

# Grand Gulf 1

## 2Q/2012 Plant Inspection Findings

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### Initiating Events

**Significance:** **G** Jun 30, 2012

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

#### **Failure of Hot Work Fire Watch to Follow Procedural Requirements**

The inspectors reviewed a self-revealing non-cited violation of Technical Specifications 5.4.1(a), for failure of the hot-work fire watch to follow procedural requirements, which resulted in a fire in main condenser A. On April 11, 2012, at 6:11 p.m., hot-work was in progress inside the condenser A in the upper southeast corner at 150 foot elevation. Cutting was being performed by contract boilermakers using an oxy-acetylene torch, with ventilation exhaust and supply provided by nearby HEPA hoses. The torch cutting operation produced hot slag, which exited the barrier provided by the fire blankets and ignited the nearby HEPA hoses, air conditioning hoses, and eventually the acetylene hoses. Contract pipefitters in the area were able to extinguish the fire. The main control room was informed of the fire inside condenser A and dispatched the fire brigade to the scene. The operations shift manager declared a notice of unusual event at 6:26 p.m. due to a fire in the protected area lasting longer than 15 minutes. Members of the fire brigade entered the condenser bay at 6:42 p.m. and reported to the control room there was no fire present, only smoke. The notice of unusual event was exited at 7:00 p.m. Short term corrective actions included site management placing a stop work order on all hot-work until a complete investigation of the event could be performed. The licensee entered this issue into the corrective action program as Condition Report CR-GGN-2012-05418.

The finding is more than minor because it is associated with the protection against external factors attribute of the Initiating Events Cornerstone and adversely affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors reviewed Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," that states in the Assumptions and Limitations section, "The Fire Protection SDP focuses on risks due to degraded conditions of the fire protection program during full power operation of a nuclear power plant. This tool does not address the potential risk significance of fire protection inspection findings in the context of other modes of plant operation (i.e., low power or shutdown)." Therefore, the senior reactor analyst evaluated the finding in accordance with Manual Chapter 0609, Appendix G, Attachment 1, "Shutdown Operations Significance Determination Process Phase 1 Operational Checklists for both PWRs and BWRs." The finding did not require a quantitative assessment because adequate mitigating equipment remained available; the finding did not increase the likelihood of a loss of reactor coolant system inventory; the finding did not degrade the ability to terminate a leak path or add reactor coolant system inventory; and the finding did not degrade the ability to recover decay heat removal if lost. Therefore, the finding screened as Green, having very low safety significance. The inspectors determined that the apparent cause of this finding was that site management did not ensure that hot-work supervisors were engaged in ensuring compliance with procedural requirements. This finding had a cross-cutting aspect in the area of human performance associated with work practices component because the licensee failed to ensure supervisory oversight of hot-work activities is performed within procedural requirements such that nuclear safety is supported [H.4(c)] (Section 40A3)

Inspection Report# : [2012003](#) (*pdf*)

**Significance:** **G** Mar 23, 2012

Identified By: Self-Revealing

Item Type: FIN Finding

#### **Manual Reactor Scram Caused by Failure to Ensure the Main Steam Supply Valve to Reactor Feed Pump Turbine B was Full Open**

Green

. The inspectors reviewed a Green self-revealing finding for the failure to ensure the correct position (full open) of the main steam supply valve 1N11-F014B to reactor feed pump turbine B, which resulted in a manual reactor scram due to decreasing reactor water level. During plant shutdown activities to begin refueling outage 18, the at-the-controls

operator manually scrammed the reactor from approximately 23 percent rated thermal power due to the decreasing reactor water level. Water level in the reactor was decreasing because valve 1N11-F014B was not fully open, and because pressure in the main steam lines had been reduced when the crew opened turbine bypass valves to begin cooling the main turbine. With valve 1N11-F014B less than fully open and reduced steam pressure, the operating feed pump wasn't able to maintain water level. After the scram, reactor core isolation cooling and reactor feed pump turbine A were used to restore water level. The licensee plans to repair valve 1N11-F014B during the current refuelling outage. The licensee entered this issue into their corrective action program as condition report CR-GGN-2012-01838.

The finding is more than minor because it is 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 that challenge critical safety functions during power operations. Using Inspection Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," the inspectors concluded that the finding contributed to both the likelihood of a reactor trip and the likelihood that mitigation equipment would not be available. The inspectors, in consultation with the regional senior reactor analyst, performed a Phase 2 estimation using the pre-solved work sheets for Grand Gulf Nuclear Station. The inspectors determined by entering the power conversion system column that the finding was of very low safety significance (Green). This result was validated by the senior reactor analyst using the current revision of the plant-specific SPAR model. The inspectors determined the finding has a cross-cutting aspect in the area of human performance associated with the decision-making component because the operating staff proceeded with the start up of the reactor feed pump B with the main steam supply valve 1N11-F014B in an unknown position [H.1(b)](Section 1R11).

Inspection Report# : [2012002](#) (pdf)

**G**

**Significance:** Mar 23, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Perform an Online Risk Assessment Per Severe Weather Off Normal Procedure Due to a Declared Tornado Warning Affecting Grand Gulf Nuclear Station**

Green. The inspectors identified a Green non-cited violation of Technical Specifications 5.4.1.a for the failure to perform an online risk assessment per severe weather off normal procedure due to a declared tornado warning affecting Grand Gulf Nuclear Station. At 7:41 p.m., on February 15, 2012, the National Weather Service issued a tornado warning for Claiborne County, the county in which Grand Gulf Nuclear Station is located. In response to a tornado warning, licensee procedures required them to enter Off-Normal Operating Procedure 05-1-02-VI-2, "Severe Weather," and evaluate online risk. This severe weather condition would have resulted in the licensee entering into an orange risk condition. On February 16, 2012, the inspectors identified that the licensee had not made a log entry for entry into their off normal severe weather procedure during the preceding evening and therefore had not evaluated online risk status for the severe weather condition. In response to the inspectors' observations, the licensee initiated a condition report detailing the failures to enter the off normal procedure and enter the correct risk condition. The licensee has implemented short-term corrective actions to ensure the site adequately evaluates the risk associated with adverse weather. The licensee entered this issue into their corrective action program as condition report CR-GGN-2012-01707.

