

Grand Gulf 1 3Q/2015 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance:  Sep 30, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Have Appropriate Instructions for Preventative Maintenance on the Division II Diesel Generator Fuel Rack Control Lever

The inspectors reviewed a self-revealing, non-cited violation of Technical Specification 5.4.1.a, for the failure to establish appropriate maintenance instructions to perform maintenance activities on the fuel rack control lever of the division II diesel generator. Specifically, the preventative maintenance instruction did not inspect for foreign material between the fuel rack control lever and the adjacent clamp, which caused the fuel rack control lever to be stuck in the open position. As a result, the division II diesel generator was rendered inoperable and unavailable. On June 28, 2015, the licensee cleaned and lubricated the fuel rack control lever and performed the preventative maintenance instruction to return the division II diesel generator to operable status. The licensee entered this issue into their corrective action program as Condition Report CR-GGN-2015-3741.

This performance deficiency is more than minor, and therefore a finding, because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609, Appendix A, “The Significance Determination Process (SDP) for Findings At-Power,” and Inspection Manual Chapter 0609, Appendix A, Exhibit 2, “Mitigating Systems Screening Questions,” the inspectors determined that the finding is of very low safety significance (Green) because it: (1) was not a deficiency affecting the design or qualification of a mitigating structure, system, or component, and did not result in a loss of functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than their technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety significant in accordance with the licensee’s maintenance rule program.

The mechanical standard was last updated in 2006, and the preventative maintenance instruction was last updated in 2012 for editorial purposes only. The inspectors determined that the cause of the deficiency occurred in 2006, and therefore, determined the finding did not have a cross-cutting aspect since it is not indicative of current licensee performance.

Inspection Report# : [2015003](#) (*pdf*)

Significance:  Jun 30, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Have Appropriate Instructions Resulted in the Unplanned Unavailability of the Reactor Core Isolation Cooling System

The inspectors reviewed a self-revealing, non-cited violation of Technical Specification 5.4.1.a, for failure to establish appropriate work instructions to properly preplan and perform maintenance that affected the performance of the reactor core isolation cooling system. Specifically, the work instructions failed to ensure that a steam supply drain pot drain alignment path was maintained while replacing valve packing 1-E51-F026. As a result, the drain path was isolated causing a group 4 isolation, which rendered the reactor core isolation cooling system unavailable. Operations personnel returned the reactor core isolation cooling system to operable status approximately 19 hours after the isolation occurred. This issue was entered into the licensee's corrective action program as Condition Report CR-GGN-2015-01677.

This performance deficiency is more than minor, and therefore a finding, because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and adversely affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to have an adequate maintenance work instruction resulted in the unplanned unavailability of the reactor core isolation cooling system. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," and Inspection Manual Chapter 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined that the finding is of very low safety significance (Green) because it: (1) was not a deficiency affecting the design or qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than their technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significant in accordance with the licensee's maintenance rule program. In addition, this finding has an avoid complacency cross-cutting aspect within the human performance area because the licensee failed to recognize and plan for the possibility of mistakes, inherent risks, and properly implement appropriate error reduction tools. Specifically, the licensee failed to recognize the importance of having a drain path during the entire maintenance activity to properly plan the activity using appropriate configuration control and work instructions.

Inspection Report# : [2015002](#) (*pdf*)

Significance:  Jun 30, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Identify High Vibration on the Division 3 EDG Soak Back Oil Pump

The inspectors identified a non-cited violation of Technical Specification 5.4.1.a, for the failure to have appropriate maintenance instructions to review and analyze vibration data on the division 3 emergency diesel generator soak back oil pump. Specifically, Work Order WO 52582051 failed to ensure an appropriate review and analysis of the vibration data collected on the division 3 emergency diesel generator soak back oil pump. As a result, the soak back oil pump on the division 3 emergency diesel generator failed due to high vibration and the emergency diesel generator was declared inoperable. As corrective actions, the licensee repaired soak back oil pump. This issue was entered issue into the licensee's corrective action program as Condition Report CR-GGN-2015-0071.

This performance deficiency is more than minor, and therefore a finding, because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, vibration data was collected, but was not appropriately reviewed and analyzed to identify a degrading soak back oil pump on the division 3 emergency diesel generator. The division 3 emergency diesel generator was declared inoperable when the failed pump coupling was identified by the licensee. Using Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," and Inspection Manual Chapter 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined that the finding is of very low safety significance (Green) because it: (1) was not a deficiency affecting the design or qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than their technical specification allowed outage time; and (4) did not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significant in accordance with the licensee's maintenance rule program. This finding has an avoid complacency crosscutting aspect within the human performance area because the licensee failed to recognize and plan for the possibility of mistakes, inherent risks, and properly implement appropriate error reduction tools. Specifically, the licensee failed to recognize the importance of including complete instructions to maintenance personnel to ensure that critical steps were accomplished.

