

Grand Gulf 1

1Q/2010 Plant Inspection Findings

Initiating Events

Significance:  Mar 27, 2010

Identified By: NRC

Item Type: FIN Finding

Failure to Follow Work Instructions Results in Loss of Buss and a Plant Transient (Section 40A3)

Green. The inspectors reviewed a self-revealing finding for a failure to follow work instructions resulting in a loss of 480V power to a bus and a plant transient. Specifically, contract workers were directed by work instructions to enter into a motor control center via its top cable tray to run cables to a spare breaker. Contrary to this, the contract electrical workers deviated from approved work instructions, causing a phase to ground short that tripped the motor control center and resulted in a plant transient. The licensee entered this issue into the corrective action program as Condition Report CR-GGN-2010-01404. This finding is more than minor because it was associated with the initiating events cornerstone attribute of human performance, and it affected the associated cornerstone objective to limit the likelihood of those events that upset plant stability and that challenge critical safety functions during shutdown, as well as during power operations. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, the inspectors concluded that the transient initiator did not contribute to both the likelihood of a reactor trip and to the likelihood that mitigation equipment or functions would not be available. As a result, the issue was of very low safety significance (Green). The cause of this finding has a crosscutting aspect in the area of human performance associated with work practices because the supervisor of the workers failed to ensure the contract workers followed the approved work instructions as required [H.4(c)]. (Section 40A3.3)

Inspection Report# : [2010002](#) (*pdf*)

Significance:  Mar 27, 2010

Identified By: NRC

Item Type: FIN Finding

Inadequate Actions in Response to a Steam Leak Result in an Automatic Reactor Scram (Section 40A3)

Green. The inspectors reviewed a self-revealing finding involving the failure of site management to ensure that adequate corrective actions were implemented to resolve the effects of a large steam leak in the turbine building. Specifically, the reactor experienced an automatic scram on low reactor water level due to the 'B' reactor feed pump minimum flow valve failing open and a subsequent trip of the 'A' reactor feed pump. The scram investigation determined that the minimum flow valve failed open due to condensation in a cable routing box. The condensation was caused by a large steam leak on the second stage moisture separator re-heater drain valve. Cable splices in the box were submerged in water and eventually caused those cables to short to ground. The licensee entered this issue into the corrective action program as Condition Report CR-GGN-2010-01503. This finding is more than minor because it was associated with the initiating events cornerstone attribute of equipment performance, and it affected the associated cornerstone objective to limit the likelihood of those events that upset plant stability and that challenge critical safety functions during shutdown, as well as during power operations. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, the inspectors concluded that the transient initiator did not contribute to both the likelihood of a reactor trip and to the likelihood that mitigation equipment or functions would not be available. This is because the reactor feed pump 'B' was able to restore reactor water level post scram. As a result, the issue was of very low safety significance (Green). The cause of this

- 3 - Enclosure

finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program component because the licensee failed to prioritize and thoroughly evaluate the extent of the cause of the water grounding sensitive electronic equipment in the vicinity of the steam leak [P.1(c)]. (Section 40A3.4)

Inspection Report# : [2010002](#) (*pdf*)

Significance:  Jun 23, 2009

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Failure to Respond to Control Room Alarms in Accordance with Plant Procedures

A self-revealing noncited violation of Technical Specification 5.4.1(a) was reviewed involving a failure to follow the fire alarm response procedure during a fire in the reactor feedwater pump area. The operators failed to investigate the source of a smoke alarm for an hour, allowing a fire to develop beyond the incipient stage before it was discovered. On November 17, 2008, a fire ignited in oil-soaked insulation on the reactor feedwater Pump B. After two weeks of plant operation following a refueling outage, during the November 17 shift turnover meeting, a fire alarm was received in the control room and was acknowledged by an operator. No notifications were made to the shift manager, and no operator or fire brigade member was dispatched. One hour after shift turnover, during normal operator rounds the turbine building operator discovered the fire in the reactor feedwater pump room. The fire brigade was dispatched to extinguish the fire. The licensee entered this condition in the corrective action program as condition report CR-GGN-2008-06584.

