UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

April 25, 2000

William T. Cottle, President and
Chief Executive Officer
STP Nuclear Operating Company
P.O. Box 289
Wadsworth, Texas 77483

SUBJECT: NRC INSPECTION REPORT NO. 50-498/00-05; 50-499/00-05

Dear Mr. Cottle:

This refers to the inspection conducted on February 13 through April 1, 2000, at the South Texas Project Electric Generating Station, Units 1 and 2, facility. The enclosed report presents the results of this inspection.

During the 7-week period covered by this inspection, your conduct of activities at the South Texas Project facility was generally characterized by safety-conscious operations, sound engineering and maintenance practices, and careful radiological work controls.

Based on the results of this inspection, the NRC has determined that three Severity Level IV violations of NRC requirements occurred. These violations are being treated as noncited violations (NCVs), consistent with Section VII.B.1.a of the Enforcement Policy. These NCVs are described in the subject inspection report. If you contest the violation or severity level of these NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 611 Ryan Plaza Drive, Suite 400, Arlington, Texas 76011; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the South Texas Project Electric Generating Station, Units 1 and 2, facility.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response, if requested, will be placed in the NRC Public Document Room (PDR).

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

/RA/

Joseph I. Tapia, Chief
Projects Branch A
Division of Reactor Projects

Docket Nos.: 50-498
50-499
License Nos.: NPF-76
NPF-80

Enclosure:
NRC Inspection Report No.
50-498/00-05; 50-499/00-05

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket Nos.:	50-498 50-499
License Nos.:	NPF-76 NPF-80
Report No.:	50-498/00-05 50-499/00-05
Licensee:	STP Nuclear Operating Company
Facility:	South Texas Project Electric Generating Station, Units 1 and 2
Location:	FM 521 - 8 miles west of Wadsworth Wadsworth, Texas 77483
Dates:	February 13 through April 1, 2000
Inspectors:	Neil F. O'Keefe, Senior Resident Inspector Gilbert L. Guerra, Resident Inspector
Approved By:	Joseph I. Tapia, Chief, Project Branch A

ATTACHMENT: Supplemental Information

EXECUTIVE SUMMARY

South Texas Project Electric Generating Station, Units 1 and 2
NRC Inspection Report No. 50-498/00-05; 50-499/00-05

This inspection report included aspects of licensee operations, maintenance, engineering, and plant support. The report covers a 7-week period of resident inspection.

Operations

- An unannounced fire drill in the operating unit was not properly controlled. A smoke generator was used to simulate a fire in the Unit 2 turbine building. The operator reporting the fire was not informed that it was a drill as it was initiated, and he reported it as a real fire. Unit 1 control room operators made a site-wide announcement of a real fire. This disrupted site activities for several minutes until the error could be corrected, as personnel responded from the outage unit (Section O1.1).

- During the Unit 1 shutdown for refueling, operators were observed to hesitate to depart from the power reduction plan not to borate when the observations of core behavior did not match core predictions. However, on-call reactor engineers were not contacted to resolve the discrepancy. The resulting delay in the power reduction was observed to create a sense of urgency to regain the schedule among the shift supervision. As a result, a recommendation by the reactor operator to reduce the power reduction rate in order to better control primary plant temperature was denied, even though temperature was briefly outside the control band (Section O1.2).

- Operators failed to recognize the full Technical Specification impact of removing the Train A battery from service. Without its associated battery as a backup power supply, the licensee was required to either declare two nuclear instruments inoperable or suspend positive reactivity additions. Neither was done, and rods were withdrawn 18 steps for rapid refueling operations. Failure to recognize and comply with the requirements of Technical Specifications 3.8.2.2 and 3.8.3.2 was a violation which will not be cited consistent with Section VII.B.1 of the NRC Enforcement Policy (Section O1.3).

- In October 1998, a Unit 2 core offload was commenced without the capability to fully inflate the reactor containment building personnel airlock door seals (Licensee Event Report 499/990004-00). This violation of Technical Specification 3.9.4 is being treated as a noncited violation, consistent with Section VII.B.1 of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as Condition Report 99-5066 (Section 08.4).