Inspection Report# : [2015002](#) (*pdf*)

Significance:  Jun 30, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Possible Loss of Communications Systems During Control Room Fire Scenarios

The team identified a non-cited violation of License Condition 2.C.9, "Fire Protection," for the failure to provide reliable communications systems for use by operators during control room fire scenarios. The licensee included this deficiency in their corrective action program as Condition Report CR-GGN-2014-03803, and completed actions to establish alternate communications.

The failure to provide a reliable communication system for operators to use to perform a post-fire safe shutdown outside of the control room was a performance deficiency. The performance deficiency was more than minor because it was associated with the protection against external events (fire) attribute of the Mitigating Systems Cornerstone, and it adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences because it affected the ability to reach and maintain safe shutdown conditions in case of a fire. The team evaluated this finding using Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," dated September 20, 2013. Because it affected the ability to reach and maintain safe shutdown conditions in case of a fire that led to control room evacuation, a senior reactor analyst performed a Phase 3 evaluation that determined the deficiency had very low risk significance. The finding did not have a cross-cutting aspect since it is not indicative of current licensee performance.

Inspection Report# : [2015002](#) (*pdf*)

Significance: G Mar 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Take Timely Corrective Actions Associated with Division 1 and 2 Standby Service Water Pump House Ventilation System Due to Degraded Relays

The inspectors identified a 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 the division 1 and 2 standby service water pump house ventilation systems. Specifically, in June 2011, the licensee identified that relays associated with the standby service water system pump house ventilation system failed due to age/environmental degradation, which resulted in an unplanned inoperability of the standby service water system. However, the licensee did not implement timely corrective actions for replacing these relays, which resulted in the inoperability of the division 1 standby service water system in December 2014, and again in January 2015. The licensee documented this issue in their corrective action program as Condition Report CR-GGN-2015-00739. The short-term corrective actions included replacing all of the division 1 and 2 standby service water ventilation pump house relays in February and early March 2015.

The inspectors determined that the failure to take timely corrective actions to replace degraded relays in the standby service water pump house ventilation system was a performance deficiency. This performance deficiency is more than minor, and therefore a finding, because it is associated with the equipment performance 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 NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," dated June 19, 2012, and NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings at Power," dated June 19, 2012, the inspectors determined the issue to be of very low safety significance (Green) because all applicable screening questions in Manual Chapter 0609, Appendix A, Exhibit 2, were answered "no." The inspectors determined that this performance deficiency was not indicative of current plant performance, and therefore no cross-cutting aspect was considered.

Inspection Report# : [2015001](#) (*pdf*)

Significance: G Mar 31, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Follow a Procedure Resulting in the Unplanned Inoperability of the Reactor Core Isolation Cooling System

The inspectors reviewed a self-revealing, non-cited violation of Technical Specification 5.4.1.a, for failure to follow a procedure which resulted in the unplanned inoperability of the reactor core isolation cooling system. This occurred when licensee technicians tested for continuity between incorrect points, while performing surveillance activities related to the residual heat removal system. This resulted in an invalid group 4 isolation signal and an isolation of the reactor core isolation cooling steam supply. The licensee entered this issue into the corrective action program as Condition Report CR-GGN-2015-01532, and took immediate corrective actions to stop the residual heat removal system surveillance activity and restore the reactor core isolation cooling system to service.

The failure to properly follow the surveillance procedure, which resulted in the unplanned inoperability of the reactor core isolation cooling system, was a performance deficiency. This performance deficiency is more than minor, and therefore a finding, because it is associated with the human performance attribute of the Mitigating Systems Cornerstone. Specifically, the licensee's failure to properly follow the surveillance procedure resulted in the unplanned inoperability of the reactor core isolation cooling system, which adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of

Findings,” dated June 19, 2012, and Inspection Manual Chapter 0609, Appendix A, “The Significance Determination Process (SDP) for Findings at Power,” Exhibit 2, “Mitigating Systems Screening Questions,” dated June 19, 2012, the inspectors determined that the finding was of very low safety significance (Green) in that the issue did not affect the design or qualification of the reactor core isolation cooling system; did not represent a loss of the reactor core isolation cooling system function (in that the isolation could have been promptly reset by procedures, had the system operation been required); and did not represent loss of function for greater than the Technical Specification allowed outage time. The inspectors determined this finding had cross-cutting aspect in the area of human performance associated with avoiding complacency, in that the I&C technicians did not implement appropriate error reduction tools to ensure the meter was connected to the correct points, which resulted in the invalid group 4 isolation signal, and inoperability of the reactor core isolation cooling system [H.12].

