ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket Nos.:	50-498 50-499
License Nos.:	NPF-76 NPF-80
Report No.:	50-498/99-02 50-499/99-02
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:	January 10 through February 20, 1999
Inspectors:	Neil F. O'Keefe, Senior Resident Inspector Wayne C. Sifre, 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. 50-498/99-02; 50-499/99-02

This inspection included aspects of licensee operations, maintenance, engineering, and plant support. The report covers a 6-week period of resident inspection.

Operations

- Operators maintained a high level of awareness of equipment operating conditions. Operators were able to identify several small problems and correct them before they became more significant. These included an overheated power supply and a leaking instrument line inside containment (Section O1.1).

- Inspectors identified that the licensee was routinely relying solely on a closed check valve for containment isolation while the associated motor-operated valve was inoperable. This was in conflict with the requirements in Technical Specification 3.6.3. The licensee had incorrectly interpreted the requirement in a Technical Specification interpretation (Section O1.1).

- An automatic Unit 2 reactor trip occurred while operators were conducting electrical ground isolation. The operator was in the wrong panel when he inadvertently deenergized turbine trip circuitry. Inadequate self-checking was the root cause of this event. The fact that operations did not have a formal process or procedure for ground isolation, and operator knowledge deficiencies in electrical theory were contributing factors to this event (Section O4.1).

- Operators caused a power increase while attempting to adjust the level controller for Moisture Separator Reheater Drip Tank 22A. In response, control room operators had to take action to restore power below 100 percent. Despite the potential for a reactivity increase, the prejob brief for this evolution was not rigorous and thorough and the evolution was conducted without a procedure, direct supervisory oversight, or peer-checking. Self-checking opportunities were missed by not placing a water level sight-glass in service to monitor tank level during the evolution (Section O4.2).

- The inspectors observed that licensed operator simulator training sessions were well performed and with good control of each session by the training staff. Operators made good use of briefs and status updates. Postscenario discussions were self-critical and operations management personnel frequently participated. The material condition of the simulator was good. However, the inspectors observed that operators frequently did not maintain logs or other routine documentation in the simulator that were required in the plant (Section O5.1).

- The inspectors noted a marked improvement in consistency and level of detail provided in control room log entries. Limiting condition for operation (LCO) action entries were clearly recorded, regardless of the expected length of time the action was expected to be in effect (Section O8.1).

Maintenance

- Maintenance and surveillance activities were thorough and well performed. Extended online outages to conduct 18-month and 5-year inspections for two emergency diesel generators were well coordinated and promptly completed. The licensee identified and corrected several emergent equipment problems without significantly impacting the outage durations (Section M1.1).

Engineering

- Reactor engineering personnel provided excellent support to operators during a periodic change to the full-out position of control and shutdown rods. The associated configuration changes to the rod control and plant computer systems were independently verified and appropriately documented. A reactor engineer provided a detailed briefing of the procedure and the expected plant response. Control room operators were very knowledgeable and performed the reactivity manipulations in a formal, controlled manner with close supervision (Section E2.1).

Plant Support

- The inspectors observed good sampling and analysis techniques along with strict procedural adherence by primary chemistry technicians during routine sampling. Laboratory equipment was modern and in good condition (Section R1.1).

- Excellent live firefighting training was provided offsite to fire brigade teams. The firefighting training facility was tailored to mimic plant areas and equipment to maximize training realism and effectiveness. Plant management was involved in the training (Section F5.1).

Report Details

Summary of Plant Status

Unit 1 operated at 100 percent power throughout this inspection period.

Unit 2 began this inspection period at 100 percent power. On January 21, the plant tripped during an attempt to isolate a ground which resulted in unintentionally generating a turbine trip actuation. The plant restarted the following day and resumed full power operation through the rest of the inspection period.

