

APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report Nos.: 50-498/94-08
50-499/94-08

Licenses: NPF-76
NPF-80

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

Facility Name: South Texas Project Electric Generating Station,
Units 1 and 2

Inspection At: Matagorda County, Texas

Inspection Conducted: January 24-28, 1994

Inspectors: M. A. Satorius, Project Engineer, Project Branch A, Division
of Reactor Projects
C. E. Johnson, Reactor Inspector, Maintenance Branch, Division
of Reactor Safety

Approved:

W. D. Johnson
W. D. Johnson, Chief, Project Branch A

3/4/94
Date

Inspection Summary

Areas Inspected (Units 1 and 2): Routine, announced inspection to determine the effectiveness of the licensee's efforts to reduce and maintain the maintenance backlog. Additionally, inspection of the licensee's process for deferring service requests (SRs) previously scoped for work during the current outage.

Results (Units 1 and 2):

- The licensee had been successful in reducing the SR backlog to within their goal of less than 1000 Unit 1 and common powerblock SRs (Section 2.1).
- Licensee activities to repair station automatic functions and main control board deficiencies were ongoing, with a positive workoff rate observed (Section 2.2).
- System certification and acceptance systems were being effectively monitored for deferral of maintenance activities (Section 3.2).

- Nonsystem certification and acceptance systems were being effectively monitored for deferral of maintenance activities (Section 3.3).

Summary of Inspection Findings:

- Inspection Followup Item (IFI) 498;499/9331-39 was statused and remained open (Section 4.1).
- IFI 498;499/9331-47 was statused and remained open (Section 4.2).
- Part of IFI 498;499/9331-62 was statused and remained open (Section 4.3).
- IFI 498;499/9331-37 was closed (Section 5.1).
- IFI 498;499/9331-49 was closed (Section 5.2).
- Part of IFI 498;499/9331-62 was closed (Section 5.3).

Attachment:

- Persons Contacted and Exit Meeting

DETAILS

1 BACKGROUND

Both units at South Texas Project Electric Generating Station were shut down in early February 1993 and remained shut down as a result of numerous broad scope problems identified by the NRC and the licensee.

NRC Inspection Report 50-498/93-31; 50-499/93-31, issued on October 15, 1993, identified 16 restart issues that required resolution prior to the restart of Unit 1. In addition, a number of items related to these restart issues were identified. During the period of November 29 to December 10, 1993, an inspection was conducted to determine the licensee's effectiveness in resolving Restart Issue 3, "Service Request (SR) Backlog, Including Reduction Accomplished During the Current Outages and the Licensee's Review of Outstanding SRs for Issues Affecting Equipment Operability, Safe Plant Operation, and Operator Work-arounds." Because of the size of the SR backlog and the challenges that confronted the licensee, that inspection, documented in NRC Inspection Report 50-498/93-53; 50-499/93-53, was not able to establish a basis for concluding that Restart Issue 3 had been adequately resolved by the licensee.

The purpose of this inspection was to follow up on the licensee's efforts in reducing the SR backlog and review the licensee's methodology in deferring maintenance previously scoped for work during the current outage.

2 MAINTENANCE BACKLOG REDUCTION EFFORTS (92720)

2.1 SR Backlog

As of January 7, 1994, there were no Priority 1 and 52 Priority 2 SRs. The licensee had been effective in the timely workoff of these high priority work activities. A review from December 15, 1993, to the time of this inspection, revealed that the length of time that Priority 1 and 2 SRs remained open, prior to being worked and closed, was approximately 72 hours. This average did not include three jobs that, although assigned a Priority 2, were not completed for about 24 days, each due to plant conditions not being able to support work.

Although it was a goal of the licensee that prior to restart there would be no outstanding SRs that adversely affect plant safety or reliability (Priority 1 and 2 SRs), the licensee stated that, from a practical standpoint, it would not be unexpected for Priority 1 and 2 SRs to be generated as systems were placed in service and problems identified. The inspectors concluded that this approach was reasonable and, based on the average workoff time for Priority 1 and 2 SRs, the licensee was being proactive in quickly addressing high priority work.

