, Plant Operations Support Manager
*K. J. Christian, Unit 1 Operations Manager
*L. G. Weldon, Operations Training Manager
*T. J. Jordan, General Manager, Nuclear Assurance
*J. T. Minor, Manager, Construction Engineering
*S. M. Shrophsire, Owner Representative, CP&L
*A. W. Harrison, Supervising Licensing Engineer
*C. G. Walker, Manager, Public Information
*C. A. Ayala, Supervising Licensing Engineer
*D. J. Denver, Manager, Plant Engineering
*M. R. Wisenburg, General Manager, Assessments
*J. D. Bumgardner, Work Control Center Manager
*A. K. Khosla, Senior Licensing Engineer

In addition to the above, the inspectors also held discussions with various licensee, architect engineer (AE), maintenance, and other contractor personnel during this inspection.

*Denotes those individuals attending the exit interview conducted on March 30, 1990.

2. Plant Status

Unit 1 began this inspection period at 100 percent reactor thermal power. On March 29, 1990, the unit experienced a reactor trip on low steam generator level (see the following paragraph for additional details). The licensee elected to begin the second refueling outage the following day on March 30, 1990. The original schedule for the outage commencement was April 6, 1990. At the close of this inspection period, the licensee was initiating reactor cooldown in preparation for the outage.

Unit 2 began this inspection period at 100 percent reactor thermal power. On March 26, 1990, the unit experienced a reactor trip on low steam generator level (see the following paragraph for additional details). At the end of this inspection period, Unit 2 remained in Mode 3 (Hot Standby) awaiting completion of repairs to the valve that was the source of the trip.

3. Onsite Followup of Events at Operating Power Reactors (93702)

On March 26, 1990, at 7:23 a.m., Unit 2 tripped from 100 percent power when Steam Generator 2C level went low. The initial main control board alarm which actuated indicated a mismatch between main feedwater and steam flow. The level in Steam Generator 2C was noted by plant operators to be decreasing. Attempts were made to increase feedwater flow in order to restore level but were unsuccessful. When unable to restore feedwater flow with decreasing level in the steam generator, the unit supervisor ordered a manual reactor trip. Subsequent posttrip review disclosed that the reactor actually tripped on Steam Generator 2C low-low level. As a result of the reactor trip, auxiliary feedwater actuated and a main feedwater isolation occurred, as expected. The plant was successfully stabilized in Mode 3 (Hot Standby).

Subsequent investigation of the cause of the trip was initiated by verifying that the feedwater regulating valve control loop and valve positioner were functioning properly. After this was verified, the licensee concentrated on determining the status of the feedwater regulating valve internals. After radiography of the valve was inconclusive, the plant was brought to a condition which allowed disassembly of the valve. Inspection of the valve stem to valve plug connection disclosed that this connection had failed. This valve is a Copes-Vulcan Model No. D-100-160 valve. The failure was attributed to shearing of the pin that aligns the stem to the plug after that threaded connection has been torqued to 54 pounds. The licensee elected to disassemble and inspect the three remaining feedwater regulating valve disc internals. No indications of impending failure were identified. A review of the history of the failed valve disclosed that this valve had been obtained from another nuclear plant and that the valve had been reworked at that plant. Since the other three valves inspected did not show any signs of distress, it was determined by the licensee that the reassembly of the valve stem to plug connection was inadequate and that this led to its failure. Regardless, the licensee consulted with Westinghouse and Copes-Vulcan representatives and elected to implement a modification to install a circumferential fillet weld at the stem-to-plug interface. These modifications were ongoing on Unit 2 at the close of this inspection period. The Unit 1 valves will also receive the modification during the ongoing refueling outage.

