South Texas 2
4Q/2008 Plant Inspection Findings

Initiating Events

Significance: G Aug 14, 2008
Identified By: NRC
Item Type: FIN Finding
Ineffective Corrective Actions on the Equipment Clearance Order Process
The team identified a finding involving ineffective corrective actions for the equipment clearance order process. Despite the identification of numerous related failures of the equipment clearance order process in various significant conditions adverse to quality condition reports and recent audit reports, the licensee had not performed an effective overall assessment of the equipment clearance order/work process control to determine the extent of the condition and therefore, had not implemented effective corrective actions to address the underlying causes.

The team determined that the ineffective corrective actions associated with the equipment clearance order process, which continues to result in equipment clearance order errors affecting personnel and equipment safety, was a performance deficiency. The team determined that the finding was more than minor because it affected the Initiating Events cornerstone objective to limit those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The team evaluated the finding using the Phase 1 worksheet in Inspection Manual Chapter 0609, "Significance Determination Process," and determined the finding to have very low safety significance because: it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would be unavailable; it did not contribute to the likelihood of a loss-of-coolant accident; and it did not increase the likelihood of a fire or flooding. This issue has a crosscutting aspect in the area of human performance, specifically, the work practices aspect, in that, the licensee failed to adequately define and communicate expectations regarding procedural compliance and personnel following procedures. [H.4(b)]
Inspection Report# : 2008009 *(pdf)*

Significance: G Jun 28, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to evaluate and/or Document Multiple Boric Acid Leaks with Changed Conditions
The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion V, for failure to follow Procedure 0PGP03-ZE-0133, “Boric Acid Corrosion Control Program,” Revision 0 and Revision 1, which resulted in the licensee not re-evaluating changes to the material condition of plant equipment. On February 26, 2008, in preparation for Unit 1 Refueling Outage 1RE14, the inspectors identified boric acid deposits that appeared brown in color on spent fuel pool Valve 1-FC-0010B. Additional examples were identified by both the licensee and the inspectors where a changed condition was not re-evaluated. These examples point to multiple examples of the licensee failing to follow the established procedure for boric acid corrosion. The licensee entered this issue into their corrective action program as Condition Report 08-8059.

The finding is more than minor because if the failure to ensure that the original assumptions remain valid when the leakage type or color changes continued, then unevaluated degradation of safety-related components could continue and lead to a more significant safety concern. The finding is associated with the Initiating Events cornerstone attribute of human performance and it affects the cornerstone objective of limiting those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. This finding was determined to be of very low safety significance based on Inspection Manual Chapter 0609, Appendix A, Phase 1 worksheet of the Significance Determination Process because it did not result in exceeding the Technical Specification limit for reactor coolant system leakage or affect other mitigating systems resulting in a loss of safety function. In addition, this finding had human performance crosscutting aspects associated with resources, in that, station personnel had a high number of backlog items related to the boric acid corrosion control program resulting in personnel not following the timelines

established by the procedure [H.2(a)].

Inspection Report# : 2008003 *(pdf)*

Mitigating Systems

Significance: G Dec 31, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Adequately Perform Routine Operator Rounds Results in the Creation of Fire Hazards
The inspectors identified two examples of a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V (Procedures), for the failure to adequately perform routine operator rounds in accordance with station procedures. Plant operators had failed to observe degraded material conditions (oil soaked insulation) and abnormal oil leakage onto the floor below Essential Chiller 22C, and stray material (oil absorbent pads) in between the cylinder heads of the standby Diesel Generators 11 and 13. The inspectors determined that both examples resulted in fire hazards. The licensee implemented corrective actions to remove the fire hazards and entered the concerns into their corrective action program as Condition Reports 08-18903, 08-19296, 09-184, and 09-195.

The finding was more than minor because it was similar to example 4.f of Manual Chapter 0612, Appendix E, "Examples of Minor Issues," because both conditions created a fire hazard. The inspectors used NRC Inspection Manual Chapter 0609, Appendix F, “Fire Protection Significance Determination Process,” to determine that the finding was of very low safety significance because the deficiency resulted in a low degradation rating that minimally impacted the plant combustible material controls program element of the fire prevention and administrative controls category. In addition, the finding had a Problem Identification and Resolution crosscutting aspect (corrective action program component), because operators failed to implement a corrective action program with a low threshold for identifying issues [P.1(a)].

Inspection Report# : 2008005 *(pdf)*

Significance: G Sep 27, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Procedures Resulted in Isolation of Majority of Fire Water
The inspectors reviewed a self-revealing noncited violation of Technical Specification 6.8.1.d for the failure to follow Procedure 0PGP03-ZF-0018, “Fire Protection System Operability Requirements,” Revision 14. As a result the licensee unintentionally isolated fire water to all of Unit 2 and a majority of Unit 1. The licensee entered this issue into the corrective action program for resolution.