In addition to the goal concerning high priority work, the licensee had established a goal of reducing the SR backlog to less than 1000 Unit 1 and common power block corrective and preventive SRs. At the conclusion of this inspection, the inspectors determined that the SR backlog consisted of approximately 950 SRs, with a positive workoff trend having been established over the past several weeks. The inspectors noted that within these 950 SRs there were many that were actively being worked and near closure.

The licensee had accomplished this reduction despite having worked off a significant backlog of punch list items identified during the system certification and acceptance program (refer to NRC Inspection Reports 50-498/93-53; 50-499/93-53 and 50-498/93-45; 50-499/93-45 for a discussion of the system certification and acceptance program walkdown punch lists). The total punch list backlog had consisted of as many as 1700 items; at the completion of this inspection that backlog was approximately 80 items.

The licensee acknowledged that they expected an increase in the number of SRs generated as Unit 1 heats up, the reactor changes modes, and places idled equipment in service. However, the licensee stated that, based on the SR workoff trend, the relatively good material condition of the station, and the maintenance efficiencies resulting from the operations work control group (refer to NRC Inspection Report 50-498/93-53; 50-499/93-53), the SR backlog would continue to be reduced and, at worst case, remain stable.

2.2 Inoperable Automatic and Main Control Board Function Backlog Activities

During the performance of the inspection documented in NRC Inspection Report 50-498/93-53; 50-499/93-53, the inspectors reviewed the status of SRs involving automatic and main control board functions to determine if necessary work was performed to ensure that no significant impact on system operability or operator burden existed.

At the time of this inspection, there were a total of 21 automatic functions in Unit 1 and common that were inoperable. These automatic functions were further broken down such that 17 were associated with operations and 2 each with chemical operations and technical support.

Of the 21 inoperable automatic functions, 12 were recently identified and the remaining 9 varied in age from 2 to 12 months. All of these 9 were scheduled for completion prior to the end of the outage. The inspector reviewed the specific inoperable automatic functions and determined that none constituted significant operator work arounds and should not distract or prevent the operators from the performance of their licensed duties. In addition, the licensee's workoff rate of these automatic functions had been positive, and the inspector concluded that the licensee's goal of reducing the backlog to less than 20 inoperable automatic functions was attainable.

At the time of this inspection, a total of 26 main control board deficiencies existed for Unit 1 and common. This number had been reduced since the inspection documented in NRC Inspection Report 50-498/93-53; 50-499/93-53,

when 43 deficiencies were identified. The licensee stated to the inspectors that, despite their goal of main control board deficiencies being 10 or fewer, it was their intent to repair all of the main control board deficiencies. As a result, all of the deficiencies were scheduled for completion during the current outage. As with inoperable automatic functions, the workoff rate for the main control board deficiencies was positive. The inspectors concluded that the licensee's goal was attainable.

2.3 Conclusions

The licensee was expeditiously working off Priority 1 and 2 SRs, and the inspectors had a high level of confidence that any high priority emergent work would be evaluated and resolved in a timely manner. The licensee had reached their goal of less than 1000 power block open SRs, and the inspectors concluded that, with the current maintenance programs in place, the licensee should be able to maintain the SR backlog manageable. The licensee was effective in the reduction of inoperable automatic functions and main control board deficiencies.

3 MAINTENANCE DEFERRALS (92720)

The purpose of this portion of the inspection was to review the SR backlog items that were initially scoped for work during the current outage but had subsequently been deferred and ensure that maintenance activities that were deferred did not compromise safety-related equipment reliability.

3.1 Background

NRC Inspection Report 50-498/93-45; 50-499/93-45 documented an inspection of the licensee's system certification and acceptance program. A part of this licensee process required that the responsible system engineer present the system to a readiness review committee (RRC), consisting of divisional managers from the maintenance, engineering, and operations departments. During this presentation, the system engineer formally recommended any maintenance and nonwork management system items for deferral from the scope of the outage. Following deferral approval by the RRC, the plant manager's review and approval of the deferral was required. NRC Inspection Report 50-498/93-45; 50-499/93-45 concluded that this was a rigorous process that was effective in identifying work activities that were necessary to ensure reliability of system certification and acceptance systems.

During this inspection, the inspectors determined that the licensee would not be able to complete all the outage scoped maintenance previously approved by the RRC and plant manager during the system certification process. Because of the close scrutiny that these work activities received when being considered by the RRC for original inclusion into the outage scope, the inspectors were concerned that these work activities could be deferred without an equally rigorous analysis.