On March 29, 1990, at 2:30 p.m., Unit 1 tripped due to low-low level on Steam Generator C. The event initiated when Feedwater Booster Pump No. 11 tripped due to a ground fault. Tripping of Feedwater Booster Pump No. 11 caused Feedwater Booster Pump No. 13 to autostart, but its recirculation valve remained open which led to a decrease in feedwater header pressure. The main turbine was manually run back, but No. 12 main feedwater pump tripped on a low suction signal. This occurred before the startup feed pump could supply sufficient feedwater to Steam Generator 1C to maintain its level. Steam Generator 1C level decreased to the low-low setpoint and this led to a reactor trip. A feedwater isolation and auxiliary feedwater actuation occurred as expected, but Feedwater Isolation Valves A and D did not automatically close immediately. Both valves were declared inoperable.

Subsequent troubleshooting was performed to determine the cause of the event. The failure of Feedwater Booster Pump No. 11 is suspected as having resulted from the heavy rains which occurred over the site during the event. In the past, this pump has tripped due to moisture intrusion. The licensee had implemented modifications to alleviate the problem. The licensee is evaluating those modifications in light of the suspected recurrence. At the close of this inspection period, the licensee had not determined a definite cause for the pump failure and continued to perform troubleshooting to that end. Troubleshooting of the feedwater isolation valves disclosed that the solenoid valves, which port the hydraulic fluid and allow the air operator to close the isolation valve, were contaminated with a green crystalline material. This material prevented the proper operation of the solenoid valves and thus prevented proper closing of the feedwater isolation valves. Samples were taken and analyzed to be a polyphosphate compound which was generated from the breakdown of the Fyrquel 150 hydraulic fluid. Discussions were held with the manufacturer of the Fyrquel 150 hydraulic fluid, and it was learned that this fluid begins to degrade when exposed to temperatures greater than 150°F for extended periods. The valves had been environmentally qualified to 120°F, however, the actual temperature of the solenoid body was determined by measurement to be higher than this. A reasonable calculation of the internal temperature of the solenoid valve was performed and resulted in an expected internal temperature of about 200°F. This analysis was then used as a basis for the decision to discontinue the use of the Fryquel 150. The licensee has elected to use Fryquel-GT, a hydraulic fluid which is stable at elevated temperatures. In addition, the licensee has decided to replace all eight solenoids with new ones. This work was ongoing at the end of this inspection period.

4. Operational Safety Verification (71707)

The purpose of this inspection was to ensure that the facility was being operated safely and in conformance with licensee and regulatory requirements. This inspection also included verifying that selected activities of the licensee's radiological protection program were being implemented in conformance with requirements and procedures, and that the licensee was in compliance with its approved physical security plan.

The inspectors visited the control rooms on a routine basis and verified that control room staffing, operator decorum, shift turnover, adherence to TS limiting conditions of operation (LCO), and overall control room decorum were in accordance with requirements. The inspectors conducted tours in various locations of the plant to observe work operations and to ensure that the facility was being operated safely and in conformance with license and regulatory requirements.

The Diesel Generator (DG) No. 12 support systems were inspected to verify the operability and status of the systems. The inspection included comparison of as-found control switch, power supply breaker, and valve positions to those required by the operating procedure. A comparison of the operating procedure (1POP02-DG-0002, "Emergency DG #12," Revision 8)

to design documents, including piping and instrument diagrams (P&ID), was also performed. The support systems inspected included starting and control air (SD), lube oil (LU), jacket and cooling water (JW), fuel oil (FO), and intake and exhaust air (DI) subsystems.