The inspectors determined the finding was more than minor because it affected the mitigating systems cornerstone objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the finding using the fire protection significance determination process. The finding screened to a Phase 2 based on a high degradation rating and the number of areas impacted. The Phase 2 screening resulted in a high degradation rating based on the number of areas impacted. Consequently, the licensee performed a detailed probabilistic risk assessment analysis using their fire probabilistic risk assessment model, and determined that the overall increase in core damage probability and in large early release probability was of very low safety significance. The regional senior reactor analyst compared the licensee’s results with the NRC’s review of the individual plant examination of external events and concluded that the results were essentially identical. Based on these results, the inspectors determined that the risk significance of the event was of very low safety significance. Additionally, the inspectors determined that the issue had crosscutting aspects associated with the work control component of human performance, in that, the licensee did not incorporate the impact of work on different job activities, the need for work groups to stay apprised of work status, operational impact of work activities, and other plant conditions that may affect the work activity [H.3(b)].

Inspection Report# : 2008004 *(pdf)*

Significance: G Jan 22, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Specify Setpoint Calibration Limits in Relay Setpoint Calculations
The team identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance for the failure to specify in a design calculation allowable relay setpoint tolerances. Specifically, the licensee failed to specify and verify in the relay setpoint calculations the relay setpoint tolerances used in the calibration test procedures. The issue was documented in the corrective action program as Condition Record 07-15443.

The finding was determined to be more than minor because it is associated with the Mitigating Systems cornerstone attribute of "Design Control." It impacts the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events and prevent undesirable consequences. The failure to verify the effects of relay setpoint tolerances on relay coordination time intervals could have resulted in a loss-of-relay coordination and could lead to either a loss of power to safety-related components or lead to a potential for compromising other equipment on a single fault that the relay was designed to isolate. Using Manual Chapter 0609, Appendix A, “Significance Determination of Reactor Inspection Findings for At-Power Situations,” Phase 1 screening, the finding screened as having very low safety significance (Green) because the condition did not represent a loss of safety function of a system or a train.
Inspection Report# : 2007007 *(pdf)*

Significance: G Jan 22, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Manual Loads not Considered for Fuel Oil Storage Tank Sizing Calculation
The team identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," having very low safety significance for the failure to include all potential loads in the standby diesel generator fuel oil sizing calculation. Specifically, the licensee did not account for increased standby diesel generator fuel oil usage resulting from the addition of manual electrical loads during the 7-day mission run time. The licensee entered this finding into their corrective action program as Condition Record 07-15592. The licensee subsequently demonstrated that the spent fuel pool cooling pumps would be the only additional manual loads actually used during the 7 days of operation in the bounding design basis scenario and that there were additional conservative assumptions in the sizing calculation to demonstrate sufficient margin.

The finding was determined to be more than minor because it is associated with the Mitigating Systems cornerstone attribute of "Design Control." It impacts the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events and prevent undesirable consequences. Using Inspection Manual Chapter 0609, Appendix A, “Significance Determination of Reactor Inspection Findings for At-Power Situations,” Phase 1 screening, the finding screened as having very low safety significance (Green) because it was a design or qualification deficiency confirmed not to result in loss of operability or functionality.

Inspection Report# : 2007007 *(pdf)*

Significance: G Jan 22, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Use Correct Design Inputs in Determination of the Weak Link for the Auxiliary Feedwater System Outside Containment Isolation Motor Operated Valves
The team identified a noncited violation of 10 CFR Part 50, Appendix B, Criteria III, "Design Control," of very low safety significance for the failure to translate design basis information into specifications and procedures. Specifically, a non-conservative system pressure was used as an input to an engineering design calculation for the auxiliary

feedwater outside containment isolation valves. This finding has been entered into the licensee's corrective action program as Condition Record 07-15455.

The finding was determined to be more than minor because it is associated with the Mitigating Systems cornerstone attribute of "Design Control." It impacts the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events and prevent undesirable consequences. Using Inspection Manual Chapter 0609, Appendix A, “Significance Determination of Reactor Inspection Findings for At-Power Situations,” Phase 1 screening, the finding screened as having very low safety significance (Green) because it did not represent a loss safety function of a system or a train.

Inspection Report# : 2007007 *(pdf)*

Significance: G Jan 22, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Surveillance Procedure Lacked Check for Timing of Chiller Loading on the Bus
The team identified a noncited violation of Technical Specification Surveillance Requirement 4.8.1.1.2.E.11, having very low safety significance for the licensee’s failure to adequately perform the technical specification surveillance requirement. Specifically, the licensee failed to verify the loading times of the essential chillers in order to verify the automatic load sequence timer was operable. This issue was entered into the licensee’s corrective action program as Condition Records 07 14903 and 07-14959.

