

South Texas 1

1Q/2008 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Dec 31, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

Incorrect Count Rate Board Installed in Extended Range Nuclear Instrument Channel

The inspectors reviewed a self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criteria V, for the failure to follow Procedure STI 32174927, "Conduct of Maintenance," Revision 5. On April 6, 2007, operations declared extended range nuclear instrument Channel NI46 inoperable due to erratic low range indications, as a result, the licensee replaced the log count rate circuit board in Slot A4 of the processor. On April 14, 2007, operations was taking shiftily logs and recognized that the startup rate channel check was approaching the limit of 0.5 decades per minute. The log count rate circuit board in Slot A4 was replaced again and it was determined that the wrong board had been installed. The licensee's root cause determined that the wrong board was installed because maintenance personnel were not using appropriate reference material to ensure that the correct part was installed.

The inspectors determined that the finding was more than minor because it was associated with the Mitigating Systems cornerstone attribute of equipment and human performance, and it affected the cornerstone objective to ensure the availability of systems that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the finding using Inspection Manual Chapter 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria," and determined that the finding screened as Green because: (1) the licensee had all power, intermediate, and source range nuclear instruments available; (2) the extended range nuclear instruments provide no protective functions other than alarms and indications; (3) the primary function is to provide indication to the operators to assess the sub-criticality critical safety function, and this was only impacted in the "Yellow" path; (4) the Updated Final Safety Analysis Report does not take credit for the extended range nuclear instruments except to provide the operators with a minimum of 15 minutes to respond to a dilution event pending a loss of shutdown margin; and (5) very low likelihood that shutdown margin would be challenged post trip. This finding also had human performance crosscutting aspects associated with work practices, in that, the licensee did not effectively communicate human error prevention techniques such as self and peer checking [H.4(a)], and maintenance personnel did not verify the replacement part using controlled documentation.

Inspection Report# : [2007005](#) (pdf)

Significance: G Dec 31, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

Incorrectly Installed Safety-Related Solenoid Valve Results in Unexpected Steam Dump Valve Operation

The inspectors reviewed a self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criteria V, for an inadequate procedure for testing safety-related solenoid valves that operate the steam dump valves. On December 18, 2006, during troubleshooting activities on Unit 1 to investigate the unexpected response of steam dump Valve N1MSPV7489, the licensee discovered that the safety-related solenoid valve instrument air line connections were crossed, such that the steam dump valve would not close. The licensee had incorrectly connected the instrument air lines in April 1999, and they also identified that they missed several opportunities to identify and correct this condition. The licensee determined that the maintenance procedure for the safety-related solenoid valves was inadequate because it only tested the function of the solenoid, electrical connection, and not the operation of the steam dump valve, instrument air line connection. As part of the corrective actions the licensee corrected the cross connection of the instrument air lines, walked down the other steam dump safety-related solenoid valves, and changed the maintenance procedure.

This finding is more than minor because it affected the Mitigating Systems cornerstone attribute of procedural quality and the objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. Using the Significance Determination Process Phase 1 worksheets, this finding was determined to have very low safety significance (Green) because it did not result in the actual loss of safety function of one or more non-Technical Specification trains of equipment for greater than 24 hours and it did not screen as risk significant due to seismic, flooding, or severe weather. This issue had no crosscutting aspects because the cross connection of the instrument air lines occurred in 1999.

Inspection Report# : [2007005](#) (*pdf*)

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Significance: Oct 11, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Procedure Leads to Inoperable Turbine-Driven AFW Pump for Longer than TSs Allowed Outage Time

The inspectors reviewed a self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criteria V, "Instructions, Procedures, and Drawings," for an inadequate surveillance test procedure on the turbine-driven auxiliary feedwater pump, due to inadequate acceptance criteria for the trip hook and the latch-up lever and the impact distance. As a result, on December 12, 2006, auxiliary feedwater Pump 14 failed to reach rated speed and tripped.

The inspectors determined that the issue was more than minor because it affected the mitigating systems cornerstone attributes of equipment performance and procedure quality, and it affected the cornerstone objective to ensure the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the violation using the significance determination process and determined that it required a Phase 2 analysis. The Phase 2 analysis screened as White and the resultant Phase 3 SPAR model result was an incremental conditional core damage probability of 3E-07. The licensee's Phase 3 analysis gives recovery credit for manual operator action to locally start the turbine-driven pump and resulted in a probability of 3.3E-07, or very low safety significance. This issue had problem identification and resolution crosscutting aspects in that the licensee did not implement and institutionalize operating experience through changes to procedures and training programs [P.2(b)]. The licensee failed to fully evaluate specific operating experience to conclude that the maintenance, surveillance, and operating procedures were inadequate to ensure consistent, repeatable, and reliable measurements to critical components. This lack of fully implementing and institutionalizing operating experience directly contributed to the event.