Items noted during the technical review of the procedure included:

- P&ID errors were observed, including: (1) Valve 1-JW-0015 was a locked shut valve that was not designated as LC (locked closed) on P&ID 5Q159F00060 No. 1, Revision 12; (2) P&ID 5Q159F00060 No. 1 identified nonsafety-related Valve 1-JW-0002 as safety-related; (3) several vendor supplied skid valves were noted to be listed in the valve checklist but were not shown on the P&IDs, including eight LU system instrument root valves; (4) Valve 1-LU-0149 was a normally closed valve that was shown as normally open on P&ID 5Q159F22542 No. 1, Revision 4; (5) several instrument connections to the system piping were incorrectly drawn on P&ID 5Q159F22542 No. 1; (6) Valve 1-LU-0312 was a normally shut valve that was incorrectly shown as normally open on P&ID 5Q159F22542 No. 1; (7) Valve 1-DW-0908 was a normally open valve that was shown as a normally closed valve on P&ID 5Q159F00060 No. 1; (8) Valve 1-JW-0002 was shown normally closed on P&ID 5Q159F00060 No. 1 and normally open on P&ID 5Q159F22540 No. 1, Revision 4; (9) Valve 1-DO-3016 was incorrectly labelled 1-DO-0058 on P&ID 5Q159F00045 No. 1, Revision 14; and (10) Valves 1-DO-3283 and 1-DO-3280 were incorrectly labelled 1-DO-3008 and 1-DO-3009 on Vendor P&ID 4041-00103-BCE.

- Step 5.7.2.2 instructed operators to verify starting air pressure using a pressure indicator located on Local Panel ZLP-104. Step 5.7.2.2 contained typographical errors that directed the operator to the wrong indicator.

- In Valve Lineup Procedure 1POP02-DG-0002-1, the following items were noted: (1) Valve 1-JW-0015 was a locked closed valve but was only required to be closed (not locked) per the valve lineup, (2) Valves 1-DO-3021 and 3020 were labelled 1-SD-3021 and 1-SD-3020 in the valve lineup, (3) Valve 1-SD-3238 was labelled 1-DI-3238 in the valve lineup, and (4) the location of 1-DI-3004 in the valve lineup was incorrect.

Items noted during the walkdown of the system using the operating procedure and P&IDs included:

- Housekeeping was being maintained by the licensee, however, an empty food container (raisin box) was found inside the DG No. 12 building. The area was classified as Zone IV (eating, drinking, smoking prohibited).

- Several items were noted to be missing from Procedure 1POP02-DG-0002 checklists: (1) the standby fuel oil pump starter switch located at Panel N1DODC0502 was missing from the electrical lineup;

(2) Valve 1-LU-3133, the LU filter drain valve, was missing from the valve lineup; and (3) the isolation valve (no identification number existed for this valve) for Instrument 1-LU-PDISH-5590 was missing from the valve lineup. All three items listed above were found in the correct positions to support DG No. 12 operation.

- Meter N1DO-LI-9111A, DG No. 12 FO storage tank level indicator, was missing the engineering units (%) on the meter scale at Local Panel ZLP-104.

- Ten valves were observed to be missing identification tags in the DG No. 12 room: 1-SD-3317, 1-SD-3318, 1-SD-3038, 1-SD-3160, 1-SD-3181, 1-JW-3034, 1-DO-3253, 1-DO-3256, 1-DO-3271, and 1-LU-3142.

- Step 5.5 of 1POP02-DG-0002 instructed operators to verify adequate oil level in the speed control governor and overspeed governor sight glass. The wording of Step 5.5 implied that only one sight glass existed, but there were actually two sight glasses.

- The vendor manual recommended verifying that the starting air in-line filter sight glasses did not contain water (verify that the starting air was dry). Additionally, both air dryers had moisture indicators containing blue dryer desiccant to allow for monitoring water content in the starting air. The operating procedure did not reference these moisture indicators, however, the licensee determined that these checks were not required as part of the operating instructions.

- Step 5.21 stated "ensure jacket water standpipe level is within operating range." The as-found level was below the established range but was within the high and low level alarm setpoints. Per discussions with a plant operator, the level was kept low to allow for startup surges and thermal expansion of the water. The procedure should have specified a range in inches. Additionally, the local gauge was noted to have handwritten marks on the standpipe adjacent to the gauge identifying critical levels such as high and low level alarm setpoints.