The finding was more than minor because it was associated with the initiating events cornerstone attribute of human performance and affected the associated cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. The finding was assessed by performing a bounding analysis using Appendix M of Inspection Manual Chapter 0609. The bounding analysis indicated that the change in core damage frequency would be 4.24×10^{-7} over a 1-year assessment period, indicating that this finding was of very low safety significance. This finding has a crosscutting aspect in the area of human performance with a work practices component for failure to use proper self checking techniques commensurate with the risk of the assigned task to ensure the work is performed safely because operators failed to use self checking techniques when acknowledging the reactor feedwater pump fire alarm [H.4(a)] (Section 4OA3).

Inspection Report# : [2009003](#) (pdf)

Mitigating Systems

Significance:  Mar 27, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Restore Control Room Air Conditioning Subsystem B to Operable Status Within the Required Time of 30 days (Section 1R07)

Green. The inspectors reviewed a self-revealing non-cited violation of Technical Specification 3.7.4 for failing to restore control room air conditioning subsystem B to operable status within the required time of 30 days. Specifically, between March 28, 2009 and June 25, 2009, the control room air conditioner subsystem B was inoperable due to the compressor capacity controller being set incorrectly. The deficiency initially revealed itself on May 14, 2009, when the air conditioner was unable to keep up with demand. The licensee entered this issue into the corrective action program as Condition Report CR-GGN-2009-3779. This finding is more than minor since it affects because it was associated with the equipment performance attribute of the mitigating systems cornerstone, and it adversely affected the cornerstone objective of ensuring the availability, reliability and capability of safety related equipment. Using Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, the finding was determined to be of very low safety significance (Green) because it was not a design or qualification deficiency confirmed not to result in loss of operability or functionality, it does not represent an actual loss of a system safety function, it does not represent the actual loss of safety function of a single train for greater than its technical specification allowed outage time, it does not represent an actual loss of safety function of one or more non-technical specification of equipment designated as risk-significant per 10 CFR 50.65 for greater than 24 hours and it does not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The cause of this finding has a crosscutting aspect in the area of human performance associated with decision making in that the operators did not utilize conservative assumptions to determine system operability [H.1(b)]. (Section 1R07.2).

Inspection Report# : [2010002](#) (pdf)

Significance:  Dec 03, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Procedure Used to Vent the Reactor Core Isolation Cooling System

Green. The team identified a noncited violation of Technical Specification Surveillance Requirement 3.5.3.1 because the licensee failed to establish an adequate procedure to demonstrate compliance with this surveillance requirement. This surveillance requires the licensee to “Verify the RCIC System piping is filled with water from the pump discharge valve to the injection valve,” every 31 days. To implement this requirement, the licensee vents the reactor core isolation cooling (RCIC) pump discharge leg from high point vents. However, the procedure failed to provide adequate qualitative or quantitative acceptance criteria to verify that the piping is maintained filled with water. This problem was previously documented in NRC Inspection Report 05000416/2007005 and entered into the corrective action program; however, the licensee failed to implement effective corrective actions.

The failure of the licensee to effectively implement the surveillance requirement was a performance deficiency. This finding is more than minor because it affects the procedure quality attribute of the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was determined to be of very low safety significance because it did not represent the loss of a system safety function and did not screen as potentially risk significant due to a seismic, flooding, or severe weather-initiating event. This finding has a crosscutting aspect in the corrective action program component of the problem identification and resolution area because the licensee failed to take appropriate corrective actions to address safety issues and adverse trends in a timely manner, commensurate with their safety significance and complexity [P.1(d)] (Section 40A2.5a).

Inspection Report# : [2009008](#) (*pdf*)

Significance:  Dec 03, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Identify and Correct Oil-Impregnated Insulation on Pump Turbines

Green. A noncited violation of 10 CFR 50, Appendix B, Criterion XVI, “Corrective Action,” was revealed on October 26, 2009, when potentially oil-impregnated insulation on the reactor core isolation cooling pump turbine began smoking during a monthly surveillance run. The reactor core isolation cooling pump turbine was shut down and the damaged insulation was removed and replaced. The maintenance technician indicated that the insulation was old and showed signs of possible oil impregnation; however, the licensee disposed of the insulation without performing an analysis. Oil-soaked insulation with a burn mark had previously been identified at a different location on the reactor core isolation cooling pump turbine on February 2, 2009. The licensee was unable to identify the source of the oil in either of these cases. Further, following a November 2008 fire in oil-soaked insulation on a reactor feed pump turbine, the licensee identified that the reactor core isolation cooling pump turbines were vulnerable to fire from similar causes due to a similar configuration. Corrective actions from the previous burnt insulation event and operating experience from the feed pump turbine both failed to prevent the October 26, 2009, smoke event.

