

Grand Gulf 1

1Q/2012 Plant Inspection Findings

Initiating Events

Significance:  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 scrambled 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*)

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.

- 3 -

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)

Mitigating Systems

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)

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)

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)

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: G 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 40A2.5d)

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

Significance: G 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 40A2).

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

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 4.13×10^{-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)

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 1.97×10^{-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 9.58×10^{-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 9.58×10^{-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 40A2.b)

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

Significance: G Jun 27, 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 noncited violation of 10 CFR Part 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 the entrance door to the diesel generator building and the entrance door to the division 2 diesel generator in a degraded condition. The inspectors identified that the door seals did not make complete contact with the door frames all the way around as required by procedure. The licensee initiated compensatory actions for the degraded seals, staging sand bags in the area and requiring monitoring of the affected doors during heavy rainfall. This issue was entered into the licensee’s corrective action program as Condition Report CR-GGN-2011-02575.

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 it would affect multiple trains of safety equipment. The inspectors consulted the regional senior reactor analyst, who performed a Phase 3 analysis. The result was a delta-core damage frequency of $3.3E-7$ /yr and a delta-large early release frequency of $6.6E-8$ /yr. These results confirmed that the finding had very low safety significance (Green). The inspectors determined the apparent cause of this finding was that licensee personnel were not adequately trained to perform these inspections. Therefore this finding has a cross-cutting aspect in the area of human performance associated with resources in that the licensee’s training of personnel was not adequate in performing inspection of the probable maximum precipitation door seals [H.2(b)](Section 1R01).

Inspection Report# : [2011003](#) (pdf)

Significance: G Jun 27, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Follow Scaffold Control Procedure

Green. The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” for the failure to adequately implement scaffolding control procedural requirements related to post-installation inspections and engineering safety evaluations for scaffolding constructed within 2 inches of safety-related or fire protection equipment. During plant walkdowns, inspectors identified multiple examples of the licensee not properly implementing Entergy’s corporate and site procedures for the control of scaffolding. The licensee’s immediate corrective actions included inspecting the scaffolding that had been installed, modifying or removing it where appropriate, and properly posting the scaffolds. This issue was entered into the licensee’s corrective action program as Condition Reports CR-GGN-2011-03480, CR-GGN-2011-03601, CR-GGN-2011-03602, and CR-

GGN-2011-03603.

The inspectors determined that this finding is more than minor because it is associated with the external factors and equipment performance attributes of the Mitigating Systems Cornerstone and 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," inspectors determined the finding was of very low safety significance (Green), because it was not a design or qualification deficiency, did not represent a loss of a system safety function, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event.

The inspectors determined the apparent cause of this finding was lack of supervisor oversight during scaffold construction. Therefore the finding has a cross-cutting aspect in the area of human performance associated with work practices, in that the licensee did not provide effective supervisor oversight of workers constructing scaffolding to ensure these activities were performed per procedural requirements [H.4(c)](Section 1R04).

Inspection Report# : [2011003](#) (pdf)

Significance:  Jun 27, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Identify Conditions Adverse to Fire Protection

Green. The inspectors identified a noncited violation of License Condition 2.C(41) for the failure to identify conditions adverse to the fire protection program. Specifically, during required inspections of the material condition of the sprinkler system, the licensee failed to identify several instances of bent or misaligned sprinkler head deflector plates and a painted sprinkler head. Corrective action included correcting bent or misaligned plates and replacing the painted sprinkler head. This issue was entered into the licensee's corrective action program as Condition Report CR-GGN-2011-03132.