- Two valves were labelled 1-LU-3133, lube oil (LO) filter drain valves. One of the two valves was actually Valve 1-LU-0149 and was mislabelled.

- The DG No. 12 building thermostat settings were inspected. The six nonsafety-related space heater thermostats should have been set at 55°F. None were found at the correct setpoint. The setpoints were observed to vary between 5 and 25°F from the required setpoint.

All components were found to be in the correct position necessary to support DG No. 12 operations. None of the items listed above had an immediate impact on safe operation of the plant. All observations were reported to the licensee for inclusion in the licensee's program for procedure upgrade. The licensee was aware of the P&ID errors and was in

the process of revising all DG-related P&IDs during the inspection period. The procedure and P&ID upgrade program for the DGs will include: (1) a walkdown of the P&IDs, (2) revising the P&IDs to agree with the as-built conditions in the plant, (3) retagging components as necessary in the plant, and (4) updating or revising the procedures as required.

During the inspection period, a walkdown of the Unit 1 isolation valve cubicle (IVC) building was performed. Sand was observed in the rooms housing the auxiliary feedwater pumps. The source of the sand was from work crews sand-blasting the Unit 1 building exteriors. The sand entered the rooms through openings in the roofline where the vertical walls meet the roof. These openings are designed to relieve pressure during the unlikely event of high pressure line break in the IVC. A second potential entry path for sand was through the IVC ventilation system. The building ventilation ductwork did not have filters in the supply or exhaust flow paths. The sand buildup was reported to the Unit 1 control room, which initiated corrective actions. The sand has since been cleaned up.

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

5. Monthly Maintenance Observations (62703)

Selected maintenance activities were observed to verify whether the activities were being conducted in accordance with approved procedures. The activities observed included:

- Preventive Maintenance (PM) IC-2-HF-89003009, Calibration Check of the Supply Air Engineered Safety Feature (ESF) Pumps Cooler VAH005 Temperature Switch

- PM IC-2-CS-89003108, Calibration Check of Containment Spray Pump B Discharge Pressure Gauge

- PM's EM-0-FP-86010178, EM-0-FP-86010175, and EM-0-FP-86010177, Weekly Test and Inspection of Diesel Fire Pump Batteries

- PM EM-1-CC-86015146, Inspection, Test, and Lubrication of Component Cooling Water System Valve B1-CC-MOV-0132

The inspector verified that the activities were conducted in accordance with work instructions and procedures, test equipment was within the current calibration cycles, and that housekeeping was being maintained in an acceptable manner. All observations made were reported to the licensee for appropriate action.

PM IC-2-HF-89003009 was performed by instrumentation and control (I&C) technicians on Temperature Switch N2-HF-TSHH-9527A. The technicians also performed Procedure OPMP08-ZI-0011, "Generic Temperature Switch Calibration," Revision 6, on the temperature switch. During the performance of the calibration check, the as-found trip and reset values

were noted to be out of the acceptance criteria tolerance range. The technicians then readjusted the switch setpoint and the as-left values were observed to be within the required limits. A review of the procedure, the PM documentation, and the final data package was performed. No concerns were identified.

PM IC-2-CS-89003108 was performed by I&C technicians on Pressure Indicator N2-CS-PI-0826. The technicians also performed Procedure OPMP08-ZI-0203, "Pressure or Differential Pressure Indicator Calibration," Revision 5, on the indicator. Step 7.3.2 instructed the technicians to apply input values and record the as-found values displayed on the indicator. The as-found values were recorded, but one value measured and recorded was apparently erroneous (24 psig higher than expected). The test gauge was disconnected from the pressure indicator being tested, the test rig was reconnected and vented, and the indicator was retested per Step 7.3.2. A review of the procedure, PM, and data sheets was performed. No mention was made in the REMARKS section of the procedure data package that Step 7.3.2 was performed twice or that the first set of data recordings was discarded. Additionally, Section IX of the PM (titled: "Action by Persons Performing the PM Activity") made no mention of the dual performance of Step 7.3.2. Step 5.5.2.1.c of Procedure OPMP02-ZG-0006, "Work Implementation," Revision 1, stated that craftsmen shall record a chronological summary of work in Section IX of the PM during performance of PM. The technicians should have noted the reperformance of Step 7.3.2 in the PM or data package. However, a safety concern never existed. The containment spray pump discharge pressure indicator was classified as nonsafety-related and as-left data was noted to be within acceptance criteria limits.