The finding is more-than-minor because it is associated with the Initiating Events Cornerstone attribute of protection against external events, 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 power operations.

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Using Inspection Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," Appendix K; "Maintenance Risk Assessment and Risk Management Significance Determination Process," Flowchart 1; "Assessment of Risk Deficit"; and consulting with the regional senior reactor analyst, the inspectors determined the finding to be of very low safety significance based on a licensee's calculated determination of the incremental core damage probability deficit of 4.0E-08. This result was validated by the senior reactor analyst using the current revision of the plant-specific SPAR model. The inspectors determined the finding has a cross-cutting aspect in the area of human performance associated with the resources component because the on-shift senior reactor operators did not have adequate access to current weather information that would prompt control room personnel to re-evaluate risk due to changing weather conditions [H.2(d)](Section 1R13).

Inspection Report# : [2012002](#) (pdf)

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## Mitigating Systems

**Significance:**  Jun 30, 2012

Identified By: NRC

Item Type: FIN Finding

### **Failure to Ensure Materials are Stored Properly in the 500 KV Switchyard**

The inspectors identified a finding for the licensee's failure to ensure that materials or equipment were not stored under energized lines or near energized equipment in accordance with station procedures. On May 21, 2012, the inspectors were performing a grid stability inspection and toured the 500 KV switchyard with the system switchyard engineer. During the tour, the inspectors identified numerous cylindrical shaped items stored under a 500 KV power line, which posed a missile hazard to the offsite source of power. The licensee determined that the items in question were bushing sleeves that were left in the switchyard following 500 KV breaker maintenance. The inspectors researched station procedures and determined that the cylindrical items stored under the energized 500 KV power line did not meet procedure requirements for the storage of materials and equipment. Immediate corrective actions included having the items removed from the switchyard. The licensee entered this issue into their corrective action program as Condition Report CR-GGNS-2012-07362.

The finding is more than minor because it is associated with the protection against external factors attribute of the Mitigation 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. The inspectors reviewed Manual Chapter 0609, Attachment A, "Phase 1 – Initial Screening and Characterization of Findings." Attachment A, Table 4.a, states that a Phase 3 is required if the finding is potentially risk significant due to external initiating event core damage accident sequences. The inspectors determined that the failure to properly store the bushing sleeves in the switchyard could have resulted in a loss of offsite power during a severe weather initiating event. Therefore, the senior reactor analyst evaluated the finding to determine its significance using hand calculations and the site-specific SPAR model. The analyst determined that the probability of having straight-line winds or winds generated by hurricanes or tornados that were strong enough to throw the bushing sleeves into switchyard electrical equipment was between  $2.5 \times 10^{-1}$  and  $2.0 \times 10^{-2}$  /year. The analyst also determined that the conditional probability that bushing sleeves thrown by winds would result in a loss of offsite power was between  $1.2 \times 10^{-1}$  and  $1.1 \times 10^{-7}$ . Finally, the SPAR model calculated that the conditional core damage probability for a loss of offsite power initiated in the switchyard was  $5.3 \times 10^{-5}$ . Using these values, under all scenarios evaluated by the analyst, the change in core damage frequency caused by the subject performance deficiency was below  $1 \times 10^{-6}$ . Therefore, the finding was of very low safety significance (Green). The inspectors determined the finding has a cross-cutting aspect in the area of problem identification and resolution associated with the corrective action program component because the licensee did not implement the corrective action program with a low threshold for identifying materials improperly stored in the 500 KV switchyard [P.1(a)](Section 1R01).

Inspection Report# : [2012003](#) (*pdf*)

**Significance:**  Jun 30, 2012

Identified By: Self-Revealing

Item Type: FIN Finding

### **Loss of Alternate Method of Decay Heat Removal Due to Reactor Water Clean Up Pumps Tripping on Low Suction Flow Signal**

Green. The inspectors reviewed a self-revealing finding for the licensee's failure to identify that de-energizing non-safety electrical bus 13BD1 and 13BD2 would cause the reactor water clean-up pumps A and B to trip on a low suction flow signal. On April 24, 2012, the plant was shut down for refueling outage 18, the residual heat removal system B was in service, and the reactor water clean-up system was in standby mode as the alternate shutdown cooling system. In this configuration, the plant was in yellow risk due to having two available systems for decay heat removal. At 10:00 a.m., both reactor water clean-up pumps tripped on low pump suction flow, causing the plant to enter an unplanned orange risk configuration for only having one system available for decay heat removal. The licensee determined the reactor water pumps tripped while opening the feeder breaker for the 13BD1 and 13BD2 buses (breaker 152-1305) for scheduled maintenance. When breaker 152-1305 was opened, optical isolator AT12 caused the pump low suction flow trip control contacts to close, which initiated the low suction flow alarm and caused

the pumps to trip. Immediate corrective actions included restoring reactor water clean-up as the alternative source of decay heat removal by closing breaker 152-1305 and re-energizing the 13BD1 and 13BD2 buses. The licensee entered this issue into their corrective action program as Condition Reports CR-GGN-2012-06092 and CR-GGN-2012-06105.

The finding is more than minor because it is associated with the configuration control attribute of the Mitigating Systems Cornerstone and it affected the cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," the inspectors determined that the finding was of very low safety significance (Green) because the finding did not represent a loss of a system safety function. The inspectors determined that the cause of this finding was a latent issue; therefore no cross-cutting aspect was assigned (Section 1R13).

Inspection Report# : [2012003](#) (pdf)

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**Significance:** Jun 30, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Inadequate Corrective Actions to Address Configuration Control of Previous Non-cited Violation**

Green. The inspectors identified a non-cited violation of very low safety significance of 10 CFR Appendix B, Criterion XVI, "Corrective Action," for failure to implement adequate corrective actions for a previous NRC-identified non-cited violation. The previous finding involved a failure to maintain configuration control of various systems in the plant. In response to the previous finding, the licensee performed an apparent cause evaluation and developed actions to address the causes and extent of condition. However, the inspector identified that the actions pertaining to the extent of condition were not properly implemented and, as a result, the deficiency identified by the inspector was not fully resolved. The licensee failed to identify brass compression fittings installed on drain tailpieces of the standby service water system instead of stainless steel fittings as required by design documents. Furthermore, the licensee failed to update applicable design drawings allowing sacrificial compression fittings to be installed. The licensee performed corrective actions to restore configuration control. This issue was entered into the licensee's corrective action program as Condition Reports CR-GGN-2012-04003, CR-GGN-2012-4180, and CR-GGN-2012-04233.

