

South Texas 1

2Q/2004 Plant Inspection Findings

Initiating Events

Significance: G Jan 23, 2004
Identified By: NRC
Item Type: FIN Finding

Inappropriate operator response to an event resulted in a plant transient.

A finding was identified for the failure of reactor operators to appropriately respond to an event that resulted in a plant transient. On January 23, 2004, operators inappropriately responded to plant conditions which resulted in an event becoming more significant. Operators appropriately diagnosed the failure and operator response was clearly understood and communicated. However, operators inappropriately manipulated the steam generator level controls and did not control steam generator levels in the A and B steam generators. An automatic reactor trip occurred due to high steam generator level in the B steam generator. This issue was more than minor because it was similar to Example 4.b in Manual Chapter 0612, Appendix E, "Examples of Minor Issues," and it met the "not minor if" criteria, in that the error resulted in a plant transient. This issue affected the Initiating Events Cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions, in that operators inappropriately manipulated the steam generator level controls and did not control steam generator levels. A Phase 1 Significance Determination Process determined that the performance deficiency represented a finding of very low risk significance (Green) because it did not contribute to a primary or secondary loss of coolant accident, did not contribute to both the likelihood of a reactor trip and the likelihood that mitigating equipment or function will not be available, and did not increase the likelihood of a fire or internal/external flood. This finding also had crosscutting issues associated with human performance because personnel failed to adequately control steam generator levels due to misoperation of plant equipment.

Inspection Report# : [2004002\(pdf\)](#)

Significance: G Jan 23, 2004
Identified By: NRC
Item Type: NCV NonCited Violation

Ferro-Resonant Transformer Failures in Class 1E Inverters

A noncited violation of 10 CFR Part 50 Appendix B, Criterion XVI, Corrective Action, was identified for the failure to implement effective corrective action for inverter failures that occurred at the South Texas Project. The licensee had identified previous failures of the Class 1E 7.5 kV inverters as significant conditions adverse to quality. However, the licensee did not assure that the cause of the condition was determined and corrective actions were taken to preclude repetition. Reliability of the inverters was reasonably within the licensee's ability to foresee and correct and these failures could have been prevented. The failure of the inverters resulted in additional significant events, including a plant transient. The Phase 1 SDP screening resulted in the need for a Phase 2 evaluation because the finding contributes to both the likelihood of a reactor trip and the likelihood that mitigating equipment will not be available. The Phase 2 evaluation resulted in a finding with a potential of greater than very low safety significance using the counting rule which then necessitated a Phase 3 analysis. This issue was forwarded to a RIV Senior Reactor Analyst for Phase 3 analysis. Phase 3 analysis concluded that the issue was of very low safety significance. Corrective actions included replacing the at fault aged ferro-resonant transformers in all the safety related Class 1E inverters. This finding had crosscutting issues associated with problem identification and resolution because personnel failed to correct degraded conditions.

Inspection Report# : [2004002\(pdf\)](#)

Significance: G Dec 27, 2003
Identified By: NRC
Item Type: NCV NonCited Violation

Inappropriate operator response to an event resulted in multiple pressurizer PORV lifts during operations in a water solid condition.

The inspectors identified a noncited violation of Technical Specification 6.8.1.a regarding Regulatory Guide 1.33 required procedure. Licensee procedure "Conduct of Operations," Revision 21, requires, in part, that if the plant does not perform or respond as expected, operations personnel will take conservative action to return the plant to a known condition. On March 26, 2003, operators inappropriately responded to plant conditions making an event more significant because operators did not understand and control the impact of the restoration of power to an instrumentation panel. They also did not understand the interactions between the normal pressurizer controller and the cold overpressure mitigation system. This issue was greater than minor because it affected the Initiating Events Cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown operations, in that operators contributed to initiating this event and making it more significant. The performance deficiency was determined to represent a finding of very low safety significance. This was based on a Phase 1 screening in accordance with Manual Chapter 0609, Appendix G, "Shutdown Operations Significance Determination Process." The major factors in this determination were the continued availability of methods to control reactor coolant system pressure and the short period of time that the cold overpressure mitigation system was nonfunctional.

Inspection Report# : [2003004\(pdf\)](#)

Mitigating Systems

Significance:  Sep 20, 2003

Identified By: NRC

Item Type: NCV NonCited Violation

Ineffective maintenance practices for motor operated valve actuators resulted in failure of a residual heat removal valve actuator.

A non-cited violation of 10 CFR 50, Appendix B, Criterion V, was identified related to ineffective maintenance practices for motor operated valve actuators. Ineffective maintenance practices resulted in the failure of a residual heat removal valve actuator and for numerous similar problems in other valve actuators. Specifically, the licensee failed to implement procedural requirements to develop, perform, track, and close out corrective actions for vendor technical bulletins and advisories. Guidance from a 1989 vendor advisory alerting the licensee to failures of motor operated valve actuators and recommending corrective measures was incorporated into station maintenance procedures without taking action to assure that actuators in the plant were actually corrected.