- On February 18, 2000, a misdiagnosis of a solid state protection system problem resulted in the failure to take appropriate actions within the Technical Specification allowed outage time (Licensee Event Report 498/00001-00). This violation of Technical Specification 3.3.2 is being treated as a noncited violation, consistent with Section VII.B.1 of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as Condition Report 00-2645 (Section O8.5).

Maintenance

- Performance during maintenance activities was mixed. The replacement of fuel handling building emergency filter bed charcoal demonstrated that workers were unfamiliar with the process, the procedure and equipment labeling were confusing, and supervision was inadequate. During the job, workers did not effectively contain charcoal dust, which ended up in a high efficiency filter (Section M1.1).

Engineering

No significant issues were identified in engineering.

Plant Support

- Chemistry provided good support to operations during the plant shutdown and cooldown. A crudburst was initiated and cleaned up per the Electric Power Research Institute guidelines following plant shutdown to minimize the source term. The licensee's program has been effective over the long-term in this regard. The outage chemistry supervisor monitored sample results and advised the shift supervisor on cleanup strategy and plant alignment. Reactor coolant degassing was conducted in accordance with Electric Power Research Institute guidelines and Technical Specifications. Chemistry provided a briefing to operators prior to degassing and coordinated the evolution (Section R1.1).

Report Details

Summary of Plant Status

Unit 1 started this inspection period at 100 percent power. The unit started coastdown operation on February 14 and was shut down on March 1. Unit 1 remained shut down for a planned refueling outage and steam generator replacement through the rest of the inspection period.

Unit 2 operated throughout the inspection period at 100 percent power.

I. Operations

O1 Conduct of Operations

O1.1 General Comments on Conduct of Operations (71707)

The inspectors used Inspection Procedure 71707 to conduct frequent reviews of ongoing plant operations. In general, the conduct of operations was focused and safety conscious. Specific comments and noteworthy events are discussed below.

During a Unit 1 log review, inspectors noted that, on February 16, operators entered Technical Specification 3.3.2, Action 20, to perform response time testing for a temperature detector in a reactor coolant loop. This action required tripping the associated bistable within one hour. No log entry was made for having completed the required action. The inspectors verified that the action was documented as completed in the work document, so no violation occurred. However this was considered lack of attention to detail in logging and supervisory review of completion of actions required by Technical Specifications.

On March 3, Steam Generator Feed Pump Turbine 21 tripped while Unit 2 was at 100 percent power. The startup feed pump was started promptly, so the pump trip resulted in a minor steam generator water level perturbation with no power change. The licensee determined that an operator assigned to reroute a drip catch in the feed pump housing bumped the manual trip mechanism due to the confined space inside the cubicle. The licensee verified that no other condition existed which could have tripped the turbine before testing it and returning it to service.

An unannounced fire drill was initiated on the evening of March 21 in the Unit 2 turbine building. A smoke generator was used to simulate the fire. As an unannounced drill, control room supervision in the affected unit were the only watchstanders informed before starting the drill. Drill controllers did not make it clear to the turbine building watchstanders that the smoke was part of a drill, so an operator reported the smoke as a real fire. Unit 1 control room personnel were the first to respond to the initial report of a fire; since they had not been made aware that a drill was to be conducted, they made a site-wide announcement of a report of a fire. Several minutes were required to straighten out the situation and correct the site announcements, during which time

outage personnel in Unit 1 began to respond to the announcement. This was considered an isolated example of poor control of a fire drill which had a minor impact on plant operations.