Burning of insulation on turbine-driven pump turbines and the potential for creating a fire is a significant condition adverse to quality. The failure of the licensee to determine the cause and to prevent recurrence of a significant condition adverse to quality was a performance deficiency. This finding is more than minor because it affects the equipment performance attribute of the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined that the performance deficiency to be of very low safety significance (Green) because it did not represent the loss of a system safety function and did not screen as potentially risk significant due to a seismic, flooding or severe weather initiating event. This finding has a cross-cutting aspect in the operating experience component of the problem identification and resolution area because the licensee failed to implement and institutionalize operating experience on turbine insulation fires through changes to station processes, procedures, equipment, and training programs [P.2(b)] (Section 40A2.5b).

Inspection Report# : [2009008](#) (*pdf*)

Significance:  Sep 23, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Monitor Performance of a Maintenance Rule Scoped System

Green. The inspectors identified a Green noncited violation of 10 CFR Part 50.65(a)(2) involving the failure to adequately monitor the performance of a maintenance rule scoped system. The licensee's maintenance rule program required evaluation of the area radiation monitoring system for classification as a maintenance rule (a)(1) system after three failures within eighteen months. The licensee had identified two functional failures of the residual heat removal heat exchanger 'A' hatch radiation monitor in June and July 2008. The inspectors identified three other instances of functional failures on components that were used in plant emergency operating procedures and emergency preparedness procedures. These failures were not included in the licensee's maintenance rule database. A total of five functional failures occurred in system components before the licensee considered evaluation of area radiation monitoring as a maintenance rule (a)(1) system in September 2009. The licensee entered this condition in the corrective action program as condition reports CR-GGN-2009-04853 and CR-GGN-2009-04857.

The finding was more than minor because it was similar to Inspection Manual Chapter 0612, Appendix E, Example 7.d, in that equipment performance problems were such that effective control of performance or condition through appropriate preventive Maintenance Under (a)(2) could not be demonstrated. In addition, it affected the equipment performance attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. This finding was characterized under the significance determination process as having very low safety significance because the maintenance rule aspect of the finding did not cause an actual loss of safety function of the system nor did it cause a component to be inoperable. There is no crosscutting aspect associated with this performance deficiency since the cause of this issue does not reflect current licensee performance. (Section 1R12)

Inspection Report# : [2009004](#) (pdf)

Significance:  Sep 23, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Maintain Operator Response Times to Fires

Green. The inspectors identified a Green non-cited violation of Technical Specification 5.4.1(a), for failure to ensure that operators can respond in timely manner to safe shutdown panels in the auxiliary building with a fire in the main control room. The inspectors reviewed a condition report associated with response times of operators to a fire in the protected area with Mississippi river at flood stage. The inspectors questioned the adequacy of response times for fire brigade members and the safe shutdown operator in the event of fire in the control room with the designated operators being outside the protected area. The licensee determined a time critical task would not have been completed due to the safe shutdown operator being outside the protected area. The licensee entered this condition in the corrective action program as condition report CR-GGN-2009-01416.

The inspectors determined this finding to be more than minor since it affected the external events attribute of the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheet, it was determined that the finding screened as potentially risk significant due to external events and required the regional senior reactor analyst to perform a Phase 3 evaluation. The senior reactor analyst determined the likelihood that control room abandonment occurs while the safe shutdown operator is out of the protected area is $9.78E-8$. The change in core damage frequency is lower than this value and small enough that large early release frequency is not required to be considered. Therefore the issue is (Green) of very low safety significance. The cause of this finding has a crosscutting aspect in the area of problem identification and resolution associated with corrective action program in that the licensee failed to perform an appropriate extent of condition when implementing corrective action associated with fire brigade response issue in 2008 [P.1(c)]. (Section 4OA2)

Inspection Report# : [2009004](#) (pdf)

Significance:  Jun 23, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Incorporate Design Changes to Protect the Standby Service Water Slab