PMs EM-0-FP-86010178, EM-0-FP-86010175, and EM-0-FP-86010177 were performed by electrical technicians on Diesel Fire Pump Batteries 1, 2, and 3, respectively. Work activities include battery voltage measurements, cell electrolyte level checks, battery charger voltage and current checks, and inspection for corrosion or damage. The inspection included observations of housekeeping and building ventilation instrumentation setpoint checks. The following items were noted:

- Located in the fire pump house were seven nonsafety-related area space heaters. The heater thermostats were supposed to be set at 50°F, but the as-found settings varied between 59°F and 80°F. During the inspection, ambient air temperatures were above 50°F, therefore, the incorrect space heater settings had no effect on building temperature.

- Fire Pump House Temperature Indicating Controller NO-HZ-TIC-9191 was supposed to be set at 95°F, but the controller was found to be set at 74°F in the fire pump house. The incorrectly set controller had no safety or operability significance because the HVAC system was designed to maintain building temperature between 50 and 95°F.

- The inspector noted that housekeeping in the fire pump house was being maintained by the licensee in an acceptable manner (a previous inspection had identified housekeeping concerns).

Water was found in the well surrounding Diesel Fire Pump Battery 2. The source of the water was seal water leakage from the fire pump. The technicians cleaned up the water in the battery well and made a comment about the water in the PM package. Later in the inspection period, Fire Pump 2 was observed operating and leaking seal water. The water leakage filled the well to the top of the dike (the battery terminals were located above the top of the dike). Also, standing water was observed on top of two of four batteries. The potential existed where the water could have shorted out the batteries, rendering the fire pump inoperable. This condition was reported to the shift supervisor who initiated corrective actions.

PM EM-1-CC-86015146 was performed by electrical technicians on the Train B Main Common Header Valve B1-CC-MOV-0132. The technicians also performed Procedure OPMP05-ZE-0300, "Limitorque MOV Motor Inspection and Lube," Revision 9, on the motor operated valve (MOV). The following items were noted during the review of the Procedure OPMP05-ZE-0300:

- Step 6.7.1.4, at the bottom of page 14, instructed technicians to fill the gearbox with grease if the grease level was low. A caution statement warning about overfilling the gearbox with grease was located after the step and on top of page 15. The caution statement should have been before the step, not after.

- Step 6.12.2 provided instructions that if diagnostic testing could not be performed on the MOV, an explanation was supposed to be added to the remarks section of the governing document (the PM). A review of the PM and procedure data package was performed. There were no remarks added as required by Step 6.12.2. A technical review by the licensee also identified the error and the work package was resubmitted to the work foreman for corrections.

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

6. Monthly Surveillance Observations (61726)

Selected surveillance activities were observed to ascertain whether the surveillance of safety significant systems and components was being conducted in accordance with TS and other requirements. The following surveillance tests were observed and the documents reviewed:

- 2PSP02-MS-0546, "Steam Pressure Loop 4 Set 3 ACOT (Analog Channel Operational Test)," Revision 2

- 2PSP02-RC-0457, "Pressurizer Pressure Set 3 ACOT," Revision 0

- 2PSP02-RC-0440, "Delta T and T Average Loop 4 Set 4 ACOT," Revision 0

Specific items inspected included verifying that the as-left data was within acceptance criteria limits, the acceptance criteria as listed in the procedures agreed with values listed in design documents, and the test equipment used was within its current calibration cycle. Concurrent with observation by the NRC inspector of the surveillance activities, the procedures were reviewed for technical accuracy and for conformance to TS requirements. All surveillance activities observed were performed by I&C technicians in conformance with procedure requirements and in a professional manner.