I. Operations

01 Conduct of Operations

O1.1 General Comments (71707)

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

Inspectors periodically observed operator rounds and control room activities. Operators maintained a high level of awareness of equipment operating conditions. Control room operators identified an unexplained level decrease in Safety Injection Accumulator 1C. A prompt containment entry was made to inspect the system, and a small leak was identified in an instrument line fitting. The leak was isolated and repaired the same day without affecting safe operation. In another case, a nonlicensed operator on routine rounds noticed a burning odor in the electrical auxiliary building. The problem was located in a power supply which was quickly isolated before it escalated to a more severe problem. On another occasion, operators questioned the condition of the Unit 2 feedwater isolation valve hydraulic system when pressure repeatedly increased and had to be manually reduced. The accumulators were subsequently found to have lost their nitrogen charge and in a solid condition. An operability evaluation concluded that the system could have been rendered inoperable if pressure increased above the normal operating band. Sensitivity to changes in normal operating conditions was also displayed by security personnel on rounds. During the Unit 2 startup on January 22, a security guard reported an unusual sound in Steam Generator Feed Pump 22. As a result, operators discovered and corrected a low seal water flow condition in this idle pump.

The inspectors identified that, while performing local leak rate testing and maintenance affecting containment penetrations, the licensee commonly took credit for an inside containment isolation check valve as the single barrier used to satisfy Technical Specification 3.6.3 required actions for an inoperable outside containment isolation valve. The inspectors noted that this conflicted with the requirements of Technical Specification 3.6.3, but was justified by the licensee's Technical Specification Interpretation 116. The Technical Specification Interpretation used an NRC-approved Improved Technical Specification document (MERITS) to demonstrate that their position

was acceptable to the NRC. This issue will be reviewed further following the licensee's reportability review of their past practice to determine if it was in compliance with the Technical Specification requirement in force at South Texas Project. This is an Unresolved Item (50-498;499/99002-01).

O3 Operations Procedures and Documentation

O3.1 Engineered Safety Feature (ESF) Systems Walked Down

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

- Essential Chilled Water System (Unit 1)
- Safety Injection System (Unit 1)
- Standby Diesel Generators 21, 22, and 23 (Unit 2)
- Auxiliary Feedwater System, Trains A, B, and C (Unit 2)

Equipment operability and material condition were acceptable in all cases. The inspectors verified that the systems were properly aligned for the existing mode of operation. The inspectors also 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.

The inspectors identified an air leak in the drier associated with Starting Air Compressor 26. A cracked instrument face for a moisture indicator was leaking air while the compressor was running. The leak was sufficient to increase compressor run time without preventing a pressure increase. Also, the inspectors identified an improperly installed scaffold that had insufficient clearance from Containment Spray Pump 2C. The licensee promptly corrected both problems.

During a walkdown of the Unit 1 Emergency Core Cooling System pump rooms, the inspectors determined that housekeeping in these areas was atypical of the housekeeping of the plant in general. Items from previously completed maintenance activities were found. Specifically, a small brush was found in a high head safety injection pump housing, a face shield and cotton glove liners were found on the floor near the pump, another face shield was found in another train's pump room, and tools were found unattended in the third train's pump room. The licensee promptly removed all items.

O4 Operator Knowledge and Performance

O4.1 Unit 2 Reactor Trip Due to Operator Error

a Inspection Scope (93702, 71707)

On January 21, 1999, Unit 2 experienced an automatic reactor trip due to the closure of the turbine throttle valves. The throttle valves closed because of a loss of power to the turbine control system, resulting from an inadvertent opening of a 120 volt supply breaker. All safety systems functioned as designed during the event. The inspectors responded to the control room and observed operator response. Inspectors then reviewed the circumstances of the trip and the licensee's response.

b. Observations and Findings

Operations personnel were attempting to locate the source of a ground indication on 480-volt Load Center 2G1. This electrical bus powered nonvital equipment located in the turbine building. The operator performing the ground checks opened breakers while another operator observed the ground detector response. The operator erroneously opened breakers on 480-volt Lighting Panel 15R instead of on Panel 15S, then opened breakers on 120-volt Distribution Panel DP0408 instead of Panel DP0407. This resulted in the loss of power to the turbine control system and the subsequent reactor trip.

The inspectors observed that control room operators responded appropriately to the trip. The plant was quickly stabilized in a shutdown condition in accordance with plant procedures.