The inspectors identified a Green noncited violation of 10 CFR 50 Appendix B, Criterion III involving the failure to incorporate design changes required to limit dynamic loads on the standby service water basin slab. In 1997, the plant experienced damage to the standby service water basin slabs resulting from unanalyzed dynamic loads. During a standby service water system inspection on April 18, 2009, inspectors observed several different tire tracks on the seismically-designed concrete slab that covers and is integral to the safety-related standby service water basin. The inspectors also noted small placards attached to the basin slabs which prohibited moving vehicles on the slabs, and other signs requiring protective mats under any items placed on the slabs. Plant personnel evaluated the loading of the vehicle and determined that the load limits on the basin slab had not been exceeded. The licensee entered this issue into their corrective action program as Condition Report CR GGN 2009 002087.

The inspectors determined this finding affected the design control attribute of the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. In addition, the finding was more than minor because the failure to prevent dynamic loads on the standby service water basin slabs, if left uncorrected, could become more significant safety concern. Using the Manual Chapter of 0609, "Significance Determination Process," Phase 1 Worksheet, this finding was determined to have very low safety significance, because it did not represent an actual loss of a safety function of the standby service water system. There is no crosscutting aspect associated with this performance deficiency since the cause of this issue occurred several years ago and does not reflect current licensee performance (Section 1R04).

Inspection Report# : [2009003](#) (pdf)

Significance:  Jun 23, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Operability Evaluation for Debris Left in the Condensate Storage Tank

The inspectors identified a Green noncited violation of 10 CFR Part 50 Appendix B, Criterion V involving a failure to follow procedures which resulted in an inadequate operability evaluation. During the week of May 18, 2009, the site conducted debris removal in the condensate storage tank. This debris removal was necessary because of a failure to remove all debris in the condensate storage tank during their spring 2007 cleanup project. The licensee performed an operability evaluation for objects left in the condensate storage tank which stated that the high pressure core spray system and reactor core isolation cooling would remain operable for all postulated events. Upon review by the inspectors, the operability evaluation did not address several issues including objects left in the condensate storage tank and condensate system return flow to the condensate storage tank following a plant shutdown/scram. The licensee entered this issue into their corrective action program as Condition Reports CR-GGN-2009-02815 and CR-GGN-2009-02837.

This finding is more than minor because the failure to perform an adequate operability evaluation, if left uncorrected, could become a more significant safety concern. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, this finding was of very low safety significance since it did not result in a loss of operability, nor did it screen as potentially risk significant due to a seismic, flooding, or severe weather-initiating event. The cause of this finding had a crosscutting aspect in the area of problem identification and resolution associated with corrective actions because licensee personnel failed to thoroughly identify all materials left in the condensate storage tank during their original operability determination [P.1(a)] (Section 1R15).

Inspection Report# : [2009003](#) (pdf)

Significance:  Jun 23, 2009

Identified By: NRC

Item Type: FIN Finding

Failure to Perform a Timely Operability Evaluation Following the Discovery of a SSW Fan Failure Mechanism

The inspectors identified a Green finding involving the failure to perform an operability determination after a new failure mechanism was discovered for standby service water Fan B. The inspectors were performing a follow up review of a condition report that detailed a trip of Division 1 standby service water Fan B. The fan had tripped on start up from the control room on December 31, 2007. The licensee had initially determined the trip was due to a faulty solid state trip device. Subsequent testing in failed to identify a problem with the trip device, and the apparent cause of the fan trip was attributed to reverse rotation of the fan. Operations personnel were not informed of this new

information as required by the corrective action program procedure. The licensee entered this issue into their corrective action program as Condition Report CR-GGN-2009-01726.

This finding is more than minor because it was associated with the equipment performance attribute of the reactor safety mitigating systems cornerstone, and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, the inspectors determined that the finding had very low safety significance (Green) since it did not represent an actual loss of a safety function of the standby service water cooling towers, nor did it screen as potentially risk significant due to a seismic, flooding, or severe weather-initiating event. The cause of this finding had a crosscutting aspect in the area of human performance associated with work practices in that licensee personnel failed to apply procedural requirements to write a new condition report when new information was acquired related to the trip of the Division 1 standby service water Fan B [H.4(b)] (Section 4OA2).

