South Texas 1
3Q/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 XVl, 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 ina 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: G Jul 07, 2004
Identified By: NRC
Item Type: FIN Finding
Fire safe shutdown analysis did not account for the impact of reactor coolant seal leakage.
A Green finding was identified associated with Fire Safe Shutdown Analysis because the licensee had not accounted for the impact of expected reactor coolant pump seal leakage. The licensee's Fire Safe Shutdown Analysis credited charging borated water for maintaining both reactivity control and reactor coolant inventory control functions. However, in a number of fire areas charging was procedurally stopped to avoid damaging the charging pumps as a result of a spurious closing of either of the motor-operated volume control tank suction valves. The Operator Action List directed establishing charging within 2 hours. The inspector determined that there was no analytical basis for allowing charging to be secured this long. Because the licensee was able to re-perform the safe shutdown analyses and demonstrate that the plant could meet its fire safe shutdown design without charging or seal injection for 2 hours, no violation of NRC requirements existed. This issue was determined to be more than minor because it was similar to Example 3.i of Manual Chapter 0612, Appendix E in that the Fire Safe Shutdown Analysis had to be re-performed to assure that the acceptance criteria were met. This issue affected the Mitigating Systems Cornerstone because it related to the availability of charging when it was required to mitigate the effects of a fire. This issue was determined to have very low safety significance because it involved a design deficiency confirmed not to result in a loss of function.

Inspection Report# : 2004003*(pdf)*

Barrier Integrity

Significance: G Mar 26, 2004
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
Containment Integrity Degraded due to failure to maintain plant equipment configuration control.
A noncited violation of Technical Specification 6.8.1 was identified regarding a partially opened flush line valve in the Train B high head safety injection system that provided a containment bypass leak path. This resulted in a condition where the radiological control room dose limits of General Design Criteria 19 and the offsite dose limits of 10 CFR Part 100 would have been exceeded in the event of a design basis accident. This finding is greater than minor because the finding is associated with the configuration control attribute of the barrier integrity cornerstone and affects the cornerstone objective to provide reasonable assurance that the physical design barrier would protect the public against a release caused by a loss of coolant accident. A Phase 2 evaluation was required because the finding represented an actual open pathway in the physical integrity of reactor containment. The Phase 2 evaluation determined that the leak rate would be less than 10 percent of the containment volume. Because the leakage from containment to the environment was not greater than 100 percent of the containment volume per day, in accordance with NRC Inspection Manual Chapter 0609, Appendix H, Section 6.1, step 3, "Phase 2 Assessment," this finding was of very low risk significance .
Inspection Report# : 2004004*(pdf)*

Significance: G Mar 05, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to comply with Technical Specification surveillance requirements for control room envelope.
A noncited violation of Technical Specification 3.7.7.c and 4.7.7.e.3 was identified regarding control room envelope heating, ventilation, and air conditioning testing that identified some control room envelope areas not being at 1/8-inch water gauge positive pressure with respect to an adjacent area as required. The licensee requested and received a Notice of Enforcement Discretion (04-06-001) for Technical Specification 3.7.7.c requirements. The failure to demonstrate control room operability in accordance with Technical Specification 4.7.7.e.3 is a performance deficiency. The finding is more than minor because it affected the barrier integrity cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events by maintaining the operational capability of the control room envelope heating, ventilation, and air conditioning boundary. The finding screened as Green, very low safety significance, in Phase 1 of the significance determination process because it represented a degradation of only the radiological barrier function provided for the control room.
Inspection Report# : 2004004*(pdf)*

Significance: G 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 reseat 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: G Sep 02, 2004
Identified By: Self Disclosing
Item Type: NCV NonCited Violation
Failure to use a proper high radiation area radiation work permit.
A self-revealing noncited violation of Technical Specification 6.12.1 was reviewed because a worker entered a high radiation area without proper radiation work permit authorization. On July 28, 2004, an individual received an electronic personal dosimeter alarm after entering a high radiation area in Pipe Penetration Room 211. The radiation work permit used by the individual did not allow entry into such areas. The finding was entered into the licensee's corrective action program. The failure to have proper radiation work permit authorization prior to entering a high radiation area is a performance deficiency. This finding is greater than minor because it is associated with the Occupational Radiation Safety Program and Process attribute and affected the cornerstone objective, which is to ensure adequate protection of the worker health and safety from exposure to radiation. Using the Occupational Radiation Safety Significance Determination Process, the inspector determined that the finding was of very low safety significance because it 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. In addition, this finding had a crosscutting aspect associated with human performance.
Inspection Report# : 2004004*(pdf)*

Significance: G Sep 02, 2004
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to perform a radiological survey.
The inspector identified a noncited violation of 10 CFR 20.1501(a) because a radiological survey was not performed before work commenced. On April 4, 2004, the Unit 2 reactor head was lifted to a 15 - 20-inch hold point during a shift change. Once the hold point was reached, workers began staging stud hole cover equipment near the reactor head flange before a survey was taken to determine the radiological conditions. Immediate corrective actions were to suspend the work activity, move the workers to a low dose area, perform the survey, and inform the workers of the current radiological conditions. In addition, the finding was entered into the licensee's corrective action program. The failure to perform a radiological survey before commencing work activity is a performance deficiency. This finding is greater than minor because it is associated with the Occupational Radiation Safety Program and Process attribute and affected the cornerstone objective, which is to ensure adequate protection of the worker health and safety from exposure to radiation. Using the Occupational Radiation Safety Significance Determination Process, the inspector determined that the finding was of very low safety significance because it 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. In addition, this finding had cross-cutting aspects associated with human performance and problem identification and resolution.
Inspection Report# : 2004004*(pdf)*

Significance: G 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: G 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 0PGP03-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 : December 29, 2004