Inspection Report# : [2003003\(pdf\)](#)

Barrier Integrity

Significance:  Jan 21, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

Inadequate procedure results in relief valve opening.

A Green noncited violation of Technical Specification 6.8.1.a and Regulatory Guide 1.33, Appendix A, was identified for an inadequate procedure that resulted in a letdown pressure relief valve opening during a letdown orifice swap. Operators failed to manipulate the letdown orifice isolation valve in a manner that properly controlled pressure in the chemical and volume control system. As a result, the letdown line relief valve opened, diverting reactor coolant system inventory to the primary relief tank. Corrective actions for this event included enhancing the procedure by adding notes and precautions and holding lessons learned sessions with operators. This finding is greater than minor because the opening of the letdown relief valve increased the risk of an initiating event of an interfacing system small loss of coolant accident and degraded the reactor coolant system barrier integrity and therefore could be reasonably viewed as a precursor to a significant event. A Phase 1 screening passed to a Phase 2 evaluation because the letdown line relief that lifted could have failed to reseal or could have continually blown down if not isolated. The Phase 2 evaluation resulted in a Green determination. However, the result was unreliable because the tool did not accurately model the event. Under the Phase 3 analysis, a Region IV Senior Reactor Analyst evaluated several scenarios involving mechanical and human error failures that could result in the failure of the safety relief to close and/or failure of letdown isolation contributing to the continued draining the reactor coolant system. The result indicated that the risk significance of the performance deficiency that caused the event was very low.

Inspection Report# : [2004003\(pdf\)](#)

Emergency Preparedness

Occupational Radiation Safety

Significance:  Apr 16, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

Two examples of failure to control high radiation areas.

The inspector reviewed two examples of a Green noncited violation of Technical Specification 6.12.1, in which the licensee failed to control high radiation areas. On May 3, 2003, the licensee identified, during routine surveys, an uncontrolled high radiation area in Unit 1, Room 108C. The licensee initially concluded that the apparent cause was a plant system that introduced unpredictable dose rates. However, as a result of the inspector's questions, the licensee reviewed the matter further and concluded the cause was a lack of plant system knowledge on the part of some radiation protection personnel. The licensee re-opened the original condition report and re-entered it to the corrective action program. The licensee was alerted to a second example when a worker's electronic dosimeter alarmed on April 6, 2004, as the individual worked on scaffolding under Unit 2 Steam Generators B and C. The dose rates were not identified before the worker entered the area because the responsible radiation protection technician was unaware of the existence of drain lines from Steam Generators B and C. The licensee placed the finding into its corrective action program.

The failures to correctly control high radiation areas were performance deficiencies. These examples of a finding were greater than minor because they were associated with one of the cornerstone attributes and affected the cornerstone objective, in that, inadequate exposure controls of high radiation areas affected the licensee's ability to ensure adequate protection of worker health and safety from exposure to radiation. Because the examples of a

finding involved the potential for workers to receive significant, unplanned, unintended dose as a result of conditions contrary to technical specification requirements, the inspector used the Occupational Radiation Safety Significance Determination Process described in Manual Chapter 0609, Appendix C, to analyze the significance of the examples. The inspector determined that the examples were of very low safety significance because they did not involve (1) ALARA planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. The first example of this finding also had crosscutting aspects associated with problem identification and resolution. The original cause determination was inadequate.

Inspection Report# : [2004003\(pdf\)](#)

Significance:  Jan 08, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

Three examples of the failure to follow Technical Specification required procedure.

The inspectors identified three examples of a noncited violation of Technical Specification 6.8.1(a) because the licensee failed to follow procedural requirements. Procedure OPGP03-ZA-0010, required station personnel to stop and resolve an issue when the performance of a procedure step would not have achieved the desired result. During the initial setup and leak check of a reusable waste container, the operator was required to ensure that valve 1(2)-WS-0077 was open. However, the procedure incorrectly referred to valve 1(2)-WS-0077 instead of the correct valve 1(2)-WS-0079. Ensuring valve 1(2)-WS-0077 was open would not have achieved the desired result. On April 20, July 8, and July 20, 2003, the licensee failed to stop and resolve the error with the reference to the incorrect valve. The failure to follow procedural requirements are three examples of a performance deficiency. The finding is greater than minor because it could be reasonably viewed as a precursor to a significant event and it affected the Occupational Radiation Safety cornerstone objective, which is to ensure adequate protection of worker health and safety from exposure to radiation. The finding was associated with the cornerstone attribute of Program and Process. When processed through the Occupational Radiation Safety Significance Determination Process (SDP), the finding was found to have very low safety significance because it was not associated with ALARA planning or work controls, there was no overexposure or a substantial potential for overexposure, and the ability to assess dose was not compromised.

Inspection Report# : [2004002\(pdf\)](#)

Public Radiation Safety

Physical Protection

[Physical Protection](#) information not publicly available.

Miscellaneous

Last modified : September 08, 2004