Grand Gulf 1
3Q/2003 Plant Inspection Findings

Initiating Events

Significance: G Sep 27, 2003
Identified By: NRC
Item Type: FIN Finding
Failure to identify and resolve a single failure vulnerability contributed to a loss of feedwater event and reactor scram.
The inspector identified a self revealing finding because identification and resolution of a single failure vulnerability associated with the condensate system demineralizer isolation valve control circuit was inadequate and contributed to a loss of feedwater event and reactor scram. The licensee documented this finding in their corrective action program as condition report GGNS-CR-2003-300.

The finding is greater than minor because it was viewed as a precursor to a significant event and increased the likelihood of an initiating event such as a reactor scram. The finding is of very low safety significance because, although it caused a loss of feedwater event, it did not contribute to the likelihood of a primary or secondary system loss of coolant accident initiator; did not contribute to a combination of a reactor trip and loss of mitigation equipment functions; and it did not increase the likelihood of a fire or internal/external flood.

Inspection Report# : 2003003*(pdf)*

Significance: G Dec 27, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to prescribe instructions for tightening a reactor recirculation system flange allows unquantifiable torquing of bolts which construct part of the reactor coolant system boundary.
A noncited violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified for failure to establish appropriate instructions for restoration of a reactor recirculation Loop B decontamination flange which resulted in improper torquing of flange bolting and degrading a reactor coolant system pressure boundary. This issue was documented in the licensee's corrective action program as CR-GGN-2002-1988.

The noncited violation is greater than minor because it was related to the initiating events cornerstone objective of limiting the likelihood of an initiating event in the form of a loss of coolant from the flanged pressure boundary. The finding was of very low safety significance because although the bolts were improperly torqued and would have been exposed to reactor coolant system pressure, the bolts were replaced by the licensee prior to taking the reactor coolant system to operating pressure due to inspector intervention.

Inspection Report# : 2002005*(pdf)*

Mitigating Systems

Significance: G Jun 28, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Apply Adequate Design Control Measures Lead to Increased Agastat Relay Failure Rate
The inspectors identified a noncited violation of Criterion III of Appendix B to 10 CFR Part 50 for failure to assure adequate design controls were in place such that Agastat® General Purpose relays would be replaced prior to exceeding their design basis life. As a result, 15 out of 17 failed relays in an 18 month period had exceeded their design basis lives; including 4 relays having one or more contacts that would not perform their safety actuation.

This finding is greater than minor because, if the condition were left uncorrected it would become a more significant safety concern. Specifically, the affected safety-related systems would have a lower reliability and availability since the failure rate of relays used beyond their service life is significantly higher than those relays that are within their service life. A Significance Determination Process, Phase 3 analysis was performed by the Senior Reactor Analyst in Region IV. It considered the impact of the 4 relays that failed to initiate functions. The 4 relays impacted standby service water to the control room air conditioning system and five containment/drywell isolation valves. The analysis was based on a set of core damage sequences that would initiate from normal operations, but only progress given a loss-of-offsite-power or a loss-of-coolant-accident. The core damage sequence would continue only if the loss of control room air conditioning progressed to a point that control room instrumentation began to fail as a result of high temperatures and operators were required to evacuate the control room. Finally, for core damage to occur, operators would have had to fail to properly shutdown the reactor from the alternate shutdown panel. The analysis indicated that, given this core damage sequence, the estimated change in core damage probability was 7.0 x 10-8, and the change in large early release probability was 1.4 x 10-8. The conclusion of this analysis characterized the performance deficiency as an issue of very low safety significance. The licensee implemented an aggressive campaign to replace the affected relays.
Inspection Report# : 2003002*(pdf)*

Significance: G May 09, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to provide procedural instructions for restoring the instrument air system following a loss of instrument air.
The team identified a noncited violation of Technical Specification 5.4.1 for failure of Grand Gulf Nuclear Station to provide an adequate procedure for restoring the instrument air system following a loss of instrument air. The procedure failed to provide instructions on how to provide seal air and control air to the instrument air compressor from a temporary source. This failure resulted in operation of the unit one instrument air compressor in an abnormal configuration which caused damage to its inlet valve and the licensee's inability to restore instrument air header pressure with that compressor. This issue was documented in the licensee's corrective action program as condition report 2003-1347.

This finding was evaluated using the Significance Determination Process and determined to be of very low safety significance. The finding is greater than minor because it affected the mitigating systems cornerstone objective as described in NRC Manual Chapter 0612 involving the ability to ensure the availability, reliability, and capability of systems that respond to initiating events. The finding was of very low safety significance because although the recovery of instrument air was delayed, all mitigating safety system functions remained available.

Inspection Report# : 2003007*(pdf)*

Significance: G Mar 13, 2003

Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Determine Cause of Single Relay Contact Failure-to-Transition
A noncited violation of Criterion XVI of Appendix B to 10 CFR Part 50 was identified for the failure to adequately identify the cause of relay contact failures-to-transition, a significant condition adverse to quality, and corrective actions to prevent recurrence.