Inspection Report# : [2009003](#) (pdf)

Significance:  Apr 02, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Preconditioning of Division II Standby Diesel Generator Jacket Water Heat Exchanger

The team identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for failure to comply with the licensee's Generic Letter 89 13 program, which specifically states that cleaning of heat exchangers covered by this program is prohibited prior to performing an as-found thermal performance test. Specifically, in early 2006, the Division II Standby Diesel Generator (i.e. Emergency Diesel Generator) jacket water cooling heat exchanger was cleaned just prior to performing a five year thermal performance test. The licensee has entered this into their corrective action program as CR-GGN-2009-00904.

This finding is more than minor because it affected the mitigating systems cornerstone attribute of equipment performance of ensuring the availability, reliability, and capability of safety systems that respond to initiating events. Also, using Inspection Manual Chapter 0612, "Power Reactor Inspection Reports," Appendix B, Section 1-3, "Screen for More than Minor – ROP," question 2, the finding is more than minor because if left uncorrected, the performance deficiency would have the potential to lead to a more significant safety concern. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding was determined to have very low safety significance (Green) because it was not a design issue resulting in loss of function, did not represent an actual loss of a system safety function, did not result in exceeding a Technical Specification allowed outage time, and did not affect external event mitigation. The inspectors reviewed the finding for cross-cutting aspects and none were identified.

Inspection Report# : [2009006](#) (pdf)

Significance:  Apr 02, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Non-conservative Bias in Instrumentation Used for Standby Service Water Leak Detection

The team identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for failure to establish adequate measures for the selection and review for suitability of equipment and processes that are essential to the safety-related functions of structures, systems and components. Specifically, the licensee failed to properly design for pulsation effects on flow rate instrumentation used for leak detection in the Standby Service Water system. This instrumentation is needed to meet licensee commitment 10 CFR Part 50, Appendix A, General Design Criterion 13, "Instrumentation and Control," to monitor trends in the ultimate heat sink basin inventory with the system in operation. The system was designed to detect a leakage rate of 1250 gallons per minute, and alarm in the control room at this leak rate, but due to design inadequacies in the instrumentation, the leak rate would have to exceed 3350 gallons per minute before activating the alarm. The licensee has entered this into their corrective action program as CR GGN 2009-00054.

This finding was more than minor because it affected the mitigating systems cornerstone attribute of equipment performance of ensuring the availability, reliability, and capability of systems that respond to initiating events. Also, using Inspection Manual Chapter 0612, "Power Reactor Inspection Reports," Appendix B, Section 1 3, "Screen for

More than Minor – ROP," question 2, the finding is more than minor because if left uncorrected, the performance deficiency would have the potential to lead to a more significant safety concern. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding was determined to have very low safety significance (Green) because it was not a design issue resulting in loss of function, did not represent an actual loss of a system safety function, did not result in exceeding a Technical Specification allowed outage time, and did not affect external event mitigation. The finding was reviewed for cross-cutting aspects and none were identified.

Inspection Report# : [2009006](#) (pdf)

Significance:  Apr 02, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Motor-Operated Valve Calculations Used Non-Conservative Inputs and Methodologies

The team identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control" for failing to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions. Specifically, the licensee used non conservative inputs or methodologies in calculating terminal voltages to safety related motor-operated valve motors that would be required to operate for mitigation of design bases events. The licensee's electrical calculations used non conservative 50 percent locked rotor currents and neglected thermal overload resistance to determine the terminal voltages to safety related motor-operated valves which would predict higher terminal voltages than would actually exist. The calculated terminal voltages were direct design inputs into the applicable motor-operated valves mechanical thrust and torque calculations. The licensee has entered this issue into their corrective action program as CR GGN 2009 00985.

This finding was more than minor because it affected the mitigating systems cornerstone attribute of equipment performance of ensuring the availability, reliability, and capability of systems that respond to initiating events. Also, using Inspection Manual Chapter 0612, "Power Reactor Inspection Reports," Appendix B, Section 1 3, "Screen for More than Minor – ROP," question 2, the finding is more than minor because if left uncorrected, the performance deficiency would have the potential to lead to a more significant safety concern. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding was determined to have very low safety significance (Green) because it was not a design issue resulting in loss of function, did not represent an actual loss of a system safety function, did not result in exceeding a Technical Specification allowed outage time, and did not affect external event mitigation. This finding has a cross cutting aspect in the area of Problem Identification and Resolution, in that self assessments are of sufficient depth, are comprehensive, are appropriately objective, and are self critical. The licensee had conducted a Component Design Bases Assessment, LO GLO 2008 00044 in August 2008, and failed to adequately assess an identical finding identified at River Bend Station during their 2008 Component Design Bases Inspection. The licensee had determined that this issue was not applicable at Grand Gulf Nuclear Station.