O1.2 Unit 1 Shutdown for Refueling

a. Inspection Scope (71707)

The inspectors observed control room briefings and operations associated with the plant shutdown on February 29 and March 1, 2000. The following procedures were also reviewed:

- 0POP03-ZG-0006. “Plant Shutdown From 100% to Hot Standby”
- 0POP03-ZG-0007, “Plant Cooldown”
- 0PSP10-DM-0003, “Automatic Multiple Rod Drop Time Measurement”

b. Observations and Findings

Inspectors observed the power reduction and reactor shutdown on February 29 through March 1. Operators did a good job briefing and conducting the shutdown. Operations were well supervised, in the control room and in the field. Peer checking was consistently performed. Reactivity manipulations were careful, controlled, and directly supervised by a senior reactor operator.

The inspectors observed that reactor engineering provided the operators with a prediction of reactivity controls and core response for the planned shutdown profile using the Beacon program. The prediction indicated that the shutdown could be done using control rod movement without the need to borate. Operators identified early in the power reduction that the prediction was not accurate. The evolution was requiring more control rod insertion than expected and produced a lower axial power than predicted. Operators performed small borations to improve axial power distribution and had frequent discussions about how to proceed. Reactor engineers were on call, but were not consulted about the discrepancies with the prediction. Condition Report 00-3432 was written to investigate the inaccuracy of core predictions.

The inspectors verified that axial power distribution limits were maintained during the power reduction, so no safety concern existed. However, the initial delays created a sense of urgency to get back on schedule. This was apparent when Tave briefly exceeded Tref by 2°F at one point. The reactor operator recommended reducing the turbine load reduction rate from 0.5 percent per minute to 0.25 percent per minute to assist in controlling the plant, but the unit supervisor and shift supervisor did not permit the change.

Reactor coolant degassing was observed to be awkward. The inspectors observed that this evolution was performed infrequently (end of cycle only, in most cases), so operators did not have much experience performing this procedure. The process was not intuitive and required close coordination among several people. The inspectors noted that the procedure did not compensate for the operators’ lack of experience.

Also, to conform to Electric Power Research Institute guidelines, the procedure must be performed during a plant shutdown at a time when the chemical and volume control system was also being used intermittently for reactivity control. This required even more coordination.

During rod drop testing, four rods did not fully insert. Condition Report 00-3429 documented the condition. All four rods were installed in standard fuel assemblies, which were an old design. The licensee planned to design all future cores so that standard fuel assemblies would not have control rods installed in them, which will eliminate this problem. Newer fuel designs were modified to avoid incomplete rod insertions. The testing was performed in a coordinated manner in accordance with Technical Specifications.

c. Conclusions

During the Unit 1 shutdown for refueling, operators were observed to hesitate to depart from the power reduction plan not to borate when the observations of core behavior did not match core predictions. However, on-call reactor engineers were not contacted to resolve the discrepancy. The resulting delay in the power reduction was observed to create a sense of urgency to regain the schedule among the shift supervision. As a result, a recommendation by the reactor operator to reduce the power reduction rate in order to better control primary plant temperature was denied, even though temperature was briefly outside the control band.

O1.3 Operators Fail to Recognize Operability Impact of Battery Outage

a. Inspection Scope (71707)

The inspectors discussed the issue with operations personnel and licensing engineers, and reviewed the control room logs, Technical Specifications, and outage schedule.

b. Observations and Findings

On March 1, shortly after shutting down Unit 1 for refueling, the licensee removed the Train A 125 Vdc battery from service.

Technical Specification 3.8.2.2, “D.C. Sources,” and Technical Specification 3.8.3.3, “Onsite Power Distribution - Shutdown,” required in part that, with the required power/distribution system inoperable, either declare associated supported required features inoperable or immediately initiate action to suspend certain activities, including operations involving positive reactivity changes. On March 2, the licensee withdrew control rods as part of rapid refueling rod holdout operations, which constituted positive reactivity manipulations.

On March 2, the licensee recognized that a requirement existed that source range and extended range nuclear instruments required a battery-backed power supply. When the Train A battery was removed from service, Source Range Nuclear Instrument 31 and Extended Range Nuclear Instrument 45 had normal power but no backup battery power.