The licensee promptly formed an Event Review Team to investigate the cause of the event. This team concluded that the root cause for the operator being at the wrong distribution panel was inadequate self-verification attributed to fatigue and overconfidence in performing a perceived low risk evolution. Also, no formal process existed for conducting ground isolations. A knowledge deficiency was determined to exist in that operations personnel were searching for a 480 volt system ground indication on a 120 volt system; an electrical ground cannot be detected through the transformer that interfaces the two different voltage systems.

The licensee identified several barriers in their work management process that were not utilized to their fullest extent. During the prejob brief, the location of the distribution panel was not discussed. The participants relied on the plant operator's knowledge to locate the panel. Several panels of this type exist in the turbine building. Peer checking was not considered. Although the operator had a load list, he was not able to check himself because the distribution panel had no labels on individual switches to indicate the loads.

The inspectors noted that the operator opening breakers was at the opposite end of the turbine building from where the correct panels were located. The operator at the ground detector should have been able to identify the wrong-panel errors because he could

easily see the correct panels. However, the licensee subsequently concluded that many operators were not familiar with the locations of specific electrical distribution system panels.

The lack of a formal operations process for locating grounds also contributed to this event. Operators performing ground identifications did not normally utilize expert assistance from electrical maintenance or engineering. The ground isolation plan devised during this event was informal and insufficiently detailed given the knowledge deficiencies of the electrical system. As a result, the impact of deenergizing loads was not fully reviewed, and electrical theory knowledge deficiencies resulted in checking the wrong part of the system.

The inspectors determined that no regulatory requirements were violated as a result of this event. However, the licensee's reliance on skill of the craft to perform ground isolation was considered to be based on insufficient training and knowledge in this case.

Short-term corrective actions included suspending ground isolation evolutions performed solely by operations personnel; electricians were required to assist. Long-term corrective actions included evaluating electrical theory training for operations personnel with special emphasis on ground isolation. The licensee was also considering adding special labels for all breakers and switches that can cause a reactor or turbine trip. A ground isolation process was also being created.

c. Conclusions

An automatic Unit 2 reactor trip occurred while operators were conducting electrical ground isolation. The operator was in the wrong electrical panel when he inadvertently deenergized turbine trip circuitry. Although lack of self-checking was the root cause of this event, not having a formal process or procedure for ground isolation, and operator knowledge deficiencies in electrical theory were contributing factors to this event.

O4.2 Power Increase Caused by Steam Plant Work Without a Procedure

a. Inspection Scope (71707)

The inspectors reviewed a control room log entry describing a reactor power increase while adjusting the steam plant. The inspectors reviewed logs and Condition Report 99-2103 and discussed the event with the operators involved and with operations management. The inspectors also walked down the applicable portions of the steam plant.

b. Observations and Findings

On February 11, operators attempted to establish plant conditions that would allow working on the normal level controller for Moisture Separator Reheater Drip Tank 22A. This tank collected moisture removed from the main steam piping between the high pressure and low pressure turbines. Water level was controlled to provide a seal between the steam system and the feedwater heaters that received the removed

moisture. Operators attempted to lower the setpoint of the high level dump valve controller to below the setpoint of the normal controller so that the high level dump valve would be controlling. When the nonlicensed operator lowered the setpoint, the high level dump valve opened and drained the tank, causing an increased steam demand and a resultant power increase.

Control room operators observed a larger than expected power increase over several minutes and took appropriate action to reduce turbine load. Power peaked at 3813.8 MWt (100.3 percent power) 4 minutes into the transient and returned below 100 percent 12 minutes into the transient. The inspectors verified that the 1 hour power average was below 100 percent power. No regulatory requirement was violated during this brief power excursion.

The inspectors determined that, despite the expectation that this routine evolution would increase reactor power, no procedure existed to perform the necessary steps. No supervisor was present during the evolution, and no peer checks were utilized. Although controller operation was complex, the system response was monitored remotely. System response monitoring would have been easier had the operator performing the work utilized a sight-glass to monitor level in the tank while he was adjusting the controller setpoint. As a result of not being able to monitor system response, the nonlicensed operators in the turbine building were unaware that they had caused a reactor transient until well after stable conditions were reestablished.