3.2 System Certification and Acceptance Program Deferrals

The inspectors reviewed Procedures OTGP03-ZA-0005, "System Readiness," Revision 0, and OTGP03-ZA-0006, "System Acceptance," Revision 1. Procedure OTGP03-ZA-0005 established the methodology for evaluation of the readiness of selected systems/subsystems to support restart. Procedure OTGP03-ZA-0006 established the methodology for conducting a final acceptance review before restart. Procedure OTGP03-ZA-0005 contained the stipulation that the deferral of a maintenance activity previously scoped for work during the current outage would require the review and approval of the RRC and the plant manager.

The inspectors reviewed 56 corrective or preventive maintenance SRs that had previously been scoped for work during the outage. Forty-three of these SRs were coded as having been recommended for deferral by the RRC and approved by the plant manager, and 13 were coded as being recommended for deferral by the RRC and were waiting the approval of the plant manager. Deferral Justification Forms, as required by Procedure OTGP03-ZA-0005, were included with the deferred SRs and these were reviewed by the inspectors for each deferral in question. These deferral justifications that were reviewed, provided adequate technical basis and justification for the work deferral, and the inspectors considered the deferrals acceptable.

The inspectors attended an RRC meeting and determined that the review process conducted by the committee that accompanied each deferral was as in-depth and rigorous as the RRC meetings that originally placed the work item in the outage scope. This determination, in addition to discussions held with the cognizant system engineers, provided the inspectors with the basis to conclude that the work deferral process was acceptable. The licensee had done an acceptable job of documenting the justifications for the deferral of each particular item reviewed.

The inspectors raised questions concerning potential deferrals that had been through the initial review process but were rejected by the RRC and were directed to be completed before restart. Deferrals that went through this process were placed on the licensee's Exceptions List. All items on the Exceptions List were scheduled and required to be completed before restart. The inspectors' concern was that, if these deferrals were later determined not to be able to be worked, would the same in-depth review be conducted as was originally performed. Discussions with the licensee and review of Procedure OTGP03-ZA-0006 confirmed that deferrals in this category, which would not be completed, would be required to receive RRC and plant manager approval; similar to the evaluation originally given the SR when it was considered for deferral. The system engineer would be required to submit another Deferral Justification Form which was approved by the RRC and Plant Manager. The inspectors concluded that the process was acceptable.

Overall, both the RRC review process and the Plant Manager's final acceptance review was well coordinated, thorough, and rigorous. The system engineers had

prepared well documented readiness review packages and were knowledgeable of their respective systems.

3.3 Nonsystem Certification and Acceptance Program Deferrals

In addition to the deferred SRs reviewed from system certification and acceptance programs systems, the inspectors reviewed deferred SRs from nonsystem certification and acceptance program systems. Although not required to receive the same RRC review, these deferrals nevertheless did require plant manager approval prior to the work activity being deferred. The inspectors' review did not reveal any previously scheduled outage work that was deferred in a manner inconsistent with those deferrals within the system certification and acceptance programs.

3.4 Conclusion

Overall, both the RRC review process and the Plant Manager's final acceptance review for system certification and acceptance program systems was well coordinated and thorough. The system engineers prepared well documented readiness review packages and deferral justifications. Additional, adequate measures had been taken to ensure that SR deferrals for nonsystem certification and acceptance program systems were appropriately dispositioned.

4 STATUS OF ITEMS RELATED TO RESTART ISSUES (92701)

The following items related to restart issues were statused concerning the manner that the licensee had resolved the issue within the scope of the SR Backlog Restart Issue. They will remain open pending further NRC inspection effort to completely resolve the items during future restart issue and other inspections.

4.1 (Open) IFI 498;499/9331-39: There will be no outstanding SRs that adversely affect plant safety or reliability (Priority 1 and 2)

The inspectors noted a positive and timely trend in the workoff of Priority 1 and 2 SRs. This item remains open pending further NRC inspection (refer to Section 2.1).