Inspection Report# : [2015001](#) (*pdf*)

Significance:  Mar 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Adequately Establish Commercial-Grade Items as Basic Components

The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” for the licensee’s failure to verify the suitability of replacement parts that were procured from commercial suppliers. Specifically, the inspectors noted that none of the tests specified by the licensee were sufficient to ensure that the seismic qualification of an auxiliary relay had been maintained. The finding was entered into the licensee’s corrective action system as Condition Report CR-GGN-2014-05049.

The performance deficiency is more than minor, and therefore a finding, because it was associated with the design control 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. In accordance with IMC 0609, Appendix A, “The Significance Determination Process (SDP) for Findings At-Power,” dated June 19, 2012, Exhibit 2, “Mitigating Systems Screening Questions,” the issue screened as having very low safety significance (Green) because the licensee performed an operability determination, which evaluated the safety impacts of postulated relay chatter during a seismic event, for the applications in which these relays were installed. The licensee’s subsequent operability evaluation determined that potential relay chatter would not impact the safety-related functions of the relays in the applications in which they were installed. Thus, all applicable screening questions in Manual Chapter 0609, Appendix A, Exhibit 2, were answered “no.” A cross-cutting aspect is not being assigned to this finding.

Inspection Report# : [2015001](#) (*pdf*)

Significance:  Dec 31, 2014

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Assure Quality Installation on RCIC Steam Line

The inspectors reviewed a self-revealing non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” for failure to assure quality installation of the steam line tubing of the reactor core isolation cooling (RCIC) system. Specifically, the licensee failed to assure that rated performance limits of the ferrule connection, installed at the tee between the steam line and the pressure transmitter tube line, were met during initial installation. This failure resulted in an unplanned inoperability of the RCIC system. The licensee entered this issue into the corrective action program as Condition Report CR-GGN-2014-06792. As an immediate corrective action, the licensee replaced the tubing, the failed transmitter, and recalibrated the instruments. Furthermore, the licensee revised their system operation procedure for the RCIC system. This revision requires all steam isolation valves to be closed during this

test, and that system recovery starts by opening Valve 1E51F076 (warming bypass valve around the 1E51F063) to allow adequate warming of the steam lines after isolation.

The inspectors determined that the failure to assure quality installation of the ferrule connection on the steam line flow Transmitter 1E31N083B was a performance deficiency. The performance deficiency is more than minor and therefore a finding because it is associated with the design control attribute of the Mitigating Systems Cornerstone. Specifically, failure to assure steam lines in the RCIC system meet rated performance limits, may result in the unavailability and unreliability of a system that is relied upon to respond to initiating events to prevent undesirable consequences. Using NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process for Findings at Power," dated June 19, 2012, the inspectors determined that the issue required a detailed risk evaluation by the regional senior reactor analyst. This was because the finding represented an actual loss of a safety function due to the RCIC system being a single train system that was out of service for approximately 40 hours for repairs. The senior reactor analyst determined the change to the core damage frequency was $8.7E-8$ /year, and since the change to core damage frequency was less than $E-7$, no evaluation of external events or the large early release frequency was required. The finding was of very low safety significance (Green). The inspectors did not identify a cross-cutting aspect, as the performance deficiency is not reflective of current plant performance.

Inspection Report# : [2014005](#) (*pdf*)

Barrier Integrity

Emergency Preparedness

Significance:  Mar 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Emergency Action Level Scheme for Nonfunctional Seismic Monitor

The inspectors identified a non-cited violation of 10 CFR 50.54(q)(2) for the licensee's failure to follow and maintain the effectiveness of an emergency plan that meets the requirements of the planning standard 50.47(b)(4), which requires that a standard emergency classification and action level scheme, is in use by the licensee. Specifically, the licensee had identified, on October 15, 2013, that the seismic monitoring instrumentation was non-functional, but had not further evaluated the plant configuration, and the effect on emergency action level declaration capabilities for seismic events. The licensee documented this issue in Condition Report CR-GGN-2015-00713. The corrective actions, based on CR-GGN-2013-06514, were implemented, and a new seismic monitor was installed, tested, and brought into service on January 30, 2015.