Procedure 2PSP02-MS-0546 was performed to verify the accuracies of the Train B steam line pressure alarms and trip functions. Procedure 2PSP02-RC-0457 was performed to verify the accuracies of the Train B pressurizer pressure alarms and trip functions. No specific concerns were identified with these procedures nor with the work observed.

Procedure 2PSP02-RC-0440 was performed to verify the accuracies of the Train C reactor coolant differential temperature and average temperature alarms and trip setpoints. The procedure was performed by a technician performing on-the-job training under the supervision of a more qualified technician. Step 7.5.6.d instructed the technician to connect a decade resistor to a test jack on Card P04-0822. The step referred the technician to the Procedure's Addendum 1 for details on how to perform the connection. The Step 7.5.6.d and Addendum 1 apparently did not provide clear and detailed instructions and this led the trainee technician to connect the wires incorrectly. The test was halted and the connections were reviewed. After further review and discussion, the connections were removed and reconnected correctly and the testing continued. The lead technician made a note to review the step to determine if the procedure should be revised to provide clearer and more detailed instructions on how to perform the connection.

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

7. Preparation For Refueling (60705)

A review was conducted of the outage scope for the Unit 1 second refueling outage which was scheduled to begin on April 7 but actually began on March 30, 1990. The review also assessed the adequacy of the licensee's administrative requirements for control of refueling operations and for control of plant conditions during the refueling. It was determined that the licensee has established the following:

- Shift manning requirements

- Requirements for training and qualification of key personnel

- Quality assurance/quality control requirements
- Communications requirements
- Requirements for equipment checkout, dry runs of critical operations, and fuel handling
- Shutdown margin and reactivity monitoring
- Radiation monitoring
- Water level control
- Decay heat removal
- Containment integrity

The scope of the outage was reviewed and found to include the following:

- Reactor Refueling - will include utilization of a rapid refueling method of reactor disassembly and reassembly, complete core off-load and on-load, and fuel inspections.
- Reactor Coolant Pump and Motor Inspection and Maintenance - will include inspection of Pump A and D seals and investigation and repair of grounding problem on B and C motors.
- Low Pressure Turbine Warranty Inspection - will include disassembly of Nos. 11 and 12 turbines for inspections and repairs as required. During the turbine disassembly, associated turbine equipment and systems will be inspected and repaired as identified.
- Modification of Main Steam Throttle and Governor Valves - will include disassembly, inspection and modification of the two turbine throttle valves and two turbine governor valves.
- Circulating Water/Open Loop Cooling Repairs - will include pipe and valve repairs, condenser tube cleaning and repair, and completion of CW Pump No. 11 pump and piping.
- Elimination of Excess Cooldown Circuitry - will include removal of associated logic circuitry, indications, and alarms from the solid state protection and process control systems.
- Motor Operated Valve Actuation Testing (MOVATS) - will include static and dynamic testing of 48 MOVs.

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

8. Spent Fuel Pool Activities (86700)

Selected Unit 1 spent fuel pool activities were observed to ascertain whether the activities were in conformance with the requirements of TS and approved procedures. Items specifically inspected included: (1) ensuring the spent fuel pool was the proper temperature and level, (2) the pool chemistry was within specified limits, (3) the fuel handling building (FHB) ventilation system was operable, and (4) the spent fuel pool cooling and cleanup system was in service and the system valves, switches, and power supplies were in the correct positions. The inspection was performed to ensure the pool was ready for core offload prior to the Unit 1 second refueling outage.

Key spent fuel pool parameters verified included:

- The pool water level was higher than the minimum level allowed by TS 3.9.11.1. The as-found level was 66.7 feet. The minimum level allowed is an administrative limit of 62 feet.