The issue is more than minor because, if left uncorrected, it could become a more significant safety concern. Specifically, the issues identified by the inspector impacted the licensee's ability to establish and maintain configuration control for equipment relied on for safe operation of the plant. The design control attribute of the Mitigating Systems Cornerstone and the cornerstone's objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences were affected. Until the issues are fully resolved, the licensee continues to be vulnerable to gaps in their system configuration control. The finding was determined to be of very low safety significance (Green) using Attachment 4 to IMC 0609, "Significance Determination Process," because it did not result in an actual loss of safety function. The inspectors also determined that the finding had a cross-cutting aspect in the area of human performance associated with the resources component because the licensee did not provide adequate training of personnel so that the inappropriately installed fittings could be identified during system walkdowns [H.2(b)] (Section 1R08).

Inspection Report# : [2012003](#) (pdf)

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**Significance:** Jun 30, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to Implement a Surveillance Requirement to Assure that the Limiting Condition for Operation Will be Met**

Green. The inspectors identified a non-cited violation of 10 CFR Part 50.36, "Technical Specifications," involving the failure to implement a surveillance requirement to assure that the limiting conditions for operation of the ultimate heat sink will be met. Technical Specifications requires two cooling towers and two cooling basins, with the volume of the two basins constituting the entire inventory of the ultimate heat sink. Therefore, an interconnecting siphon line is installed to transfer water between the two cooling tower basins. That siphon line has the safety-related function of ensuring the availability of enough cooling water to satisfy ultimate heat sink requirements. Technical Specification 3.7.1 includes Surveillance Requirement 3.7.1.1, which verifies the water level in each cooling tower basin every 24

hours, and Surveillance Requirement 3.7.1.2, which verifies each cooling tower fan every 31 days. However, the inspectors identified that Technical Specification 3.7.1 does not include a surveillance requirement to verify that the interconnecting siphon line will perform its safety-related function. On May 20, 2012, the licensee performed an operability test for the siphon line and determined that it was operable. The licensee is currently performing a preventative maintenance task as a compensatory action to ensure operability of the siphon line until a license amendment can be submitted to the NRC that establishes a surveillance requirement. The licensee documented this violation in Condition Reports CR-GGN-2012-08257 and CR-GGN-2012-08537.

The violation is more than minor because it is associated with the design control attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, without a surveillance requirement that verifies the interconnecting siphon line can perform its safety-related function, the licensee cannot ensure that sufficient cooling water is available following an accident. The inspectors evaluated the finding using Inspection Manual Chapter (IMC) 0609, Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings" and determined that the finding was of very low safety significance (Green) because the finding was a design or qualification deficiency confirmed not to result in a loss of operability or function; did not represent a loss of safety system function; did not represent actual loss of safety function of a single train for greater than its technical specification allowed outage time; and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The finding had a cross-cutting aspect in the human performance area associated with the resources component because the licensee did not ensure that equipment was adequate to assure nuclear safety, in that the licensee had recently reviewed documentation associated with a modification to the siphon line but failed to identify that operability of the UHS could not be established without a technical specification surveillance requirement to ensure operability of the siphon line [H.2(c)] (Section 1R19).

Inspection Report# : [2012003](#) (*pdf*)

**Significance:**  Jun 30, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to Follow a Post-Modification Test Procedure**

Green. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," involving the licensee's failure to follow a post-modification test procedure for the interconnecting siphon line between the two standby service water system cooling tower basins. Operability of the ultimate heat sink is based on a minimum water level in the two standby service water cooling tower basins, an operable interconnecting siphon between the basins, and four operable cooling tower fans (two per basin). At extended power uprate conditions, the configuration of the basins and the original siphon line would not support 30 days of operation of both trains of the standby service water system and the high pressure core spray service water systems without makeup, so the licensee performed a modification (EC 25649), which involved replacing the original siphon line with a new siphon line in order to transfer water from one basin to the other. On March 28, 2012, after completing the modification, the licensee performed post-modification testing to determine the piping friction loss coefficient of the modified siphon line and to evaluate its acceptability against the worst-case friction loss coefficient documented in EC 25649. The licensee deviated from the test procedure, as-written, and performed the test with an inadequate pressure gauge instead of the specified gauge. After inspectors challenged the validity of these test results, the licensee performed another test of the siphon line with a different method that did not require the use of a pressure gauge to measure the piping friction loss coefficient. The inspectors reviewed the subsequent test data and found the test results to be satisfactory. The licensee documented this concern in Condition Report

CR-GGN-2012-05260.

The finding is more than minor because it is associated with the design control attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the use of an unqualified gauge invalidated the test results, and a different test method had to be developed to determine the piping friction loss coefficient for the siphon line. The inspectors evaluated this finding using Inspection Manual Chapter 0609, Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings," and determined that the finding was of very low safety significance (Green) because the finding was not a design or qualification deficiency confirmed to result in loss of operability or function; did not represent a loss of safety system function; did not represent actual loss of safety function of a single train for greater than its technical specification allowed outage time;

and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The finding had a cross-cutting aspect in the human performance area associated with work practices component because licensee personnel proceeded in the face of uncertainty or unexpected circumstances. Specifically, the licensee proceeded with the test without verifying that the pressure gauge was suitable for the test conditions after observing unexpected measurements with the gauge [H.1(a)] (Section 1R19).