This requirement had previously existed in Technical Specifications, but in Letter ST-HL-AE-4959 dated December 20, 1994, the licensee requested replacing the detailed requirements with more flexible wording that removed the detail. While the Technical Specification change was approved, the detailed wording was never moved to the Technical Specification bases or a station procedure.

The inspectors determined that, in previous outages, operators had complied with the Technical Specification requirements by suspending the specified operations. The battery outage was performed very early during this outage, when some of those operations would be required. The licensee had intended to declare the applicable equipment inoperable and comply with the individual action statements. As noted above, operators did not have documentation available to them that delineated the actual scope of the requirement.

The inspectors determined that the safety significance for this issue was low. At the time of the event, the reactor coolant system was borated to a refueling concentration, so adequate shutdown margin existed to prevent inadvertent criticality even with all control and shutdown rods fully withdrawn. During this period some control rods were withdrawn 18 steps and reinserted. The Train A nuclear instruments were receiving normal power and fully functional during this period. Also, the Train B and C engineered safety feature diesel generators and batteries were operable so that, in the event of a loss of offsite power, normal and battery backup power would have been available to one channel of each source-range and extended-range nuclear instrumentation to monitor the core.

When the licensee recognized the error, operators entered the applicable Technical Specification action statements and suspended positive reactivity additions. Condition Report 00-3341 was written to document the event and track corrective actions. The NRC was notified in accordance with License Condition 2.G for operation or condition prohibited by Technical Specifications.

Failure to recognize the impact of removing the Train A battery from service and complying with the required actions of Technical Specifications 3.8.2.2 and 3.8.3.2 was a violation. This nonrepetitive, licensee identified and corrected violation is being treated as a noncited violation, consistent with Section VII.B.1 of the NRC Enforcement Policy (NCV 498/0005-01).

c. Conclusions

Operators failed to recognize the full Technical Specification impact of removing the Train A battery from service. Without its associated battery as a backup power supply, the licensee was required to either declare two nuclear instruments inoperable or suspend positive reactivity additions. Neither was done, and rods were withdrawn 18 steps for rapid refueling operations. Failure to recognize and comply with the requirements of Technical Specifications 3.8.2.2 and 3.8.3.2 was a violation which will not be cited consistent with Section VII.B.1 of the NRC Enforcement Policy.

O2 Operational Status of Facilities and Equipment

O2.1 Engineered Safety Feature (ESF) Systems Walked Down (71707)

The inspectors used Inspection Procedure 71707 to walk down accessible portions of the following ESF systems:

- Essential Cooling Water, Train C (Unit 2)
- Fuel Handling Building Exhaust System (Unit 1)
- Auxiliary Feedwater System, all trains (Unit 2)
- Standby Diesel Generator 11 (Unit 1)

Equipment operability and material condition were acceptable in all cases. The inspectors verified that the systems were aligned properly for the existing mode of operation. The inspectors conducted daily control board walkdowns to verify that ESF systems were aligned as required by Technical Specification for the existing operating mode, that instrumentation was operating correctly, and that power was available.

O8 Miscellaneous Operations Issues (92700)

O8.1 (Closed) Licensee Event Report (LER) 498/98009-00: Improper calculation of containment average air temperature.

A temperature detector for an operating reactor containment fan cooler failed, so operators used a temperature detector associated with an idle fan to calculate containment average air temperature. The licensee later recognized that the temperature detectors in idle fan units did not reflect a temperature which was representative of the containment average air temperature. This was considered a minor issue since temperatures recorded by the remaining three operating fan units were at least 16°F below the Technical Specification limit.

O8.2 (Closed) LER 499/99006-00: Entry into Technical Specification 3.0.3.

Operators received an unexpected reactor pretrip alarm for Steam Generator 2D low-low water level. Per procedure, operators declared the channel inoperable and tripped the associated bistable. While evaluating the condition, the licensee identified that the cause might be due to a failed engineered safety feature actuation logic circuit, which would put the plant in a six hour shutdown action statement. To confirm that this was not the case, the licensee untripped the bistable for additional troubleshooting. This placed the plant in Technical Specification 3.0.3, which was reportable. Troubleshooting confirmed that the failure was not in the actuation logic. The system was repaired and restored. No significant issues were identified during the review of this issue.