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. Specifically, the safety concern is that the number of bent or misaligned sprinkler heat canopies and painted sprinkler heads would not provide an adequate area-wide coverage of suppression. The inspectors evaluated the significance of this finding using Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process." The deficiency involved the Fixed Fire Protection Systems category. Using Appendix F,

- 4 - Enclosure

Attachment 2, "Degradation Rating Guidance Specific to Various Fire Protection Program Elements," the inspectors determined that the deficiency had low degradation since less than 10 percent of the heads in the affected fire area were nonfunctional, a functional head remained within 10 feet of the combustibles of concern, and the system remained nominally code compliant. This finding screened as having very low safety significance (Green) in Phase 1 of Manual Chapter 0609, Appendix F. This finding has a cross-cutting aspect in the area of human performance associated with resources because the procedure used to inspect the condition of these sprinklers did not contain specific criteria for identifying unacceptable sprinkler conditions [H.2(c)](Section 1R05).

Inspection Report# : [2011003](#) (pdf)

Significance:  Jun 27, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Ensure that Safety Related Manholes were Properly Sealed to Prevent the Entry of Flammable Liquid

Green. The inspectors identified a noncited violation of Facility Operating License Condition 2.C(41), involving the failure to ensure that manholes MH01, MH20 and MH21 were properly sealed to prevent the entry of flammable liquid. During the performance of the manhole/vault inspection, the inspectors were reviewing engineering change packages associated with solar sump pumps for MH20 and MH21. During their review, they determined that the licensee was not meeting the requirements of their license bases documents for MH20 and MH21, which contain safe shutdown cables for standby service water trains A and B. The licensee's immediate corrective action included placing hazmat barricades around each manhole to prevent flammable fluids from entering the manholes. This issue was entered into the licensee's corrective action program as Condition Report CR-GGN-2011-00562.

This finding was more than minor because it was associated with the protection against external factors 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. Using Inspection Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," Table 3b, Item 1 directs the inspectors to Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process." However, an NRC senior reactor analyst determined that the unique nature of this performance deficiency did not lend itself to analysis by the methods provided in Appendix F. Therefore, a Phase 3 analysis was performed. Based on a bounding analysis, the analyst determined that the change in core damage frequency was approximately 1.5E-7/yr. The result was low because of the relatively short periods of time that fuel was actually being transferred, the low probability of transfer system failures, and the low likelihood that a loss of normal service water initiator would occur following a fire in the subject manholes. This noncited violation was therefore determined to be of very low safety significance (Green). This finding has a cross-cutting aspect in the area of problem identification and resolution associated with corrective actions because licensee personnel failed to initiate a condition report when the issue was identified during the development of their engineering change package, which resulted in the failure to ensure the safety related manholes were sealed in accordance with their license based documents [P.1(a)](Section 1R06).
Inspection Report# : [2011003](#) (pdf)

Significance:  Jun 27, 2011

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Failure to Provide Adequate Procedures for High Pressure Core Spray Minimum Flow Valve Surveillance Testing

Green. The inspectors reviewed a self-revealing noncited violation of Technical Specification 5.4.1.a for the licensee's failure to provide adequate testing procedures, which resulted in the high pressure core spray minimum flow valve inadvertently stroking approximately 11 times during a surveillance test. The excessive stroking of the valve resulted in the unplanned inoperability of the high pressure core spray system because the valve's feeder breaker overcurrent instantaneous trip setpoint had drifted below the manufacturer's tolerance for the existing setting. As immediate corrective action, the licensee replaced the degraded breaker. This finding was entered into the licensee's corrective action program as Condition Report CR-GGN-2011-01901.

The finding is more than minor because it is associated with the procedure quality 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. Using Inspection Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," inspectors determined that the finding was of very low safety significance (Green) because it did not result in a loss of system safety function since the high pressure core spray system would still have been functional even with the minimum flow valve potentially failing open. Additionally, it did not represent a 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 had a cross-cutting aspect in the area of problem identification and resolution associated with operating experience in that licensee had not incorporated operating experience from a similar event that had occurred at another Entergy site [P.2(b)](Section 1R12).