Inspection Report# : [2012003](#) (*pdf*)

**G**

**Significance:** Mar 23, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Take Timely Corrective Actions Associated with Division 1 and 2 Standby Service Water Safety Related Cables that were Partially Submerged in Cable Manhole/Vault**

Green

. The inspectors identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to take timely corrective actions to correct a condition adverse to quality associated with division 1 and 2 standby service water safety related cables that were partially submerged in a cable manhole/vault. The inspectors reviewed work order 52284535 and noted that the sump pump for manhole/vault MH-01, which contained standby service water cables for division 1 and 2, was determined to be non-functional on September 10, 2011. The inspectors determined that a work order to repair the non-functioning sump pump had been developed but that the work order had not yet been scheduled. During a subsequent inspection, manhole/vault MH-01 was found to contain approximately three feet of water, with water partially covering some of the safety related cables. The electricians immediately pumped manhole/vault MH-01 and wrote a condition report. The licensee repaired the sump pump the next week and declared it functional. The cables remained operable based on the results of meggar tests. The licensee entered this issue into their corrective action program as condition reports CR-GGN-2012-00503, 01324, and 01389.

The finding is more than minor because it is associated with the equipment performance attribute of Mitigating System 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 Inspection Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," the inspectors determined that the finding was of very low safety significance (Green) because the finding was not a design or qualification deficiency, did not represent either a loss of system safety function or an actual loss of safety function of a single train of one or more non-Technical Specification trains of equipment designated as risk significant, and did not screen as potentially risk-significant due to a seismic, flooding, or severe weather initiating event. The finding had a cross-cutting aspect in the area of human performance associated with the work practices component, in that the licensee personnel did not initiate a condition report as required by licensee procedure when the work order associated with sump pump testing of MH-01 determined that the sump pump was not functioning properly [H.4(b)] (Section 1R06).

Inspection Report# : [2012002](#) (*pdf*)

**G**

**Significance:** Mar 23, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Correct a Condition Adverse to Fire Protection, in That the Licensee Failed to Adequately Provide Contingency Lighting in the Fire Brigade Dress Out Area While Normal Lighting was Inoperabl**

Green. The inspectors identified a Green non-cited violation of Facility Operating License Condition 2.C(41), for the failure to correct a condition adverse to fire protection. Specifically, the licensee failed to adequately provide contingency lighting in the fire brigade dress out area while normal lighting was inoperable due to maintenance on an associated breaker. The inadequate lighting delayed fire brigade response to a potential fire in the turbine building. Immediate corrective action included placing temporary lighting in the area. Normal lighting to the area was restored the next week. The licensee entered this issue into their corrective action program as condition report CR-GGN-2012-01488.

The finding is more than minor because it is associated with the protection against external factors attribute of the Mitigating System 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 Inspection Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," the inspectors determined

from table 3b that issues related to performance of the fire brigade are not included in Appendix F and require NRC management review using Appendix M. Regional management review evaluated the overall impact of lighting issue in the fire brigade dress out area and concluded that, while the fire protection defense-in-depth was affected by the performance deficiency, the overall defense-in-depth of the front-line systems was not impacted because of train separation and safe shutdown analysis at the site. Therefore the finding screened as having very low safety significance (Green) in accordance with Manual Chapter 0609, Appendix M. The inspectors determined the finding had a cross-cutting aspect in the area of human performance associated with the work control component, in that licensee personnel failed to ensure adequate job site conditions (lighting in the fire bridge dress out area) were in place prior to performance electrical maintenance in the turbine building [H.3(a)] (Section 40A3).

Inspection Report# : [2012002](#) (*pdf*)

**G**

**Significance:** Dec 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Perform an Adequate Inspection of Probable Maximum Precipitation Door Seals Protecting Safety Related Equipment**

Green. The inspectors identified a non-cited violation of 10 CFR 50 Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for failure to perform an adequate inspection of probable maximum precipitation door seals protecting safety related equipment. Inspectors found that one of the door seals to standby service water pump house A was in a degraded condition. The inspectors identified that the door seal did not make complete contact with the door frame all the way around. The licensee determined that the probable maximum precipitation seal for the identified door was in a degraded condition. Failure of this door seal during a probable maximum precipitation event could potentially cause flooding of the standby service water pump house A. Immediate corrective actions included the site initiating compensatory actions for the degraded seal by staging sand bags in the area and requiring monitoring of the affected door during heavy rainfall. The licensee entered this issue into the corrective action program as Condition Report CR-GGN-2011-07687.

The finding is more than minor because it is associated with the protection against external factors attribute of Mitigating System 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. In Inspection Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," the inspectors used the seismic, flooding, and severe weather Table 4b and determined that it would not affect multiple trains of safety equipment and that the finding had very low safety significance (Green). This finding has a cross-cutting aspect in the area of human performance associated with the resources component in that the licensee's procedure used for the inspection of the door seals did not take into account the status of the pump house ventilation system while performing the door seal inspection, and therefore, the licensee failed to make the required adjustments to the door seals resulting in their inspections of the probable maximum precipitation door seals being inadequate [H.2(c)] (Section 1R05).

Inspection Report# : [2011005](#) (*pdf*)

**G**

**Significance:** Oct 21, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Take Timely Corrective Actions for Reactor Core Isolation Cooling System Venting**

Green. The team identified a Green noncited violation of 10 CFR 50 Appendix B, Criterion XVI, "Corrective Actions," for the failure to promptly identify and correct an inadequate venting procedure for the reactor core isolation cooling system. Corrective actions were not taken in a timely enough manner such that resolution was reached prior to time to demonstrate the licensee met their applicable technical specification surveillance requirement. The licensee entered this condition into their corrective action program as condition report CR-GGN-2011-07669 and subsequently altered their procedure, which performs the technical specification surveillance requirement to demonstrate that it meets the applicable requirements.

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. Using Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," this finding was of very low safety significance because it did not create a loss of system safety function of

a single train for greater than the technical specification allowed outage times, and did not affect seismic, flooding, or severe weather initiating events. This finding has a cross-cutting aspect in the area of human performance associated with the decision making component. The licensee did not use conservative assumptions when deciding to pursue corrective action for venting of the reactor core isolation cooling system piping to demonstrate their action was safe in order to proceed rather than demonstrating it was unsafe to disapprove the action [H.1(b)]. (Section 40A2.5a)

Inspection Report# : [2011006](#) (pdf)

**Significance:** SL-IV Oct 21, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Submit a Licensee Event Report for an Inoperable Reactor Core Isolation Cooling System**

Severity Level IV. The team identified a Severity Level IV noncited violation of 10 CFR 50.73, "Licensee Event Report System," associated with the licensee's failure to submit a licensee event report within 60 days following discovery of an event meeting the reporting criteria as specified. Specifically, the licensee was not meeting the technical specification surveillance requirement for venting the reactor core cooling isolation system and subsequently the system was inoperable in excess of the allowed outage time which constituted a condition prohibited by technical specifications. The licensee entered this condition into their corrective action program as condition report CR-GGN-2011-8890.