4.2 (Open) IFI 498;499/9331-47: All SRs involving automatic functions will be evaluated and necessary work performed to ensure that no significant impact on system operability or operator burden exists. Any remaining inoperable automatic functions will be analyzed in the aggregate to ensure safe and reliable plant operation will not be unacceptably impacted.

This item (refer to Section 2.2) will remain open pending the completion of the licensee's initiative to meet their goal in the reduction of the number of inoperable automatic functions.

4.3 (Open) IFI 498;499/9331-62: Criteria for Maintenance Effectiveness and Material Condition.

- Changes in SR generation rate are evaluated and understood to ensure threshold for deficiency identification was acceptable - (SR generation rate is consistent with plant condition).

This item remains open pending further NRC inspection, following a period when a trend of licensee performance in this area has been established.

- Main control board deficiencies - goal (less than 10) met and trend remains positive.

This item (refer to Section 2.2) will remain open pending the completion of the licensee's initiative to meet their goal in the reduction of the number of main control board deficiencies.

5 CLOSED ITEMS RELATED TO RESTART ISSUES (92701)

The inspectors determined that the licensee's actions to address the following issues were adequate. These items were considered closed.

5.1 (Closed) IFI 498;499/9331-37: The goal for Unit 1 and common power block SRs is below 1000.

Based on the action taken by the licensee (refer to Section 2.3.2.2) this item was closed.

5.2 (Closed) IFI 498;499/9331-49: Management will review the number of components on increased surveillance testing frequency to ensure that the burden on operations and maintenance relating to the testing of these components will not adversely affect the safe operation of the plant.

The inspectors reviewed the licensee's current list of components placed on increased test frequency due to the requirements of ASME Section XI. The licensee had reduced the number of components on this list to a total of four pumps and three valves. The inspectors considered that this relatively small number of components did not negatively impact or burden operations staff.

5.3 (Closed) IFI 498;499/9331-62: Criteria for Maintenance Effectiveness and Material Condition.

- No outstanding SRs that affect unit safety or reliability - No Priority 1s or 2s.

This item was tracked under IFI 498;499/9331-39 (refer to Section 4.1).

- Demonstrate ability to manage maintenance workload - Total open SRs meets goal (less than 1000 in Unit 1) and workoff rate trend remains positive.

Based on the action taken by the licensee (refer to Section 5.1), this item was closed.

- Inoperable automatic control functions - Aggregate does not adversely affect operations' ability to perform quality rounds and handle normal work load. Positive trend continuing in resolving inoperable functions.

This item was tracked under IFI 498;499/9331-47 (refer to Section 4.2).

ATTACHMENT

1 PERSONS CONTACTED

1.1 Licensee Personnel

T. Cloninger, Vice President Nuclear Engineering
W. Cottle, Group Vice President, Nuclear
J. Fast, Manager, Unit 1 Maintenance
J. Groth, Vice President, Nuclear Generation
E. Halpin, Manager, Fluid Systems
S. Head, Deputy, General Manager Nuclear Licensing
J. Johnson, Supervisor, Quality Assurance
B. Mackenzie, Consulting Engineering Specialists, Corrective Action Group
L. Myers, Plant Manager, Unit 1
P. Parrish, Senior Licensing Specialist, Nuclear Licensing
F. Reed, Supervisor, Unit 1 Instrumentation and Controls Maintenance
R. Rehkugler, Manager, Nuclear Quality Control and Material Testing
L. Taylor, Senior Consultant, Maintenance Support

1.2 NRC Personnel

L. Carson, Radiation Specialist Inspector, Division of Radiation Safety and Safeguards (DRSS), Region V
C. Johnson, Reactor Inspector, Maintenance Branch, Division of Reactor Safety
D. Loveless, Senior Resident Inspector, Project Branch A, Division of Reactor Projects (DRP)
L. Ricketson, Senior Radiation Specialist, Facilities Inspection Programs Branch, DRSS
M. Satorius, Project Engineer, Project Branch A, DRP

The personnel listed above attended the exit meeting conducted on January 28, 1994. In addition to the personnel listed above, the inspectors contacted other personnel during this inspection period.

2 EXIT MEETING

An exit meeting was conducted on January 28, 1994. During this meeting, the inspectors reviewed the scope and findings of this report. The licensee did not take exception to any of the inspection findings nor identify as proprietary any information provided to, or reviewed by, the inspectors.