Inspection Report# : [2009006](#) (pdf)

Significance:  Apr 02, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Corrective Actions for Replacement of Safety-Related Batteries

The team identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," for failure to identify and correct a condition adverse to quality related to the seismic qualification of the Division III High Pressure Core Spray safety-related battery. Specifically, the licensee failed to identify an incorrectly installed end bracket after replacement of the Division III safety-related battery in 2002 using procedures, work instructions, and drawings that were supposed to have been corrected after this same issue was identified during a 1997 battery replacement activity. The licensee has entered this into their corrective action program as CR-GGN-2009-00830.

This finding was more than minor because it affected the mitigating systems cornerstone attribute of external events for ensuring the availability, reliability, and capability of systems that respond to initiating events. Also, using Inspection Manual Chapter 0612, "Power Reactor Inspection Reports," Appendix B, Section 1-3, "Screen for More than Minor – ROP," question 2, the finding is more than minor because if left uncorrected, the performance deficiency would have the potential to lead to a more significant safety concern. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding was determined to have very low safety significance (Green) because it was confirmed to not result in a loss of operability or functionality. The finding was

reviewed for cross-cutting aspects and none were identified.

Inspection Report# : [2009006](#) (pdf)

Significance:  Apr 02, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Two Examples of a Failure to Meet 10 CFR Part 50, Appendix B, Criterion XI, "Test Control"

The team identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," with two examples. Specifically, the team identified that the licensee failed to develop and implement adequate testing programs for Class 1E molded-case circuit breakers, and for the voltage and frequency response of the standby diesel generators that met design or vendor requirements and recommendations. In response, the licensee entered these examples in the corrective action program as CR GGN 2009 01024, and CR GGN-2009-01057.

This finding was more than minor because it affected the mitigating systems cornerstone attribute of external events for ensuring the availability, reliability, and capability of systems that respond to initiating events. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, each example was determined to be of very low safety significance (Green) because they did not represent a loss of system safety function, did not represent an actual loss of safety function of a single train for greater than its Technical Specification allowed outage time, did not represent an actual loss of one or more risk-significant non-Technical Specification trains of equipment for greater than 24 hours, and did not screen as potentially risk-significant due to seismic, flooding, or severe weather. This finding has a cross cutting aspect in the area of Problem Identification and Resolution, in that self assessments are of sufficient depth, are comprehensive, are appropriately objective, and are self critical. The licensee had conducted a Component Design Bases Assessment, LO-GLO-2008-00044 in August 2008, and failed to adequately assess an identical finding identified at River Bend Station during their 2008 Component Design Bases Inspection. The licensee had determined that this issue was not applicable at Grand Gulf Nuclear Station.

Inspection Report# : [2009006](#) (pdf)

Significance:  Apr 02, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Design Control for Standby Service Water Pump Cables and Electrical Vaults

The team identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for failure to adequately demonstrate operability for the 4160 volt Standby Service Water Pump kerite cables through adequate testing and analysis in a continuously submerged environment. Furthermore, the environment for these continuously submerged cables exists because each of the two vaults that contain these cables (MH 20 and MH 21) has a design flaw, in that several other vaults gravity drain to them and the design of these vaults did not include a sump pump or other means for water to be removed or drained from them. The licensee has entered this into their corrective action program as CR-GGN-2009-01028.

This finding is more than minor because it affected the mitigating systems cornerstone attribute of design control of ensuring the availability, reliability, and capability of safety systems, and closely parallels Inspection Manual Chapter 0612, Appendix E, Example 3.j, because there was reasonable doubt on the continued operability of the Standby Service Water system. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheets, the finding was determined to be of very low safety significance (Green) because it was not a design issue resulting in loss of function, did not represent an actual loss of a system safety function, did not result in exceeding a Technical Specification allowed outage time, and did not affect external event mitigation. The inspectors determined that the finding has a crosscutting aspect in the area of Problem Identification and Resolution in that the licensee failed to implement Operating Experience directly communicated with a Generic Letter through changes to station processes, procedures, and equipment.