Inspection Report# : [2011003](#) (pdf)

Significance:  Jun 27, 2011

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Loose Fuse Clips in Division 3 Emergency Diesel Generator

Green. The inspectors reviewed a self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to take adequate corrective actions for a significant condition adverse to quality associated with the division 3 emergency diesel generator. While performing a maintenance effectiveness review of the diesel generators, the inspectors noted on October 17, 2009, at 9:07 p.m., the FU-7 fuse for the division 3 diesel generator was determined to have a faulty fuse clip, resulting in the inoperability of the diesel generator due to loss of power to the direct current powered fuel pumps. Then on March 18, 2011, the division 3 emergency diesel generator was again rendered inoperable due to a faulty fuse clip on the FU-8 fuse holder, which is of the same design and function as the FU-7 fuse holder in the previous occurrence. Short term corrective action included replacing the fuse holder. This finding was entered into the licensee's corrective action program as Condition Report CR-GGN-2011-01868.

The finding is more than minor because it is associated with equipment performance attribute of the Mitigating Systems Cornerstone and adversely affected the associated 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," inspectors determined the finding was of very low safety significance (Green) because it was not a design or qualification deficiency, did not represent a loss of a system safety function, 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 resources because the training provided to correct the initial event was not adequate to ensure proper fuse installation and verify good connection existed between the fuse and fuse holder [H.2(b)](Section 1R12).

Inspection Report# : [2011003](#) (pdf)

Significance:  Jun 27, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Assure Configuration Control of Safety Related Systems

Green. The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to review the suitability of leaving test fittings on reactor coolant system flow transmitter equalizing block drain ports instead of the design specified manifold plugs. As corrective action, the licensee replaced the test fittings with the correct drain plugs. This finding was entered into the licensee's corrective action program as Condition Report CR-GGN-2011-04485.

This finding is more than minor because it is associated with the design control 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," inspectors determined that the finding was of very low safety significance (Green) because it was a design or qualification deficiency confirmed not to result in loss of operability of functionality, did not represent a loss of a system safety function, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event.

The inspectors determined that the finding had a cross-cutting aspect in the area of human performance, associated with work practices, because the licensee failed to ensure that human error prevention techniques, such as holding pre-job briefings, self- and peer-checking, and proper documentation of activities were utilized such that work activities were performed safely and personnel did not proceed in the face of uncertainty or unexpected circumstances. Specifically, the licensee failed to review the suitability of installing test and brass fittings on pressure, differential pressure and flow transmitter block valve drain ports instead of the design specified manifold plugs. [H.4(a)](Section 1R12).

Inspection Report# : [2011003](#) (pdf)

Significance:  Jun 27, 2011

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Failure to Follow a Procedure Resulting in the Inoperability of the Reactor Core Isolation Cooling System Primary Containment Isolation Valve

Green. The inspectors reviewed a self-revealing noncited violation of Technical Specification 5.4.1.a, for failure to follow a procedure resulting in the inoperability of the reactor core isolation cooling system primary containment isolation valve. This occurred while the licensee was performing surveillance on the reactor core isolation cooling system and incorrectly attached a jumper to the wrong terminal point resulting in blowing a fuse that caused a loss of control power to the reactor core isolation cooling primary containment isolation valve 1E51-F031. As immediate corrective action, the licensee removed the jumper and replaced the control power fuse. The finding was entered into the licensee's corrective action program as Condition Report CR-GGN-2011-01932.

The finding is more than minor since it is associated with the human 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. Using Inspection Manual Chapter 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," inspectors determined the finding was of very low safety significance (Green) because it was not a design or qualification deficiency, did not represent a loss of a system safety function, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather

initiating event. In addition, this finding had a human performance cross-cutting aspect associated with work practices in that the licensee did not use the proper human performance techniques of self-checking to prevent the loss of control power to a primary containment isolation valve [H.4(a)](Section 1R22).

Inspection Report# : [2011003](#) (*pdf*)

Barrier Integrity

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)

Significance: G 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)

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 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 : May 29, 2012