O8.3 (Closed) LER 498/99007-00 and -01: Unit 1 Train B control room makeup and cleanup filtration system inoperable for greater than allowed outage time.

The inspectors determined that the licensee unnecessarily reported exceeding the

allowed outage time due solely to the delay in receiving sample results. The delay in receiving sample results was accounted for in the surveillance requirement and was not intended to be counted as part of the allowed outage time. Since the filter material was replaced within the time allowed by the limiting condition for operation, no violation occurred and the report was not required.

O8.4 (Closed) LER 499/99004-00: Power not available to enable closure of personnel air lock.

On October 8, 1998, during a Unit 2 outage, a temporary modification to provide a temporary power source for the reactor containment building personnel air lock was installed. The licensee identified that the modification did not include all components necessary to enable the door to be closed within 30 minutes as required by Technical Specification 3.9.4. Specifically, the seals for the doors could not be inflated. Core offload commenced while the door was in this condition, resulting in a violation. This was not considered to be safety significant because the doors could still be closed to block the majority of the opening, and the manually inflated seals would have been recognized as inoperable right away, allowing for some compensatory action. Corrective actions implemented included adding a reminder to outage notes that the air supply valves also need to have power supplied to them to maintain personnel air lock door seal availability, revising affected electrical prints, and discussing the event with affected plant personnel. These actions were tracked in the licensee's corrective action program under Condition Report 99-5066. This nonrepetitive, licensee identified and corrected violation is being treated as a noncited violation, consistent with Section VII.B.1 of the NRC Enforcement Policy (NCV 499/0005-02).

O8.5 (Closed) LER 498/00001-00: Solid state protection system problem misdiagnosed.

On February 18, 2000, control room operators received an alarm which indicated a problem with the solid state protection system. The alarm had 83 separate inputs. An instrumentation and control technician inspected the system and concluded that the backup power supply failed. This condition would not affect operability of the system, so it was treated as a routine work item. At the start of the next shift, another technician walked down the system as part of the work planning process and realized that the problem was a card failure associated with charging header low pressure function, which was an input for containment isolation logic for reactor coolant pump seal flow. Technical Specification 3.3.2 required that the applicable instrument channel be tripped within an hour. The issue was brought to the control room, and the Technical Specification actions were taken at that time. However, the licensee made a notification to the NRC Operations Center because the action was completed 8 hours 45 minutes after the condition was identified. This nonrepetitive, licensee identified and corrected violation is being treated as a noncited violation, consistent with Section VII.B.1 of the NRC Enforcement Policy (NCV 499/0005-03).

O8.6 (Closed) LER 498/00002-00: Operators did not recognize the full Technical Specification impact of removing the Train A battery from service.

As a result, actions were not taken relating to Source Range Nuclear Instrument 31 and Extended Range Nuclear Instrument 45. This was discussed in detail in Section O1.3 above.

II. Maintenance

M1 Conduct of Maintenance

M1.1 General Comments: Maintenance and Surveillance Observations

a. Inspection Scope (62707, 61726)

The inspectors observed all or portions of the following maintenance and surveillance activities. For surveillance tests, the procedures were reviewed and compared to the Technical Specification surveillance requirements and bases to ensure the procedures satisfied the requirements. Maintenance work was reviewed to ensure adequate work instructions were provided and that the work performed was within the scope of the authorized work and was adequately documented. Work practices were also observed and the inspectors held discussions with maintenance personnel and supervisors. In each case, the impact to equipment operability and applicable Technical Specifications actions were independently verified. Specific details of the observations are discussed below.