In this case, operators did not take the appropriate precautions for controlling an evolution which had the potential to affect reactor power. A prejob briefing was conducted which included discussion of the potential for a power increase and actions to take in response. However, the brief did not discuss all available indications and precautions, and did not fully address the expected plant response.

c. Conclusions

Operators caused a power increase while attempting to adjust the level controller for Moisture Separator Reheater Drip Tank 22A. In response, control room operators had to take action to restore power below 100 percent. Despite the anticipated small positive effect on reactivity, the prejob brief for this evolution was not rigorous and thorough and the evolution was conducted without a procedure, direct supervisory oversight, or peer-checking. Self-checking opportunities were missed by not placing a water level sight-glass in service to monitor tank level during the evolution.

O5 Operator Training and Qualification

O5.1 Simulator Observations (71707)

The inspectors observed a number of licensed operator training sessions in the control room simulator. The material condition of the simulator and the performance of personnel were good. Effective control of the session by the training staff was observed, including stopping the scenario to improve the training value of some situations. Operators made good use of briefs and status updates. Postscenario

discussions were self-critical and effective. Operations management personnel were frequently observed to be involved in the evaluation of performance and in the setting of expectations. The inspectors noted that operators frequently did not maintain logs or other routine documentation in the simulator that was expected to be maintained during operations in the plant.

O8 Miscellaneous Operations Issues (92901, 92700)

O8.1 (Closed) Inspection Followup Item 50-498;499/98009-01: Inconsistent control room log entries for short duration surveillance LCO entries. The inspectors reviewed control room log entries on a daily basis and compared them with surveillance procedures. The inspectors noted a marked improvement in consistency and level of detail provided in control room log entries. LCO action entries were clearly recorded, regardless of the expected length of time the action was expected to be in effect. Inspectors were able to verify that actions were taken as required by Technical Specifications. This item is closed.

O8.2 (Closed) Licensee Event Report 50-499/99002-00: Automatic reactor trip due to loss of power to the turbine control circuitry. The event and root cause determination is discussed in Section O4.1 above. The inspectors reviewed the corrective actions and determined that they were appropriate and were scheduled to be completed within a reasonable time period. This item is closed.

O8.3 (Closed) Licensee Event Report 50-499/98001-00: Failure to meet Technical Specification requirements for inoperable Standby Diesel Generator 21. On January 15, 1998, after reviewing the results of a failure analysis on the diesel generator voltage regulator and instantaneous preposition board, the licensee declared the diesel generator inoperable during the period between 1:06 a.m. on December 28, 1997, after the conclusion of the last successful surveillance test, and 7:47 p.m. on December 30, 1997, when the diesel was removed from service to troubleshoot the cause of observed abnormalities. The licensee determined that the failure of an operational amplifier on the voltage regulator was a condition that could have resulted in a start failure if a start demand had occurred. During this period, Technical Specification 3.8.1.1 actions to verify off-site power sources had not been performed because the condition was not recognized until the failure analysis was completed. The voltage regulator and instantaneous preposition board were replaced, and the diesel generator performed satisfactorily during subsequent postmaintenance testing. The licensee took appropriate actions to declare the diesel inoperable when the degraded conditions were recognized. 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 50-499/99002-02).

II. Maintenance

M1 Conduct of Maintenance

M1.1 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 that the procedures satisfied the requirements. Maintenance work was reviewed to ensure that adequate work instructions were provided, that the work performed was within the scope of the authorized work, and that it was adequately documented. Work practices were also observed. In each case, the impact to equipment operability and relation to applicable Technical Specifications actions were independently verified.

Surveillances observed:

- 0PSP03-SI-0003/6, "High/Low Head Safety Injection Inservice Test" (Unit 1)
- 0PSP03-FW-0002, "Feedwater System Valve Operability Test (Cold Shutdown)" (Unit 2)
- 0PSP02-SI-0950, "Safety Injection Accumulator Level Analog Channel Operational Test" (Unit 2)

Maintenance activities observed:

- Seat repair to containment isolation Valve CC-MOV-0208 (Unit 1)
- 5-year maintenance and inspections for SDG-22 (Unit 2)
- 18-month maintenance and inspections for SDG-21(Unit 2)

b. Observations and Findings

The observed work was well performed, thorough, and within the scope of the work package. Technicians were experienced and knowledgeable of their assigned tasks. Supervisory oversight was evident, and engineering personnel were frequently observed participating in and observing tests.