The licensee's inability to promptly declare Emergency Action Level (EAL) HA6, as required in the approved emergency classification and action level scheme per 10 CFR Part 50.47(b)(4), was a performance deficiency. This performance deficiency is more than minor, and therefore a finding, because it is associated with the procedure quality attribute of the Emergency Preparedness Cornerstone and adversely affects the cornerstone objective to ensure that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Specifically, it negatively impacts the cornerstone attribute of procedure quality in that the plant configuration prohibited the timely declaration of the facility EALs, as written. Using NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," dated June 19, 2012, the inspectors determined that the issue affected the Emergency Preparedness Cornerstone. In accordance with NRC Inspection Manual Chapter 0609, Appendix B, "Emergency Preparedness Significance Determination Process," dated September 23, 2014, the inspectors determined that the issue is of very low safety significance (Green) because an Emergency Action Level was rendered ineffective such that HA6 would not be declared, consistent with Table 5.4-1 and Figure 5.4-1. The

inspectors determined the finding had a cross-cutting aspect in the area of problem identification and resolution associated with evaluation, in that the organization did not thoroughly evaluate issues to ensure that resolutions address causes, and extent of conditions, commensurate with their safety significance; in that while following Technical Requirements Manual requirements for a non-functional piece of equipment (seismic monitor), the complete effect was not evaluated to ensure the EALs were still capable of being implemented [P.2].

Inspection Report# : [2015001](#) (*pdf*)

Occupational Radiation Safety

Significance:  Mar 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Properly Calibrate Main Steam Line Radiation Monitors and Containment/Drywell High Range Radiation Monitors

The inspectors identified a non-cited violation of 10 CFR 20.1501(c) for the licensee's failure to properly calibrate the main steam line radiation monitors and the containment/drywell high range radiation monitors. The violation was of very low safety significance and was entered into the licensee's corrective action program as Condition Report CR-GGNS-2015-01832.

The failure to properly calibrate radiation monitors was a performance deficiency. The performance deficiency is more than minor, and therefore a finding, because it adversely affects the cornerstone objective to ensure adequate protection of employee health and safety and is associated with the cornerstone attribute of plant instrumentation. Specifically, the failure to properly calibrate radiation monitors impacts their ability to be used to assess dose rates. Using Inspection Manual Chapter 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," dated August 19, 2008, the inspectors determined the finding to be of very low safety significance because it was not an as low as reasonably achievable (ALARA) issue, there was no overexposure or substantial potential for overexposure, and the licensee's ability to assess dose was not compromised. This finding has a cross-cutting aspect in the resources component of the human performance area because the licensee did not ensure that calibration procedures were adequate, nor was proper calibration equipment designed, characterized, and made available [H.1].
Inspection Report# : [2015001](#) (*pdf*)

Public Radiation Safety

Significance:  Mar 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Establish, Implement, and Maintain Appropriate Changes to the Offsite Dose Calculation Manual For REMP Airborne Sampling

The inspectors identified a non-cited violation of Technical Specification 5.5.1, "Offsite Dose Calculation Manual (ODCM)." Specifically, when changes were made to the Offsite Dose Calculation Manual in 1997, the licensee failed to establish an airborne sampling location for a community with the highest deposition factor (D/Q) for the site. As immediate corrective actions, the licensee evaluated their Offsite Dose Calculation Manual, evaluated the dose differential for the monitoring locations, and developed a plan to meet the environmental sampling requirements. The

issue was documented in Condition Report CR-GGNS-2015-01835.

The failure to establish an air sampling location in the vicinity of a community having the highest D/Q was a performance deficiency. The performance deficiency is more than minor, and therefore a finding, because it adversely affects the cornerstone objective to ensure adequate protection of public health and safety from exposure to radioactive materials released into the environment and public domain. Specifically, the failure to maintain the Offsite Dose Calculation Manual with appropriate airborne radionuclide sampling requirements adversely impacts the licensee's ability to validate offsite radiation dose assessments for members of the public under certain effluent release conditions. Using Inspection Manual Chapter 0609, Appendix D, dated February 12, 2008, "Public Radiation Safety Significance Determination Process," the inspectors determined that the violation had very low safety significance because it involved the environmental monitoring program. This finding has a cross-cutting aspect in the procedure adherence component of the human performance area because licensee personnel failed to follow procedures when they determined the airborne sampling locations for the updated Radiological Environmental Monitoring Program [H.8].

Inspection Report# : [2015001](#) (*pdf*)

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.

Miscellaneous

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