This finding affects the mitigating systems cornerstone and is greater than minor because the NRC relies on licensees to identify and report conditions or events meeting the criteria specified in the regulations in order to perform its regulatory function. Because this issue affected the NRC's ability to perform its regulatory function, it was evaluated with the traditional enforcement process. Consistent with the guidance in Section 6.9 of the Enforcement Policy, this finding was determined to be a Severity Level IV noncited violation. This finding has no crosscutting aspect, as it is not indicative of current performance (Section 40A2.5b).

Inspection Report# : [2011006](#) (pdf)

**Significance:**  Oct 21, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Document a Condition as a Significant Condition Adverse to Quality**

Green. The team identified a Green noncited violation of 10 CFR 50 Appendix B, Criterion XVI, "Corrective Actions," for the failure to identify and document a significant condition adverse to quality and report the condition to appropriate levels of management. As a result, a root cause analysis was not performed and more comprehensive actions to prevent recurrence were not considered for the condition. The licensee entered this condition into their corrective action program as condition report CR-GGN-2011- 07671, to address the problem.

This finding is more than minor because it is associated with the protection against external factors attribute of the mitigating systems cornerstone and affects the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," this finding was of very low safety significance (Green) because it did not create a loss of system safety function of a single train for greater than the technical specification allowed outage times, and did not affect seismic, flooding, or severe weather initiating events. This finding has a cross-cutting aspect in the area of human performance associated with the resources component because the licensee's procedures for significant conditions adverse to quality were not complete and accurate enough to prevent the condition. [H.2(c)]. (Section 40A2.5c)

Inspection Report# : [2011006](#) (pdf)

**Significance:**  Oct 21, 2011

Identified By: NRC

Item Type: VIO Violation

## **Inadequate Corrective Action for a Leak on the Division II Emergency Diesel Generator Lube Oil Sump**

Green. The team identified a Green cited violation of 10 CFR 50 Appendix B, Criterion XVI, "Corrective Actions," for the failure to promptly identify and correct a leak on the Division II emergency diesel generator lube oil sump. Despite identification of the leak in 2004, ineffective attempts to repair the leak and previous identification by the NRC in 2009, the licensee dispositioned the leak as "accept as-is" without a full understanding of the lube oil sump leak and potential consequences. The licensee entered this condition into their corrective action program as condition report CR-GGN-2011-8880.

The condition was discovered and documented by the licensee in 2004. This finding was initially determined by the NRC to be a minor violation in 2009. Paragraph F of Section 2.10 of the NRC Enforcement Manual states in part that where a licensee does not take corrective action for a minor violation, the matter should be considered more than minor and associated with a green inspection finding and dispositioned in a cited or noncited violation, as appropriate. This finding is now determined to be more than minor because if left uncorrected the failure to restore the lube oil sump for the Division II emergency diesel generator to design conditions would have the potential to lead to a more significant safety concern, specifically, the leak could worsen and potentially affect operability of the emergency diesel generator. Due to the licensee's failure to restore compliance within a reasonable time after the violation was identified, this violation is being cited as a Notice of Violation consistent with Section 2.3.2 of the Enforcement Policy. This finding affects the mitigating systems cornerstone. Using Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," this finding was of very low safety significance because it did not create a loss of system safety function of a single train for greater than the technical specification allowed outage times, and did not affect seismic, flooding, or severe weather initiating events. This finding has a cross-cutting aspect in the area of problem identification and resolution associated with the corrective action program component because the licensee failed to thoroughly evaluate this problem such that the resolutions addressed the causes [P.1(c)]. (Section 4OA2.5d)

Inspection Report# : [2011006](#) (*pdf*)

**G**

**Significance:** Sep 27, 2011

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **Failure to Establish Preventative Maintenance for Components Used in Critical Applications**

Green. The inspectors reviewed a self-revealing, noncited violation of Technical Specification 5.4.1.a for the licensee's failure to follow a procedure that required them to evaluate components of critical systems in order to establish a preventive maintenance strategy, which resulted in unscheduled unavailability of safety-related systems and associated unscheduled entries into 72-hour shutdown Technical Specification action statements. The inspectors noted the following two examples dealing with failures of safety related equipment, which resulted in entering into shutdown limiting condition of operation. On June 2, 2011, Grand Gulf Nuclear Station experienced a failure of a relay in the standby service water B pump house ventilation system, which rendered the standby service water B system inoperable. The immediate corrective actions were to replace the relays and to restore the ventilation system. On June 22, 2011, the station experienced a failure of a motor contactor coil on breaker 52-154128, which caused the engineered safety feature electrical switchgear room cooler fan coil unit 1T46B003A not to run. The maintenance personnel determined the failure was due to a burnt motor contactor coil. The immediate corrective action was to replace the contactor coil and restore the room cooler. In both cases, the failed equipment was original plant equipment and preventive maintenance measures had not been established. The licensee entered these issues into the corrective action program as Condition Reports CR-GGN-2011-3730 and CR-GGN-2011-4313.

The finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone's objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Inspectors performed a Phase 1 screening, in accordance with Inspection Manual Chapter 0609, Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings," and determined that the finding was of very low safety significance (Green) because it did not result in a loss of system safety function of a single train for more than its technical specification's allowed outage time. This issue is a latent issue associated with original plant equipment and is not indicative of current performance; therefore, no cross-cutting aspect was identified (Section 4OA2).