Inspectors observed the opening of a valve gallery below the Unit 1 auxiliary feedwater storage tank, a confined space, for periodic inservice inspection. Mechanical maintenance personnel and the system engineer were knowledgeable of requirements for controlling access to confined spaces and of industrial safety requirements.

Extended Standby Diesel Generator 21 and 22 Outages

The inspectors observed various work activities associated with the Standby Diesel Generator (SDG) 21 and 22 system outages. SDG 22 was removed from service from January 11-16 in order to perform Technical Specification required 5-year maintenance and inspection. SDG 21 was removed from service from February 1-7 in order to perform 18-month maintenance and inspection.

The work activities during these outages were well coordinated. Excellent foreign material exclusion measures were observed during the work. The inspectors observed that system engineering personnel and a vendor representative were present to support work activities.

Several problems with support systems, which caused some delay in restoring operability, were identified and corrected. A leak in the shutdown air system caused SDG 21 to trip in the test mode during postmaintenance testing; this problem would not have affected the ability of the SDG to perform its safety function. Subsequently, system restoration was delayed when a circuit breaker in the essential cooling water system, which provided cooling to SDG 21, failed testing without a qualified spare on site. Also, overspeed testing of SDG 21 was delayed while control room operators tried to determine why six control room annunciators associated with the diesel were still illuminated after returning the system to standby. After 2 hours of control room and engineering staff review of logic drawings, a control room operator realized that the cause was computer system work that was unrelated to the diesel outage. Although operators exhibited a good questioning attitude in the latter case, the delay resulted from a lack of awareness of the total impact of equipment that was removed from service.

c. Conclusions

The inspectors concluded that maintenance and surveillance activities were well performed and thoroughly completed. Extended online outages for two emergency diesel generators were well coordinated and promptly completed. The licensee identified and corrected several emergent equipment problems without significantly impacting the outage durations.

M8 Miscellaneous Maintenance Issues (92700)

M8.1 (Closed) Licensee Event Report 50-498/97013, Revisions 00 and 01: Improperly calibrated containment leak rate measuring and test equipment. The licensee identified that the test equipment used for some containment leak rate testing was not calibrated for the test conditions. A conservative density correction factor of 4 was applied to the combined Type B and C test results, with the result being slightly above the allowed combined leak rate. This was reported in the original revision of this licensee event report. The licensee subsequently determined that the actual correction factor resulted in all containment leak rate testing (Types A, B, and C) being within Technical Specification requirements. Corrective actions were appropriate. This item is closed.

M8.2 (Closed) Licensee Event Report 50-498/98004-00: Inoperable fuel handling building exhaust ventilation system. On April 30, 1998, Fuel Handling Building Exhaust Booster Fan 11B developed a grounded motor. Repairs to correct the condition required opening the system duct work, rendering the system inoperable. Enforcement discretion was granted to avoid an unnecessary plant shutdown and allow sufficient time to perform the work. The root cause of the ground was a deficiency in the method used to coat the motor windings. Corrective action included a Technical Specification change and a system modification to permit online motor replacement and reworking all fan motors of this type using an improved method. The Technical Specification change was submitted to the NRC on September 28, 1998. The inspectors reviewed the corrective actions and determined that they were appropriate and were scheduled to be completed within a reasonable period. The inspectors concluded that no violation occurred associated with the root cause of this event. This item is closed.

III. Engineering

E2 Engineering Support of Facilities and Equipment

E2.1 Reactor Engineering Support for Operations (37551, 61726)

On January 26, the inspectors observed a periodic change to the full-out position of control and shutdown rods in accordance with Plant Engineering Procedure 0PEP02-RS-0001, "Control Rod Axial Repositioning," in Unit 2. This procedure also involved performing the associated configuration changes to the rod control and plant computer systems, which were observed to be independently verified and appropriately documented.

A reactor engineer provided a detailed briefing of the procedure and the expected plant response. Since the process involved moving all of the control rods further out, positive reactivity was being added. Control room operators were knowledgeable and recommended a number of conservative preparations. Reactivity manipulations were formal, controlled, and closely supervised. Self-checking and peer checks were evident. The evolution was performed as a critical evolution, which resulted in activities requiring control room attention being rescheduled to avoid interrupting the operators.