Surveillances Observed:

- 0TEP07-DG-0001, "Standby Diesel Generator Governor Upgrade Acceptance Test," Revision 3 (Unit 1)
- 0PSP11-SI-0014, Local Leak Rate Test of Low Head Safety Injection Pump 1B Discharge, Revision 6 (Unit 1)
- 0PSP03-AF-0007, "Auxiliary Feedwater Pump 24 Inservice Test," Revision 14 (Unit 2)
- 0POP07-DB-0005, "Technical Support Center Diesel Generator Performance Test," Revision 2 (Unit 2)

Maintenance Activities Observed:

- Replacement of Class 1E Motor Controllers and Circuit Breaker Units (DCP 98-687-10) (Unit 2)
- Fuel Handling Building Exhaust Charcoal Filter 13A Change Out (Unit 1)

- Essential Cooling Water Pump 2C Extended Allowed Outage Work (Unit 2)
- Startup Feedwater Pump Postmaintenance Test Run (Unit 1)

b. Observations and Findings

The inspectors observed that surveillance tests were performed utilizing the proper procedures. Prejob briefings were of good quality. Personnel performing surveillance activities had experience with the task. Equipment manipulations during tests were very well controlled by operators. Where required, independent verification techniques were properly conducted. Communications were precise and sufficiently detailed. The inspectors verified that surveillance activities satisfied Technical Specifications requirements.

Maintenance work performed during the Unit 2 Train C extended outage was extensive. Inspectors observed that the various work disciplines coordinated well in a limited work area. Work instructions were available at the job site and were observed to be followed. The inspectors observed the licensee replace Class 1E circuit breakers in the essential cooling water pump room. The maintenance work was very well controlled and supervised. Quality control personnel inspected completed work against work package instructions. The inspectors observed that security provided good support to work activities. The outage scope required lifting major components through the roof access, blocking and draining the intake bay, as well as keeping the normal door open to facilitate access to the pump area. These activities required security personnel to provide compensation and access control. The inspectors observed proper control of access by attentive guards.

In contrast, work performed to change out the carbon filter bed in Unit 1 Fuel Handling Building Exhaust Charcoal Filter 13A was not well controlled. The licensee utilized Procedure PMI-M-ZH-0001, Revision 2, “Adsorber Bed Removal and Replacement,” for the work. The inspectors noted that this procedure specified placing a sheet of plastic over both faces of the charcoal filter bank in order to contain charcoal dust. This was not done, with the result that a significant amount of dust settled on the downstream high-efficiency particulate air (HEPA) filters, reducing the air flow through the filters. When the inspectors pointed out this condition, the system engineer evaluated the HEPA filter differential pressure and determined that it was still within the acceptable range.

During the charcoal bed filling process, the inspectors noted a number of items contributing to poor work performance. The ports utilized for filling and draining were not labeled. This caused confusion because the procedure was not sufficiently clear as to where to make the connections. Maintenance personnel were about to fill the charcoal bed by holding the fill hose by hand over an inspection port instead of using the fill port. Also, a connection was going to be made to the drain port instead of the return port, which would have resulted in draining the charcoal at the same time the bed was being filled. The inspectors pointed out the setup error.

The inspectors noted a lack of licensee supervision during the job, even though the workers made several calls to their supervisor due to lack of familiarity with the process. The procedure was intended to provide guidance; however, it was not required to be followed verbatim, allowing alternate methods to be used. The inspectors determined that no violations occurred. Also, the inspectors noted poor housekeeping practices that resulted in the area around the filters becoming very messy during the draining and filling process with charcoal being spilled and walked on.

After these items were identified to licensee management, subsequent charcoal filter change outs were performed much better. The licensee held discussions with maintenance personnel on the correct setup and implemented work area preparation steps which improved the drain and fill operations and housekeeping. This included covering the HEPA filters with plastic sheeting.

c. Conclusions

Performance during maintenance activities was mixed. The replacement of fuel handling building emergency filter bed charcoal demonstrated that workers were unfamiliar with the process, the procedure and lack of equipment labeling were confusing, and supervision was inadequate. Workers did not effectively contain charcoal dust, which ended up in a high efficiency filter.