The finding was determined to be more than minor because it is associated with the Mitigating Systems cornerstone attribute of "Design Control." It impacts the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events and prevent undesirable consequences. Using Inspection Manual Chapter 0609, Appendix A, “Significance Determination of Reactor Inspection Findings for At-Power Situations,” Phase 1 screening, the finding screened as having very low safety significance (Green) because it did not represent a loss of safety function of a system or a train.

Inspection Report# : 2007007 *(pdf)*

Significance: G Jan 22, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Test Program for 125V DC Molded Case Circuit Breakers
The team identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," having very low safety significance for the licensee’s failure to implement a test program to assure that all installed safety-related molded case circuit breakers will perform satisfactorily in service. Specifically, the licensee had not adequately exercised or subjected to periodic testing all of the 125V dc molded case circuit breakers since initial plant operation. The licensee entered the finding into their corrective action program as Condition Record 07-15817.

The finding was determined to be more than minor because it is associated with the Mitigating Systems cornerstone attribute of "Equipment Performance.” It impacts the cornerstone objective of ensuring the availability, reliability, capability of systems that respond to initiating events and prevent undesirable consequences. Using Inspection Manual Chapter 0609, Appendix A, “Significance Determination of Reactor Inspection Findings for At-Power Situations,” Phase 1 screening, the finding screened as having very low safety significance (Green) because it did not result in a loss of safety function of a system or a train.

Inspection Report# : 2007007 *(pdf)*

Significance: G Jan 22, 2008
Identified By: NRC
Item Type: NCV NonCited Violation

Failure to Incorporate Instrument Uncertainties into Surveillance Requirements for Technical Specification Limiting Condition for Operation 3.5.2 (Specifically Surveillance Requirement 4.5.2.f)
The team identified a noncited violation of 10 CFR Part 50, Appendix B, Criteria III, "Design Control," of very low safety significance for the failure to adequately translate design basis information into specifications and procedures. Specifically, measurement instrument uncertainties were not included in the determination of minimum allowed high head safety injection pump and low head safety injection pump developed head values used during periodic technical specification surveillance testing. The licensee entered the finding into their corrective action program as Condition Record 07-15752.

The finding was determined to be more than minor because it is associated with the Mitigating Systems cornerstone attribute of "Design Control." It impacts the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events and prevent undesirable consequences. Using Inspection Manual Chapter 0609, Appendix A, “Significance Determination of Reactor Inspection Findings for At-Power Situations,” Phase 1 screening, the finding screened as having very low safety significance (Green) because it did not result in a loss of safety function of a system or a train.

Inspection Report# : 2007007 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

Significance: N/A Aug 14, 2008
Identified By: NRC
Item Type: FIN Finding
Identification and Resolution of Problems
The team reviewed approximately 360 condition reports, work orders, associated root and apparent cause evaluations, and other supporting documentation to assess the problem identification and resolution process. The team also performed a five year review of the essential cooling water system to determine whether problems were being

effectively addressed. As a result of these reviews, the team concluded that the licensee was generally effective in identifying, evaluating, and ultimately correcting problems. The team also determined that the procedures and program controls associated with the corrective action program were well established. However, these implementing processes were not consistently followed and corrective actions were not always completed in a timely manner.

The team reviewed a sample of condition reports that involved operability issues to assess the adequacy and timeliness of the operability assessment process. The team noted that problems with operability review have existed throughout the period. Specifically, the station has repeatedly documented operability review issues in condition reports, in audits, and during Executive Oversight Review Board reports. However, changes to address these issues were not implemented until April 2008, and insufficient time has elapsed to adequately evaluate the effectiveness of these changes.

Overall, the team determined that the licensee had appropriately evaluated industry operating experience for relevance to the facility, and had entered applicable items in the corrective action program. However, once this information was disseminated, the reviews and other actions associated with or generated as part of the condition report actions were not being completed in a timely manner. The team noted improvement in the use of internal and external operating experience during the planning of work evolutions. The team also determined that the licensee was evaluating industry operating experience when performing root cause and apparent cause evaluations.

Although quality assurance audits have been effective in identifying substantive issues and areas for improvement, some of the associated actions have not been acted upon in a timely manner. Other self-assessment activities were narrowly focused and often did not identify any insightful issues concerning performance which limited the value of the assessment.

Overall, the team concluded that there was a safety conscious work environment in place at South Texas Project. In particular, the team also determined that a number of improvements have been implemented to address communication challenges and cultural issues related to the security organization. Despite these improvements, the team did encounter instances where personnel did not feel that their concerns were being adequately addressed. Subsequent to the completion of extensive safety conscious work environment interviews involving 60 personnel, the team determined that many of the individuals questioned lacked confidence in the effectiveness of the Employee Concerns Program.

Inspection Report# : 2008009 *(pdf)*

Last modified : April 07, 2009