E8 Miscellaneous Engineering Issues (92700)

E8.1 (Closed) Licensee Event Report 50-498/98001-00: Failure to perform Technical Specification surveillance regarding containment structural integrity. This report documented a condition identified by the licensee during a January 1998 review of the calculations for tendon prestress acceptance criteria. The licensee identified errors in the calculations used to determine the acceptance criteria for tests performed in April 1992 and in December 1989 in Units 1 and 2, respectively. The licensee determined that one specimen in each unit had not met the corrected acceptance criteria. Technical Specification 4.6.1.6.1.a.(2) requires testing of a specimen from the tendon on each side of a tendon that fails the test. The licensee performed an engineering evaluation as required by Action b of Technical Specification 3.6.1.6, which verified that containment

integrity was maintained in both units. As a result, the failure to perform the additional tests required by the Technical Specifications constitutes a minor violation and is not subject to formal enforcement.

E8.2 (Closed) Licensee Event Report 50-498/98-002-00: Condition outside plant's design basis. This report documented the licensee identified condition that the just-in-narrow-range setpoint for narrow range steam generator level was incorrect. The design basis for the setpoint was to ensure that the top of the steam generator tubes would be covered before auxiliary feedwater flow would be permitted to be reduced under accident conditions. This setpoint was used in Emergency Operating Procedures, the Qualified Display Processing System, and the Emergency Response Facility Data Acquisition Display System. The licensee corrected the affected setpoints. This failure constitutes a minor violation and is not subject to formal enforcement.

IV. Plant Support

R1 Radiological Protection and Chemistry Controls

R1.1 Chemistry Activities Observations (71750)

The inspectors observed primary chemistry technicians performing routine sampling. Observed activities included collecting liquid samples from Boric Acid Tanks 2A and 2B, the chemical and volume control system inlet, the Spent Fuel Pool Demineralizer 1B inlet, Safety Injection Accumulator 2C, and laboratory preparations for analyses. Procedures for each sample point were available and were consulted. The inspectors noted that adequate measures were taken to ensure representative samples were taken. Good sample handling techniques were used to prevent sample and/or personnel contamination. The licensee utilized modern equipment, and the technicians were familiar with its use. The laboratory spaces and equipment were maintained in good order.

Plant chemistry results were routinely reviewed by the inspectors and verified to be within Technical Specification and procedural limits. Appropriate corrective actions were observed on those occasions when abnormal trends were identified, and normal conditions were promptly restored. Secondary water samples and radiation monitors were reviewed and confirmed steam generator tube integrity.

F5 Fire Protection Staff Training and Qualification

F5.1 Firefighting Training at the Dallas/Fort Worth (DFW) Airport

a. Inspection Scope (71750)

The inspectors observed fire brigade training at the DFW airport firefighting training center.

b. Observations and Findings

This was the second year that training was received at the DFW airport fire training facility. Each fire brigade team received one week of live firefighting training per year.

Training facility personnel visited South Texas Project to familiarize themselves with the site in order to tailor the training facility to provide realistic fire scenarios which mimicked plant equipment and layout. The main building used for the firefighting scenarios was built of concrete walls and floors and was equipped with cable trays, electrical panels, and pumps in configurations which closely resembled the plant.

The fire brigade teams used their own equipment during the training. Different methods of fighting fires were practiced, including the use of foam. The firefighting training center utilized good teaching aids and the instructors encouraged classroom participation. Operations department managers and control room staff attended the classes for familiarization and training evaluation.

c. Conclusion

Excellent live firefighting training was provided offsite to fire brigade teams. The firefighting training facility was tailored to mimic plant areas and equipment to maximize training realism and effectiveness. Plant management was involved in the training.

F8 Miscellaneous Fire Protection Issues

F8.1 (Closed) Violation 50-498;499/98006-02: Failure to properly implement fire brigade drills by not including all required assessments. Two drills were scheduled for 23 individuals who had not participated in the minimum number of required drills. As a result, all the fire brigade personnel attending did not actively participate, but were credited for the drill anyway. The licensee concluded that the site fire protection staff was not familiar with the applicable regulatory requirements and was therefore not adequately monitoring fire brigade drill participation.