Inspection Report# : [2007004](#) (*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:  Dec 31, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Reportability Review Results in Missed Reporting Requirement

The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criteria V, for the failure to follow Procedure 0POP03-ZX-0002, "Condition Reporting Process," Revision 31. On April 14, 2007, operations recognized that the extended range nuclear instrument startup rate channel check was approaching the limit of 0.5 decades per minute. The log count rate circuit board was determined to be faulty and was replaced. Operations requested an operability/reportability review since the same circuit board had been previously replaced on April 7, 2007. The inspectors questioned the licensee on the review, because the review did not appear to be performed in the normal manner and did not answer questions related to the indications that were observed, namely the shutdown monitor alarm. The second more thorough review determined that the extended range nuclear instrument had been inoperable for longer than its technical specification allowed outage time and resulted in the requirement to submit a Licensee Event Report. The licensee's root cause determined that the original reviewer did not adhere to the Condition Reporting Process procedure, in that, the reviewer did not review applicable design inputs, and since the reviewer did not have the technical expertise in this area, a technical review should have been requested.

The inspectors determined that the finding was more than minor because it resulted in the licensee not recognizing that an extended range nuclear instrument was inoperable for longer than its Technical Specification allowed outage time. The inspectors evaluated the finding using Inspection Manual Chapter 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria," and determined that the finding screened as Green because: (1) the licensee had all power, intermediate, and source range nuclear instruments available; (2) the extended range nuclear instruments provide no protective functions other than alarms and indications; (3) the primary function is to provide indication to the operators to assess the sub-criticality critical safety function, and this was only impacted in the "Yellow" path; (4) the Updated Final Safety Analysis Report does not take credit for the extended range nuclear instruments except to provide the operators with a minimum of 15 minutes to respond to a dilution event pending a loss of shutdown margin, and (5) very low likelihood that shutdown margin would be challenged post trip. This finding also had problem identification and resolution cross cutting aspects associated with the corrective action program in that the licensee did not thoroughly evaluate for operability and reportability conditions adverse to quality [P.1(c)], the reviewer did not consider all Technical Specifications and design requirements in his evaluation.

Inspection Report# : [2007005](#) (*pdf*)

Significance:  Oct 11, 2007

Identified By: NRC

Item Type: FIN Finding

Loss of Control Room Annunciators due to Poor Worker Material Control for ERFDADS Inverter Upgrade

The inspectors reviewed a self-revealing finding for an inadequate procedure, STI 32174927, "Conduct of Maintenance," Revision 5, for work associated with the Unit 1 emergency response facility data acquisition and display systems inverter modification activities. On August 27, 2007, maintenance personnel were installing a 4-inch diameter conduit in the Unit 1 Train B 4160 volt switchgear room in close proximity to a voltage regulating transformer which was powering Distribution Panels DP 200 and DP 300, which powers approximately 25 percent of the control room annunciators. While installing the conduit, it came into contact with the input breaker on the transformer causing it to open and de-energized Distribution Panels DP 200 and DP 300. All loads lost were recovered in approximately 30 minutes with no additional challenges. As a result of this lack of procedural guidance for working around sensitive equipment, the crews' prejob and at the work site briefs did not recognize the potential impact of working in close proximity to the transformer powering Distribution Panels DP 200 and DP 300.

The failure to adequately control the conduit being installed, as a result of inadequate procedural guidance and which

resulted in 25 percent of control room annunciators being lost, was considered a performance deficiency. This finding was more than minor because it could impact the operator's ability to respond to unusual plant conditions due to lack of control room annunciators, and the reliance on reports from operators in the field; and if left uncorrected, this type of control room deficiency could become a more significant safety concern. The inspectors evaluated the significance of this finding using Inspection Manual Chapter 0609, Appendix M, "Significance Determination Process using Qualitative Criteria," and determined that the finding was of very low safety significance based on the fact that the loss of annunciators did not challenge the ability to determine emergency action levels, was of short duration, did not impact any automatic actuation systems, and the operations crew took immediate corrective and compensatory actions to restore the transformer. This finding had a crosscutting aspect in the area of human performance associated with the work control component because the licensee failed to ensure that adequate guidance was available to properly evaluate specific job site conditions, and the potential for human-system interface [H.3(a)] with regard to sensitive equipment. This directly contributed to the event because the workers were unaware of how their activities could have an impact on sensitive equipment.

Inspection Report# : [2007004](#) (*pdf*)

Last modified : June 05, 2008