South Texas 2
2Q/2009 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)*

Mitigating Systems

Significance: G Apr 09, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Assess and Manage Outage Maintenance Risk Activities Resulting in the Loss of the Residual Heat Removal System
The inspectors reviewed a self-revealing noncited violation of 10 CFR 50.65(a)(4), for the failure to assess and manage risk from an emergent maintenance work activity on the solid state protection system during the Unit 2 refueling outage that resulted in a loss of the residual heat removal system. Specifically, on October 25, 2008, the licensee planned an emergent maintenance activity to replace a general logic card on the solid state protection system without adequately assessing the risk to the plant. Consequently, when the logic card was removed, the low steam pressure safety injection actuation signal became unblocked and resulted in the loss of the operating residual heat removal system pumps. The licensee's immediate corrective action was to restore the residual heat removal system to operation and enter the issue into their corrective action program.

The finding was more than minor because it was associated with the Mitigating Systems cornerstone attribute of equipment performance and adversely affected the cornerstone objective of availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the Phase 1 screening criteria of Inspection Manual Chapter 0609, Appendix G, "Shutdown Operations Significance Determination Process,"

Attachment 1, Checklist 4, the finding screened to a Phase 2 quantitative analysis because no residual heat removal loops were in operation. The finding was determined to be of very low safety significance because the Phase 2 screening by the senior reactor analyst concluded that the conditional core damage probability from this event was approximately 1E-08. In addition, this finding had human performance crosscutting aspects associated with decision making [H.1(a)] because the licensee failed to make risk-significant decisions using a systematic process to ensure safety is maintained, and did not formally define authority and roles for key personnel responsible for implementing these risk-significant decisions.

Inspection Report# : 2009002 *(pdf)*

Significance: G Apr 09, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Reportability Misses an Inoperable Component Cooling Water Train
The inspectors identified a noncited violation of Technical Specification 3.7.3 for an inadequate reportability review on the Train A component cooling water low-level actuation switch which failed during surveillance testing. On October 14, 2008, during the 18-month surveillance test, Unit 2 component cooling water Train A was determined to be inoperable due to the failure of system valves to actuate to their designated positions. The inspectors continued to ask questions related to the event and discovered that the last time the switch was manipulated was January 22, 2008, during a calibration procedure. After the inspectors questioned the reportability, engineering reviewed it and determined that the calibration procedure did not have a functional check of the switch internal contacts before restoration. Engineering concluded that, as a result of the switch not being functionally checked after the calibration, that the wire must have become disconnected during the restoration section of the procedure. Consequently, from January 22, 2008 through October 16, 2008, the Train A component cooling water low-low level switch was inoperable and therefore reportable. The licensee performed a root cause of the event itself and an apparent cause for operations inappropriately applying time of discovery for the initial reportability review under Condition Reports 08-15541 and 08-19420, respectively.

The finding was more than minor because, if left uncorrected, it would have the potential to lead to a more significant safety concern in that inadequate operability/reportability reviews could result in a degraded system being returned to service, and it affected the Mitigating Systems cornerstone attribute of human performance and the objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the Significance Determination Process Phase 1 worksheets from Inspection Manual Chapter 0609, the finding was determined to have very low safety significance because it did not result in the actual loss of safety function of one or more trains and it did not screen as risk significant due to seismic, flooding, fire, or severe weather. In addition, this finding had Problem Identification and Resolution crosscutting aspects associated with the corrective action program [P.1(c)] because the licensee failed to thoroughly evaluate for operability and reportability conditions adverse to quality.
Inspection Report# : 2009002 *(pdf)*

Significance: G Apr 09, 2009
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Surveillance Test for Component Cooling Water
The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criteria V, “Instructions, Procedures, and Drawings,” for the inadequate surveillance Procedure 0PSP05-CC-0001, “FCI CCW Surge Tank Compartment Level Switch Calibration,” Revision 7. On October 14, 2008, during the 18-month surveillance test, Unit 2 component cooling water Train A was determined to be inoperable due to the failure of system valves to actuate to their designated positions. Troubleshooting determined that a loose wire was the reason for the inoperability. The wire was restored and the train returned to operable status on October 16, 2008. From January 22 through October 16, 2008, the Train A component cooling water low-low level switch was inoperable. Since this procedure is applicable to all trains of both units, the licensee verified that all other trains low-low level switches on both units were either surveillance tested after the last calibration procedure or were functionally checked using a temporary procedure to ensure operability.

The finding was more than minor because it was similar to several examples in Inspection Manual Chapter 0612, Appendix E, where the system was returned to service without being fully operable, and it affected the Mitigating Systems cornerstone attribute of procedure quality and the objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the Significance Determination Process Phase 1 worksheets from Inspection Manual Chapter 0609, the finding was determined to have very low safety significance because it did not result in the actual loss of safety function of one or more trains and it did not screen as risk significant due to seismic, flooding, fire, or severe weather. This issue had no crosscutting aspects because the last revision to the procedure was too long ago (2005) to be indicative of current performance.

Inspection Report# : 2009002 *(pdf)*

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)*

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)*

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