Inspection Report# : [2011004](#) (*pdf*)

**G****Significance:** Aug 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure To Provide An Adequate Alternative Shutdown Procedure**

• Green. The team identified a noncited violation of License Condition 2.C(41), "Fire Protection Program," for failing to ensure that the postfire safe shutdown procedure for fires requiring control room evacuation could be performed within the critical times required by the approved fire protection program. Specifically, two crews of operators simulating performance of Procedure 05-1-02-II-1, "Shutdown from the Remote Shutdown Panel," Revision 036, did not give priority to the required safe shutdown components which are protected against fire damage and did not complete the equipment alignments within the times required by the thermal-hydraulic analysis. The team confirmed at the end of each walkdown that the operators involved did not know what the credited shutdown equipment was for a postfire safe shutdown or the critical time limits to be met. The team also confirmed that the licensee had not performed timed walkdowns to validate that the procedure would complete the required actions for postfire safe shutdown within the times required by the thermal-hydraulic analysis. The licensee entered this into their corrective action program as CR GGN 2011 02721, implemented compensatory measures to focus the operators' priority on the required safe shutdown components and implemented a procedure revision.

The failure to provide an adequate procedure to implement the requirements of the approved fire protection program for a fire in the control room is a performance deficiency. The performance deficiency was more than minor because it was associated with the reactor safety mitigating systems cornerstone attribute for protection against external events (fire), and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Because the finding involved control room evacuation, a Phase 3 SDP risk assessment was performed by a senior reactor analyst. The scenario impacted operators being ready to emergency depressurize the reactor and reflood using a residual heat removal pump. Because a bounding change to core damage frequency was  $4.13 \times 10^{-7}$ , and the finding was not significant with respect to large, early release frequency, this

finding is of very low safety significance (Green). The finding did not have a crosscutting aspect since the primary cause did not fit any crosscutting aspects. (Section 1R5.5.b.1)

Inspection Report# : [2011007](#) (pdf)**G****Significance:** Aug 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure To Assure Equipment Required For Postfire Safe Shutdown Was Protected Against Fire Damage**

Green. The team identified a noncited violation of License Condition 2.C(41), "Fire Protection Program," for failing to assure that equipment relied upon for safe shutdown following a fire in the control room was protected against fire damage. Specifically, Procedure 05-1-02-II-1, "Shutdown from the Remote Shutdown Panel," Revision 036, relied on the automatic operation of and indications from the load shedding and sequencing system. The team identified that this system was not isolated from potential damage due to a fire in the control room and the procedure did not adequately address the potential that fire damage to the system could effect the postfire safe shutdown capability by spuriously starting or stopping electric loads. The licensee entered this into their corrective action program as CR GGN 2011 02721.

The failure to assure that equipment required to successfully implement the safe shutdown procedure for a fire in the control room was protected against fire damage is a performance deficiency. The performance deficiency was more than minor because it was associated with the reactor safety mitigating systems cornerstone attribute for protection against external events (fire), and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Since the finding involved control room evacuation, a Phase 3 SDP risk assessment was performed by a senior reactor analyst. Because a bounding change to core damage frequency was  $1.97 \times 10^{-8}$ , and the finding was not significant with respect to large, early release frequency, this finding was determined to have very low safety significance (Green). The finding did not have a crosscutting aspect since it was not indicative of current performance, in that the licensee had

established the current procedure more than three years prior to this finding. (Section 1R5.5.b.2)

Inspection Report# : [2011007](#) (pdf)

**Significance:**  Aug 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Take Timely Corrective Actions to Protect Safe Shutdown Equipment From Fire Damage**

Green. The team identified a noncited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for failure to take timely corrective action to modify the control circuits for 33 motor operated valves that are relied upon during safe shutdown due to fire. Noncited violation NCV 05000416/2008006-04, "Failure to Ensure That Damage to Motor-Operated Valve Circuits Would Not Prevent Safe Shutdown," documented the licensee's inadequate review of Information Notice 92-18, "Potential for Loss of Remote Shutdown Capability During Control Room Fire." The licensee failed to develop modification packages such that motor operated valve control circuit modifications could be implemented during the fall 2010 refueling outage. As a result, 33 motor operated valves associated with safe shutdown equipment continue to remain susceptible to potential damage during spurious operation due to circuit hot shorts. The licensee has maintained a fire watch as a compensatory measure. The licensee entered this into their corrective action program as CR GGN 2011 02779.

The failure to take timely corrective actions to address the potential for fire induced hot shorts to impact the ability to safely shutdown the plant following a fire is a performance deficiency. The performance deficiency was more than minor because it was associated with the reactor safety mitigating systems cornerstone attribute for protection against external events (fire), and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Since the finding involved control room evacuation, a Phase 3 SDP risk assessment was performed by a senior reactor analyst. Because a bounding change to core damage frequency was  $9.58 \times 10^{-7}$ , and the finding was not significant with respect to large, early release frequency, this finding was determined to have very low safety significance (Green). The finding had a crosscutting aspect in the area of Human Performance associated with Decision Making, because the licensee failed to demonstrate that nuclear safety is an overriding priority. Specifically, the licensee did not promptly initiate control circuit reviews and implement modifications required for corrective actions after the licensee's inadequate evaluation of Information Notice 92-18 was identified in the 2008 violation. [H.1(a)] (Section 1R5.6)

Inspection Report# : [2011007](#) (pdf)

**Significance:**  Aug 30, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

**Inadequate Corrective Actions To Assure Postfire Safe Shutdown**

Green. The team identified a noncited violation of 10 CFR 50, Appendix B, Criterion XVI, for inadequate corrective actions to address the potential for fire induced hot shorts to impact the ability to trip a control rod group as described in Information Notice 2007-07. The licensee's evaluation of Information Notice 2007-07 stated in part, "provisions have been included in 05-1-02-II-1, 'Shutdown from the Remote Shutdown Panel,' to trip the proper reactor protective system breakers to ensure that the reactor scram occurs." The team noted that Procedure 05-1-02-II-1 contained a conditional statement for the operator to determine if opening the reactor protective system breakers is required. The procedure did not provide assurance that all control rod groups insert since the control room indications to be utilized by the operator were not identified and confirmed to be reliable during fires requiring control room evacuation. The licensee entered this finding into its corrective action program under CR-GGN-2011-02780, implemented compensatory measures to ensure the operators de-energized the reactor protection system, and implemented a procedure change.