M1.2 Fuel Handling Observations (62707, 71707)

The inspectors observed fuel handling activities during core offloading and inspection, both inside the reactor building and in the spent fuel pool. The licensee demonstrated good communications and control of the evolutions. A senior reactor operator was stationed as required, with another senior reactor operator observing the operations in the spent fuel pool periodically. All bundles were visually inspected by camera for evidence of damage or foreign material and were inspected by ultrasonic examination to locate a failed bundle. The results of this examination are discussed in Section E8.1.

Inspectors observed that fuel handling was performed in a careful manner, without errors. Verifications were performed as required. Plant conditions required by Technical Specifications were properly established for core alterations. The inspectors verified that the fuel handling supervisors were current senior reactor operators.

M8 Miscellaneous Maintenance Issues (92700)

M8.1 (Closed) LER 498/97009-01and -02: Main steam safety valves as-found setpoints out of tolerance.

The NRC had previously closed LERs 499/97001-00, 498/97005-00, and 498/97009-00, Inspection Followup Item 499/98009-01, and Unresolved Item 498;499/98005-01, all of which address instances of main steam safety valves opening pressures being above the Technical Specification required tolerance band. The licensee successfully corrected the problem. No new issues were identified in these reports.

III. Engineering

E8 Miscellaneous Engineering Issues (92903, 92700)

E8.1 (Closed) Inspection Followup Item 498/98009-02: Failed fuel inspection results.

The licensee was unable to identify the leaking bundle by performing ultrasonic inspections during the Unit 1 refueling outage in Spring of 1999. Testing after startup confirmed that the leaking bundle had been reinserted in the core. The licensee closely monitored the activity of the reactor coolant, which remained stable throughout the cycle at a level indicative of a very small leak.

The licensee retested all bundles after offloading during this outage using an improved ultrasonic probe. The licensee identified a total of four leaking fuel pins in three fuel bundles. Visual inspections were unable to locate the leaks, since the bundles were not disassembled during the inspection. The affected bundles included one older standard design bundle that was planned for discharge and two bundles of the newer Vantage 5H design that had been used during two cycles and were originally planned to be placed back during reload. The licensee was able to substitute other bundles for the reload without affecting the core design. The licensee planned further inspections to determine the cause of the failures.

E8.2 (Closed) LER 498/98005-00: Safety injection accumulator setpoints did not properly account for instrument uncertainty.

As part of the licensee's corrective actions for a programmatic weakness in accounting for instrument uncertainty, the licensee identified that safety injection accumulator volume and pressure setpoints were affected. As a result, the accumulators could have been outside the required conditions without being recognized. The programmatic issue was addressed in NRC Inspection Report 50-498;499/98-23. This example was determined not to be safety significant because instrument uncertainties were largely offset by existing setpoint conservatisms. The setpoints were corrected appropriately.

E8.3 (Closed) Unresolved Item 498;499/9723-02: Perform and document a safety evaluation for 19 trivial changes.

The inspectors reviewed this unresolved item and determined that no further action is required. This unresolved item has been entered into the licensee's corrective action program as Condition Report No. 96-10541.

IV. Plant Support

R1 Radiological Protection and Chemistry Controls

R1.1 Chemistry Support During Degassing and Crudburst Cleanup

The inspectors observed chemistry support during degassing of the reactor coolant system and crudburst initiation and cleanup. The process was discussed with chemistry supervision. The following procedures were reviewed:

- Conduct of Chemistry
- 0PCP03-ZC-0005, "Chemical Addition to the Reactor Coolant System"
- 0PCP01-ZA-0038, "Plant Chemistry Specifications"
- 0POP02-CV-0001, "Makeup to the Reactor Coolant System"
- 0POP03-ZG-0006, "Plant Shutdown From 100% to Hot Standby"
- 0POP03-ZG-0007, "Plant Cooldown"

Chemistry provided good support to operations in preparing for and completing both evolutions. A crudburst was initiated and cleaned up per the Electric Power Research Institute guidelines following plant shutdown to minimize the source term. The licensee's program has been effective over the long-term in this regard. The outage chemistry supervisor monitored sample results and advised the shift supervisor on cleanup strategy and plant alignment. Radiation Protection personnel monitored reactor coolant system dose rates to confirm the effectiveness of the cleanup effort.