This finding is greater than minor because, if the condition were left uncorrected, it would become a more significant safety concern. Specifically, the failure to understand the failure mechanism behind the failure mode mentioned above would impede the licensee's ability to control that failure mechanism and could lead to additional failures of safety-related equipment to actuate when called upon. The finding was determined to be of very low risk significance since no other failures of this type have been experienced since the discovery of the initial five failures
Inspection Report# : 2003006*(pdf)*

Significance: G Jan 24, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to energize required heat tracing at two fire hose stations located in the emergency diesel generator breeze way during prolonged freezing periods.
A noncited violation of Technical Specification 5.4.1.a was identified for failure to provide an adequate administrative procedure for establishing freeze protection measures in the form of heat tracing to fire hose stations located in the emergency diesel generator breezeway. On January 24, 2003, during prolonged freezing temperatures, two fire hose station's heat trace was found unplugged and de-energized. This issue was documented in the licensee's corrective action program as Condition Report CR-GGN-2003-0227.

This finding was evaluated using the Significance Determination Process and determined to be of very low safety significance. The finding is greater than minor because it affected the mitigating systems cornerstone objective as described in NRC Manual Chapter 0612 involving protection against external factors such as fire. The finding was of very low safety significance because, although the fire hose station's heat trace was not energized, it had not frozen and was restored in a timely manner due to inspector intervention.
Inspection Report# : 2002006*(pdf)*

Significance: G Dec 27, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate corrective actions associated with operating the residual heat removal system heat exchanger outlet valve (E12-F003A) beyond its optimum throttling range leads to excessive system vibratio
A noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," was identified for inadequate corrective actions which resulted in operating the residual heat removal system heat exchanger outlet Valve (E12-F003A) beyond its optimum throttling range causing small bore piping failures. This issue was documented in the licensee's corrective action program as CR-GGN-2002-1779.

This self-revealing noncited violation is greater than minor because it affected the mitigating systems cornerstone objective of equipment reliability, in that operation of this valve beyond its optimum throttling capability would lead to system small bore piping failures. The finding was of very low safety significance because all other emergency core cooling systems remained available.

Inspection Report# : 2002005*(pdf)*

Significance: G Dec 27, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate design controls associated with adding a permanent pressure locking modification to a residual heat removal system valve resulted in low stress high cycle fatigue whenever the residual heat
A noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was identified for inadequate design controls which resulted in a pressure locking design modification being completed without provisions for adequate piping supports resulting in a small bore piping failure. This issue was documented in the licensee's corrective action program as CR-GGN-2002-1779.

This self-revealing noncited violation is greater than minor because it affected the Mitigating Systems Cornerstone objective of equipment reliability, in that the inadequate design of the pressure locking piping modification allowed cyclic stress to cause a failure of a small bore piping socket weld. The finding was of very low safety significance because all other emergency core cooling systems remained available.

Inspection Report# : 2002005*(pdf)*

Significance: G Oct 04, 2002
Identified By: NRC
Item Type: NCV NonCited Violation
Performance of maintenance using an inadequate procedure leads to isolation of the reactor core cooling isolation system
Performance of maintenance using an inadequate procedure leads to isolation of the reactor core cooling isolation system.

The licensee failed to establish appropriate instructions for the circumstances when backfilling the reactor core isolation cooling high steam flow transmitter. This resulted in technicians improperly backfilling the detector. This caused the detector to isolate steam to the reactor core isolation cooling turbine, rendering the system inoperable.

This violation of Technical Specification 5.4.1 is noncited in accordance with Section VI.A of the NRC's Enforcement Policy, and is in the licensee's corrective action program (CR-GGN-2002-0947). The finding was of very low safety significance because although the reactor core isolation cooling system was inoperable, all other remaining mitigating systems remained operable and the duration of the system inoperability was short.

Inspection Report# : 2002004*(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Physical Protection

Significance: G Feb 15, 2003
Identified By: NRC
Item Type: NCV NonCited Violation
A visitor without unescorted access was found alone without a required escort in a temporary shelter erected in the protected area for inspections of the standby service water system basins.
A noncited violation of Section 2.E of the Grand Gulf Nuclear Station (GGNS) facility operating license was identified for failure to comply with Section 6.2, "Access Controls," of the GGNS Security Plan. On February 15, 2003, a GGNS employee, performing access control escort duties, failed to control the access of a visiting contractor who was not authorized by the licensee to enter or remain in the protected area without an escort. This issue was documented in the licensee's corrective action program as Condition Report CR-GGN-2003-0544.

This finding was evaluated using the Significance Determination Process and determined to be of very low safety significance. The finding is greater than minor because it affected the physical protection cornerstone objective as described in NRC Manual Chapter 0612 involving unescorted visitor access controls. The finding was of very low safety significance because, although the unescorted visitor was found alone, the individual had no intentions of malevolent acts and there had not been two similar findings in the previous four quarters.

Inspection Report# : 2002006*(pdf)*

Significance: N/A Dec 06, 2002
Identified By: NRC
Item Type: FIN Finding
Verification of Compliance With Interim Compensatory Measures Order
On February 25, 2002, the NRC imposed by Order, Interim Compensatory Measures to enhance physical security. The inspectors determined that, overall, the licensee appropriately incorporated the Interim Compensatory Measures into the site protective strategy and access authorization program; developed and implemented relevant procedures; ensured that the emergency plan could be implemented; and established and effectively coordinated interface agreements with offsite organizations.
Inspection Report# : 2002008*(pdf)*

Miscellaneous

Last modified : December 01, 2003