The failure to take adequate corrective actions to address the potential for fire induced hot shorts to impact the ability to safely shutdown the plant following a fire is a performance deficiency. The performance deficiency was more than minor because it was associated with the reactor safety mitigating systems cornerstone attribute for protection against

external events (fire), and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Since the finding involved control room evacuation, a Phase 3 SDP risk assessment was performed by a senior reactor analyst. Because a bounding change to core damage frequency was  $9.58 \times 10^{-7}$ , and the finding was not significant with respect to large, early release frequency, this finding was determined to have very low safety significance (Green). The finding did not have a crosscutting aspect since it was not indicative of current performance. The licensee had incorrectly assessed the applicability of Information Notice 2007-07 more than three years prior to this finding. (Section 4OA2.b)

Inspection Report# : [2011007](#) (pdf)

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## Barrier Integrity

**Significance:**  Jun 30, 2012

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **Failure to Follow Procedure Results in Loss of Decay Heat Removal to the Spent Fuel Pool**

Green. The inspectors reviewed a self-revealing non-cited violation of Technical Specifications 5.4.1(a), involving a loss of decay heat removal in the spent fuel pool due to station personnel failing to correctly follow operation of pool gate seal air supply procedure. On April 17, 2012, Grand Gulf Nuclear Station was preparing to drain the reactor cavity to reinstall the vessel head after the completion of refueling activities. In preparation, the upper containment pool to the reactor cavity gate was installed by General Electric-Hitachi technicians with Entergy oversight. Technicians were directed by procedure to verify that all supply isolation toggle valves to the gate seals were open and secured in place.

However, technicians failed to complete this action correctly and the control room was informed that all prerequisites were completed and began the cavity drain down. The control room immediately noticed the fuel pool drain tank level was decreasing and attempted to makeup to the tank via the normal makeup valve. When the fuel pool drain tank level reached 17 percent full, both fuel pool cooling and cleanup pumps tripped as expected, resulting in loss of decay heat removal to the spent fuel pool. The main control room entered the off-normal event procedure for inadequate decay heat removal, and they secured the drain down evolution. Approximately 47 minutes later, spent fuel pool cooling was re-established. During this event, the spent fuel pool temperature did not exceed the limits required by Technical Requirements Manual Section 6.7.4 (140°F). Short term corrective actions included restoring decay heat removal to the spent fuel pool and conducting a human performance review of the event. The licensee entered this issue into the corrective action program as Condition Report CR-GGN-2012-05756.

The finding is more than minor because it is associated with the human performance attribute of the Barrier Integrity Cornerstone and adversely affects the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Using Inspection Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," the inspectors determined that the finding was of very low safety significance (Green) because the finding only represented a loss of spent fuel pool cooling that would not preclude restoration of cooling to the spent fuel pool prior to pool boiling. This finding has a cross-cutting aspect in the area of human performance associated with the work practices component because licensee personnel failed to use adequate self- and peer-checking techniques to ensure gate seals were properly inflated prior to cavity drain down [H.4(a)] (Section 1R20).

Inspection Report# : [2012003](#) (pdf)

**Significance:**  Mar 23, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

### **Modification of the Spent Fuel Pool without Prior NRC Approval**

SLIV. The inspectors identified a Severity Level IV non-cited violation of 10 CFR 50.59, "Changes, Tests and Experiments," when the licensee failed to obtain a license amendment prior to implementing a proposed change to the plant that required a change to Technical Specifications. The 10 CFR 50.59 evaluation performed by the licensee is dated January 24, 2001, thus it was performed under the requirements of the old rule based on the Entergy Operations

letter dated March 5, 2001. In the 10 CFR 50.59 evaluation for the removal of Blackness Testing and the division of the spent fuel pool into two regions, the licensee determined that the modifications did not require a change to Technical Specifications. However, 10 CFR 50.36, "Technical Specifications," Section 4, "Design Features," requires that design features such as geometric arrangements, which, if altered or modified, would have a significant effect on safety, must be incorporated into Technical Specifications. The NRC considers that the establishment of two regional zones in the spent fuel pool, each having specific loading criteria to maintain keff less than 0.95, constitutes design features which, if altered or modified would have a significant effect on safety. Therefore, these design features should have been incorporated into the Technical Specifications. In a letter dated September 8, 2010, (ML102660403), the licensee submitted a power up-rate license amendment request. The NRC staff is currently reviewing the license request, which includes the licensee's technical justification for the spent fuel pool changes described above. Based on preliminary review of the amendment request, the NRC staff has determined that an immediate safety concern does not exist. The licensee has entered this issue into their corrective action program as condition report CR-GGN-2012-01077.

The finding is more than minor because it is associated with the design control attribute of the Barrier Integrity Cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, containment) protect the public from radionuclide releases caused by accidents or events. Inspectors performed a Phase 1 screening, in accordance with Inspection Manual Chapter 0609, Attachment 4, "Phase 1 – Initial Screening and Characteristics of Findings," and determined that the finding was of very low safety significance (Green) because it did not result in the loss of cooling to the spent fuel pool, did not result from fuel handling errors that caused damage to fuel clad integrity, and it did not result in a loss of spent fuel pool inventory. This finding is a latent issue and is not indicative of current performance; therefore, no cross-cutting aspect was identified (Section 1R15).

Inspection Report# : [2012002](#) (pdf)

**Significance:**  Sep 27, 2011

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

#### **Failure to Ensure Correct Fuses were Installed in the Hydrogen Igniter Control Circuits**

Green. The inspectors reviewed a self-revealing, noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to install the correct amperage fuses in the hydrogen igniter control circuit. On August 4, 2011, the inspectors were performing an operability review of a condition report dealing with the division 1 hydrogen igniters. The licensee had determined that half the division 1 hydrogen igniters would not energize, and in their investigation, they determined that the loss of power to the hydrogen igniters was due to a blown fuse. The licensee also determined that the blown fuse was 0.3 amps and should have been 0.8 amps per plant drawings. The licensee performed an operability determination for the "as found" condition and determined that the circuit required 0.193 amps to power the circuit, which included the light bulbs. The inspectors reviewed the operability determination and the calculations and determined that the licensee's conclusions were reasonable. The licensee immediate corrective action was to replace the incorrect fuses one division at a time with the correct size 0.8 amp fuses and restore the hydrogen igniters to operable status. This issue was entered into the licensee's corrective action program as Condition Report CR-GGN-2011-005388.