- The pool temperature was lower than the maximum level allowed by FSAR Table 9.1-1. The as-found temperature was 74°F. The maximum allowed temperature is 140°F.

- The pool chemistry was being maintained within the limits of TS 3.9.1 and Procedure OPGP03-ZO-0012, "Plant Chemistry Specifications," Revision 3. Boron concentration (as-found value of 2551 ppm) was above the minimum limit of 2500 ppm. Additionally, chloride, fluoride, and specific activity parameters were also below procedural limits.

The FHB heating, ventilation, and air conditioning (HVAC) system was inspected for operability to ensure that the system was maintaining the building at the specified negative pressure. The safety-related portion of the system (Exhaust System) was found operable, however, the nonsafety-related portion of the system was not maintaining the FHB at the desired differential pressure. Nonsafety-related Controller N1-HF-PDIC-9548 was correctly set at 0.200 inches water column (wc), but actual FHB inside/outside differential pressure was noted to be cycling between 0.23 to 0.29 inches wc. The FHB HVAC Supply Air Flow Controller N1-HF-FIC-9501 was found to be oscillating in setpoint value at Local Control Panel ZLP-108. The cycling of the controller was causing variations in building differential pressure. This condition was reported to the unit supervisor who initiated corrective actions.

The spent fuel pool cooling and cleanup system (FC) was walked down to ensure that the system components were in the correct positions to support the spent fuel pool. The FC system was compared to Operating Procedure Electrical Checklist 1POP02-FC-0001-2 and Valve Checklist 1POP02-FC-0001-1 (Revision 5). Additionally, the checklists were compared to the system P&IDs to ensure that the checklists agreed with the P&ID required positions. All components were found to be in the correct positions to support the spent fuel pool cooling and cleanup system.

Items observed during the P&ID review and walkdown of the FC system included:

- Nonsafety-related Valve N1-ED-0372 was the root valve for Cask Pool Water Level Indicator N1-ED-LI-8102. The valve was shown on the FC system P&ID 5R219F05028 No. 1, Revision 12. The valve was not listed in the FC system valve checklist or in any other procedural checklist. The cask pod has not been used by the licensee.

- Four safety-related valves that were required to be locked open (LO), or locked in place (LIP) were noted not to be locked. The wire cables were hanging on the valves but the cables were not locked. The valves (Spent Fuel Pool Heat Exchanger Discharge Isolation Valves 1-FC-0012A and 1-FC-0012B and Spent Fuel Pool Purification Loop Return Valves 1-FC-0016A and 1-FC-0016B) were listed in the locked valve program procedure as administratively locked valves. The locked valve program was described in Procedure OPGP03-ZO-0027, "Locked Valve Program," Revision 7. The four valves were listed in Procedure Checklist OPGP03-ZO-0027-08, "Unit 1 and Common Administrative Valves." The valves were required to be seal locked (key lock not required) as a good engineering practice. These valves were reported to the unit supervisor who initiated corrective actions. During a followup review, the licensee stated that one of the four valves (1-FC-0016A) had an outstanding work request against the valve. The other three valves did not have work requests outstanding against them.

The failure to have Valves 1-FC-0012A, 1-FC-0012B, and 1-FC-0016B locked as required by an approved Procedure Checklist OPGP03-ZO-0027-8 is a failure to follow an approved procedure. The failure to follow procedures is an apparent violation of TS 6.8.1 (498;499/9009-01). This apparent violation of TS is not being cited because it meets the criteria established in Section V.A of the general statement of policy and procedure for NRC enforcement actions. The missing seal locks had no effect on system operability and the licensee replaced the missing seals when informed of the situation.

9. Exit Interview

The inspectors met with licensee representatives (denoted in paragraph 1) on March 30, 1990. The inspectors summarized the scope and findings of the inspection. The licensee did not identify as proprietary any of the information provided to, or reviewed by, the inspectors.