Chemistry provided a briefing to operators prior to degassing the plant and coordinated the process and samples to determine progress. The evolution was conducted in accordance with guidelines and Technical Specifications.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management on April 4, 2000. Management personnel acknowledged the findings presented. The inspector asked whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

X.3 Management Meeting Summary

Frank J. Miraglia, Jr., Deputy Executive Director for Regulatory Programs, James L. Blaha, Assistant for Operations, Office of the Executive Director, and Thomas P. Gwynn, Deputy Regional Administrator, Region IV, visited the site on March 15, 2000. The purpose of the meeting was to discuss licensee performance and the status of steam generator replacement work.

ATTACHMENT

PARTIAL LIST OF PERSONS CONTACTED

Licensee

T. Cloninger, Vice President, Generation
K. Coates, Manager, Maintenance
E. Halpin, Manager, Operations
W. Harrison, Licensing Engineer
S. Head, Supervisor, Licensing
A. Kent, Manager, Electrical/Instrumentation and Controls, Systems Engineering
R. Lovell, Manager, Training
B. MacKenzie, Manager, Operating Experience Group
M. McBurnett, Director, Quality and Licensing
G. Parkey, Manager, Plant Generation
D. Rencurrel, Manager, Electrical/Instrumentation and Controls
P. Serra, Manager, Plant Protection
J. Sheppard, Vice President, Engineering and Technical Services
S. Thomas, Manager, Design Engineering Department
M. Van Noy, Licensing Engineer

NRC

None

INSPECTION PROCEDURES USED

IP 37551: Onsite Engineering
IP 61726: Surveillance Observations
IP 62707: Maintenance Observations
IP 71707: Plant Operations
IP 71750: Plant Support Activities
IP 92700: Onsite Followup of Written Reports of Nonroutine Events at Power Reactor Facilities
IP 93702: Prompt Onsite Response to Events at Operating Power Reactors
IP 92903: Followup - Engineering

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-498/0005-01	NCV	Operators failed to recognize operability impact of battery outage (Section O1.3).
50-499/0005-02	NCV	Power not available to enable operability of personnel air lock (Section O8.4).

50-499/0005-03	NCV	Solid state protection system problem misdiagnosed (Section O8.5).

Closed

50-498/0005-01	NCV	Operators failed to recognize operability impact of battery outage (Section O1.3).
50-499/0005-02	NCV	Power not available to enable operability of personnel air lock (Section O8.4).
50-499/0005-03	NCV	Solid state protection system problem misdiagnosed (Section O8.5).
50-498/98009-00	LER	Improper calculation of containment average air temperature (Section O8.1).
50-499/99006-00	LER	Entry into Technical Specification 3.0.3 (Section O8.2).
50-498/990007-00 and -01	LER	Unit 1 Train B control room makeup and cleanup filtration system inoperable for greater than allowed outage time (Section O8.3).
50-499/99004-00	LER	Power not available to enable operability of personnel air lock (Section O8.4).
50-498/00001-00	LER	Solid state protection system problem misdiagnosed (Section O8.5).
50-498/00002-00	LER	Operators did not recognize the full Technical Specification impact of removing the Train A battery from service (Section O8.6).
50-498/97009-01 and -02	LER	Main steam safety valves as-found setpoints out of tolerance (Section M8.1).
50-498/98009-02	IFI	Failed fuel inspection results (Section E8.1)
50-498/98005-00	LER	Safety injection accumulator setpoints did not properly account for instrument uncertainty (Section E8.2).
50-498;499/9723-02	URI	Perform and document a Safety Evaluation for 19 trivial changes (Section E8.3).