Inspection Report# : [2009006](#) (pdf)

Significance: G Mar 27, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Operator Failed to Move a Fuel Assembly in Accordance with Station Procedures

Green. The inspectors reviewed a self-revealing non-cited violation of Technical Specification 5.4.1a when a fuel handling platform operator failed to move a fuel assembly in accordance with station procedures. Specifically, a new fuel assembly and the fuel handling platform mast were damaged when the platform was moved away from the fuel preparation machine prior to ensuring that the fuel assembly was clear of the machine. The licensee entered this issue into the corrective action program as Condition Report CR-GGN-2010-01883. This finding is more than minor because the finding was associated with the human performance attribute of the barrier integrity cornerstone and adversely affected the cornerstone's objective to provide reasonable assurance that physical design barriers (i.e. fuel cladding) protect the public from radionuclide releases caused by accidents or events. The failure to follow the fuel handling procedures affected the cornerstone's objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Inspection Manual Chapter 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1-Initial Screening and Characterization of Findings," was used to evaluate the significance of the finding. Attachment 0609.04, Table 4a, was used to evaluate the impact of the finding on fuel clad integrity. Since the finding represented a fuel handling error that did not cause damage to fuel clad integrity, the finding was determined to be of very low safety significance (Green). The finding has a cross cutting aspect in the work practices component of the human performance area because the operator performing the fuel movement and the spotter providing oversight of the fuel movement failed to employ effective self and peer checking techniques such that fuel handling activities were performed safely [H.4.(a)]. (Section 40A3.5)

Inspection Report# : [2010002](#) (*pdf*)

Significance: G Jun 23, 2009

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Failure to Fully Close a LPCS Manual Valve Resulted in Leakage of Water into the Condensate and Refueling Water Storage System

The inspectors reviewed a self-revealing Green noncited violation of Technical Specification 5.4.1(a) involving a failure to implement the low pressure core spray system operating instruction correctly. On April 20, 2009, the site was performing a low pressure core spray quarterly surveillance. During the test, the suppression pool level lowered approximately 0.8 inches, which equates to approximately 3600 gallons of water. Plant personnel investigated these anomalies and determined that the low pressure core spray pump had pressurized the condensate and refueling water storage system due to a partially opened manual fill valve. This valve is a chain-fall operated valve and was approximately five turns open. The licensee entered this issue into their corrective action program as Condition Report CR-GGN-2009-02073.

The finding was more than minor because it was associated with configuration control attribute of the reactor safety barrier integrity cornerstone, and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers would protect the public from the radionuclide releases caused by accident or events. Using Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, the finding was determined to be of very low safety significance (Green) since it only represents a degradation of the radiological barrier function provided for the auxiliary building. The cause of this finding has a crosscutting aspect in the area of human performance associated with resources in that the operators did not have specific training in chain-fall type valve operation [H.2(b)] (Section 1R22).

Inspection Report# : [2009003](#) (*pdf*)

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 Dec 03, 2009

Identified By: NRC

Item Type: FIN Finding

Grand Gulf Nuclear Station 2009 Biennial PI&R Inspection Summary

The inspectors concluded that the licensee was, in general, effective in identifying, evaluating, and resolving problems. Grand Gulf personnel were identifying and entering issues into the corrective action program at appropriately low thresholds as evidenced by a large number of condition reports issued; however, the team identified several minor deficiencies during walkdowns that had become masked to the employees due to the general lack of cleanliness in the plant. The team determined that the licensee generally screened issues appropriately for operability and reportability; however, five examples were identified where the licensee failed to perform an adequate operability determination. The team noted that issues were typically identified promptly and prioritized commensurate with their safety significance. Most root and apparent cause analyses appropriately considered extent of condition and previous occurrences. The team concluded that the corrective actions were generally identified and implemented promptly; however, the team noted several instances where corrective actions were not implemented or were cancelled. The team identified one cited violation of very low safety significance because of the licensee's failure to restore compliance in a timely manner for a previously issued noncited violation. The team found that the licensee had established and was maintaining an environment at Grand Gulf where employees felt free to raise safety concerns without fear of retaliation.

Inspection Report# : [2009008](#) (*pdf*)

Last modified : May 26, 2010