The licensee implemented substantial corrective actions in response to this issue. This included reviewing all fire protection program procedures to ensure that all regulatory commitments and requirements were implemented, upgrading the technical knowledge of individuals involved in the fire protection program, and improving the implementation and monitoring of fire brigade drills, including an annual self-assessment. The inspectors reviewed the corrective actions and concluded that they were comprehensive and appropriate. Fire brigade drills were observed and found to be adequately supervised and documented, with good performance assessment, as documented in NRC Inspection Report 50-498/98011; 50-499/98011. Participation in the observed drills involved the appropriate number of fire brigade members, who all were actively involved. The inspectors also noted that the licensee declared a fire drill unsatisfactory during this inspection period because the fire brigade failed to use water to fight a switchboard fire within the expected time period. The inspectors concluded that this demonstrated that the licensee's program effectively set the appropriate standard for performance, and tested recent lessons learned by industry through the drill program.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management on February 23, 1999. 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.

ATTACHMENT

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

P. Arrington, Nuclear Assurance and Licensing
J. Calvert, Manager, Operations Training
T. Cloninger, Vice President, Engineering and Technical Services
W. Dowdy, Manager, Plant Operations Unit 2
R. Fast, Manager, Unit 1 Maintenance
J. Groth, Vice President, Nuclear Generation
E. Halpin, Manager, Unit 2 Maintenance
S. Head, Supervisor Nuclear Assurance and Licensing
J. Johnson, Manager, Engineering Quality
T. Jordan, Manager, Systems Engineering
A. Kent, Manager, Electrical/Instrumentation and Controls, System Engineering
M. Lashley, Manager, Reliability Engineering
D. Leazar, Director, Nuclear Fuel and Analysis
R. Lovell, Manager, Generation Support
R. Masse, Plant Manager, Unit 2
B. Mookhoek, Nuclear Assurance and Licensing
G. Parkey, Plant Manager, Unit 1
T. Powell, Manager, Health Physics

NRC

T. Alexion, STP Project Manager, NRR
R. Giardino, Technical Specification Branch, NRR
J. Pulsipher, Containment Systems Branch, NRR

INSPECTION PROCEDURES USED

IP 37551:	Onsite Engineering
IP 61726:	Surveillance Observations
IP 62707:	Maintenance Observation
IP 71707:	Plant Operations
IP 71750:	Plant Support
IP 92700:	Onsite Followup of Written Reports of Nonroutine Events at Power Reactor Facilities
IP 92901:	Followup - Operations
IP 92902:	Followup - Maintenance
IP 92903:	Followup - Engineering
IP 93702:	Prompt Onsite Response to Events at Operating Power Reactors

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-498;499/99002-01	URI	Containment Penetration Technical Specification Interpretation 116 (Section O1.1)
50-499/99002-02	NCV	Failure to Meet Technical Specification Requirements for Inoperable Standby Diesel Generator 21 (Section O8.3)

Closed

50-498;499/98009-01	IFI	Inconsistent Control Room Log Entries for Short Duration Surveillance LCO Entries (Section O8.1)
50-499/99002-00	LER	Automatic Reactor Trip Due to Loss of Power to the Turbine Control Circuitry (Section O8.2)
50-499/98001-00	LER	Failure to Meet Technical Specification Requirements for Inoperable Standby Diesel Generator 21 (Section O8.3)
50-498/97013-00 and -01	LER	Improperly Calibrated Containment Leak Rate Measuring and Test Equipment (M&TE) (Section M8.1)
50-498/98004-00	LER	Inoperable Fuel Handling Building Exhaust Ventilation System (Section M8.2)
50-498;499/98006-02	VIO	Failure to Properly Implement Fire Brigade Drills by Not Including all Required Assessments (Section F8.1)
50-499/99002-02	NCV	Failure to Meet Technical Specification Requirements for Inoperable Standby Diesel Generator 21 (Section O8.3)
50-498/98001-00	LER	Failure to Perform Technical Specification Surveillance Regarding Containment Structural Integrity (Section E8.1)
50-498/98002-00	LER	Condition Outside Plant's Design Basis (Section E8.2).