This finding is more than minor because it is associated with the design control attribute of the Barrier Integrity Cornerstone, and it adversely affected the cornerstone's objective to ensure that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. Using Inspection Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," inspectors determined that Appendix H, "Containment Integrity Significance Determination Process," was required. Inspectors determined that this was a type B finding and, using section 6.0, determined that the finding was of very low safety significance (Green) because during their review, the inspectors noted that the hydrogen igniters had maintain functionality over the life of the plant based on satisfactory surveillance tests and no previous failures. Therefore, the exposed time for the de-energized hydrogen igniters was less than 3 days, resulting in very low safety significance. The Appendix H evaluation and the final risk significance determination were reviewed and concurred on by a regional senior reactor analyst. This issue is a latent issue associated with original plant equipment and is not indicative of current performance; therefore, no cross-cutting aspect was identified (Section 1R15).

Inspection Report# : [2011004](#) (pdf)

**G****Significance:** Sep 27, 2011

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**Failure to Perform Preventative Maintenance on the Fuel Handling Bridge Paddle Switch**

Green. The inspectors reviewed a self-revealing, noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for inadequate preventative maintenance instructions, which resulted in the loss of control of the fuel handling bridge in the spent fuel pool. On July 15, 2011, while moving spent fuel from the spent fuel pool to the dry cask loading pool, the fuel handling platform did not stop when the paddle switch was released from the reverse position. The paddle switch did not return to the neutral position as designed, and the bridge continued to move in the reverse direction. The fuel handling bridge tripped the zone limit switches and came to a stop. The licensee concluded that the switches had to be cleaned, adjusted, and re-greased periodically to ensure proper operation. Immediate corrective actions included replacing the paddle switch and revising the preventive maintenance instruction to clean and re-grease the paddle switch before every dry cask fuel campaign. The licensee entered this issue into the corrective action program as Condition Report CR-GGN-2011-04896.

The finding is more than minor because it is associated with the procedure quality attribute of the Barrier Integrity Cornerstone and adversely affected cornerstone's objective to ensure that physical design barriers (fuel cladding, reactor coolant system and containment) protect the public from radionuclide releases caused by accidents or events. Inspectors performed a Phase 1 screening, in accordance with Inspection Manual Chapter 0609, Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings," and determined that the finding was of very low safety significance (Green) because it did not result from fuel handling errors that caused damage to fuel clad integrity because the fuel handling bridge movement was arrested prior to coming in contact with the spent fuel pool wall. This finding had a cross-cutting aspect in the area of problem identification and resolution associated with the operational experience component because the licensee failed to evaluate the need to update the preventative maintenance procedure for known issues associated with the fuel handling bridge paddle switch prior to the implementation of the dry fuel storage campaign [P.2(b)] (Section 4OA2).

Inspection Report# : [2011004](#) (*pdf*)

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## Emergency Preparedness

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## Occupational Radiation Safety

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## Public Radiation Safety

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## Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

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## Miscellaneous

**G****Significance:** Jun 30, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

**Inappropriate Use of Waivers to Allow Workers to Exceed the Minimum Day Off Rule**

Green. The inspectors identified a non-cited violation of 10 CFR 26, Subpart I, "Managing Fatigue," Subsection 207, "Waivers and Exceptions," when the licensee inappropriately used waivers to allow workers to exceed the minimum day off rule. While reviewing condition reports, the inspectors noted the use of work hour waivers for a large number of staff. The circumstances for the use of waivers were the refueling outage lasting more than 60 days, contract expiration leading to 14 layoffs, and the loss of 4 workers via voluntary resignation. Due to these circumstances, work hours and fatigue of waived individuals would have to be assessed daily. The assessment is required because the work hour limit of these individuals exceeded the minimum day off rule, therefore requiring daily monitoring until the end of the cycle. The waived individuals averaged two days off per six-week period compared to the required three days off. Title 10 CFR 26.207 (a)(2) allows the granting of waivers only to address circumstances that could not have been reasonably controlled. The inspectors determined that the licensee was aware of the circumstances of an extended refueling outage and contract renewal deadline well in advance of the need to grant waivers, and a reasonable amount of time was available for the licensee to develop and execute contingency plans to negate the need to use waivers. Corrective actions included initiating assessments and waivers for exceeding minimum days off requirements for shift personnel for the six-week period ending May 27, 2012, and returning to the normal on-line work schedule in which adequate manpower is available to meet the requirements of the rule. The licensee entered this issue into the corrective action program as Condition Report CR-GGN-2012-7348.

The finding is more than minor because it is associated with the access authorization attribute of the Security Cornerstone, and affected the cornerstone objective to provide assurance that the licensee's security system and material control and accounting program use a defense in-depth approach and can protect against (1) the design basis threat of radiological sabotage from external and internal threats, and (2) the theft or loss of radiological materials. Using the Inspection Manual Chapter 0609, Appendix E, "Baseline Security Significance Determination Process for Power Reactors," Figures 5 and 6, the finding was determined to have very low security significance because the calculated point total did not exceed the threshold value for a Green non-cited violation. The cumulative total for this finding was zero points, which was calculated by factoring the one impact area (vital areas) against Tier III Element 08.02.08, security force work hours, of the access authorization attribute, which resulted in a total of zero points within this attribute. The finding was determined to have a cross-cutting aspect in the area of human performance associated with the decision making component in that the licensee failed to use conservative assumptions in developing staff schedules for the duration of refueling outage 18 and for allowing an employment contract to expire that led to 14 individuals being laid off without realizing the impact these decisions would have on the licensee's ability to meet the requirements of the rule [H.1(b)] (Section 1R20).

Inspection Report# : [2012003 \(pdf\)](#)**Significance:** N/A Dec 01, 2011

Identified By: NRC

Item Type: FIN Finding

**Grand Gulf, 2011, Biennial Problem Identification and Resolution 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. The team determined that the licensee generally screened issues appropriately for operability and reportability. 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. 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.

The licensee appropriately evaluated industry operating experience for relevance to the facility and had entered applicable items in the corrective action program. The licensee used industry operating experience when performing root cause and apparent cause evaluations. The licensee performed effective quality assurance audits and self assessments, as demonstrated by self identification of corrective action program areas for improvement.

Inspection Report# : [2011006 \(pdf\)](#)

Last modified : September 12, 2012