

Grand Gulf 1

4Q/2010 Plant Inspection Findings

Initiating Events

Significance:  Sep 27, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Risk Assessment for Switchyard Battery Replacement

Green. The inspectors identified a Green noncited violation of 10 CFR 50.65(a)(4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," for failure to properly assess the risk impact of maintenance on the switchyard batteries. Specifically, plant personnel evaluated the work as "light" switchyard work when it should have been evaluated as heavy equipment, which increases the likelihood of a loss of offsite power transient. The licensee entered this issue into the corrective action program as Condition Report CR-GGN-2010-06668.

The finding was more than minor because it was associated with the Protection Against External Factors attribute of the Initiating Event (IE) Cornerstone. Because the finding affects the licensee's assessment of risk associated with performing maintenance activities, IMC 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," directs significance determination via the use of IMC 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process." In accordance with Flowchart 1 of Appendix K, the significance of this finding was determined to be of very low safety significance (Green), because the calculated Incremental Core Damage Probability Deficit (2E-8) was not greater than 1.0E-6. This finding has a cross-cutting aspect in the area of human performance because the licensee failed to use a systematic decision making process using available risk assessment guidance and did not obtain interdisciplinary input on an important risk management decision [H.1(a)] (Section 1R13).

Inspection Report# : [2010004](#) (pdf)

Significance:  Mar 27, 2010

Identified By: Self-Revealing

Item Type: FIN Finding

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

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

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

Significance:  Mar 27, 2010

Identified By: Self-Revealing

Item Type: FIN Finding

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

Green. The inspectors reviewed a self-revealing finding involving the failure of site management to ensure that

adequate corrective actions were implemented to resolve the effects of a large steam leak in the turbine building. Specifically, the reactor experienced an automatic scram on low reactor water level due to the 'B' reactor feed pump minimum flow valve failing open and a subsequent trip of the 'A' reactor feed pump. The scram investigation determined that the minimum flow valve failed open due to condensation in a cable routing box. The condensation was caused by a large steam leak on the second stage moisture separator re-heater drain valve. Cable splices in the box were submerged in water and eventually caused those cables to short to ground. The licensee entered this issue into the corrective action program as Condition Report CR-GGN-2010-01503. This finding is more than minor because it was associated with the initiating events cornerstone attribute of equipment performance, and it affected the associated cornerstone objective to limit the likelihood of those events that upset plant stability and that challenge critical safety functions during shutdown, as well as during power operations. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, the inspectors concluded that the transient initiator did not contribute to both the likelihood of a reactor trip and to the likelihood that mitigation equipment or functions would not be available. This is because the reactor feed pump 'B' was able to restore reactor water level post scram. As a result, the issue was of very low safety significance (Green). The cause of this finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program component because the licensee failed to prioritize and thoroughly evaluate the extent of the cause of the water grounding sensitive electronic equipment in the vicinity of the steam leak [P.1(c)]. (Section 40A3.4) Inspection Report# : [2010002](#) (*pdf*)

Mitigating Systems

Significance:  Sep 27, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Degraded Fire Door Barrier Protecting the Safeguards Switchgear Rooms

Green. The inspectors identified a Green noncited violation of Facility Operating License Condition 2.C(41) involving the failure to ensure that fire barriers protecting safety-related areas were functional during monthly fire barrier inspections. The inspectors identified that fire door OC211, crossover door between division 1 and 2 switchgear rooms, was missing 5 screws in the divider overlap and there was a three inch crack in the door on the bottom left side. The Fire Hazards Analysis Report, Section 9A.2.4 defines fire doors as a fire barrier, and Section 9A.5.7 and 9A.5.8, "Fire Area 7" and "Fire Area 8", respectively, describe the electrical switchgear rooms as having 3-hour fire rated barriers. Operations initiated an hourly fire watch for the non-functional door per the technical requirements manual. The licensee entered this issue into their corrective action program as Condition Report CR-GGN-2010-05541.

The finding was more than minor since it was associated with the protection against external factors attribute of the reactor safety Mitigating Systems (MS) 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 Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," the inspectors determined that the finding impacted the fire confinement category. The inspectors assigned a low degradation rating because the cracks did not create an actual hole through the door. The inspectors concluded that the finding was of very low safety significance (Green) because the degraded barrier was expected to maintain nearly the same level of effectiveness and reliability had the degradation not been present, and there were no fire ignition sources or combustible materials in the area that would subject the barrier to direct flame impingement. The cause of this finding has a crosscutting aspect in the area of human performance associated with resources, because plant personnel failed to adequately evaluate and provide proper maintenance for degrading fire doors [H.2(d)] (Section 1R05) Inspection Report# : [2010004](#) (*pdf*)

Significance:  Sep 27, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Remove Foreign Material from the Control Room Air Conditioning Systems

Green. The inspectors identified a Green noncited violation of 10 CFR 50 Appendix B, Criterion XVI, for the failure to remove foreign material from the control room air conditioning oil and Freon subsystems. The pencil strainer on

the compressor was found to be 90 percent clogged by foreign material. Plant personnel cleaned the pencil strainer, but placed the CRAC B system back in service without cleaning the oil and Freon subsystems which resulted in the CRAC B system becoming inoperable two weeks later. The licensee entered this issue into the corrective action program as Condition Report CR-GGN-2010-04839.

The finding was more than minor because it was associated with the equipment performance attribute of the reactor safety Mitigating Systems (MS) 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 Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, the finding was determined to be of very low safety significance since it did not result in a loss of system safety function. The cause of this finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program because the licensee failed to appropriately address the foreign material in the control room air conditioning subsystems [P.1(d)] (Section 1R15).

Inspection Report# : [2010004](#) (pdf)

Significance:  Sep 27, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Properly Implement an Adequate Structural Monitoring Program

Green. The inspectors identified a Green noncited violation of 10 CFR 50 Appendix B Criterion V for failure to perform required inspection of safety-related plant structures. Specifically, the inspectors found inspections that had been only partially performed and some areas that had not been documented as inspected. Subsequent walkdowns identified several deficiencies including concrete cracks and spalling, deficient coatings, rusted tanks and exposed rebar. The licensee entered this issue into the corrective action program as Condition Report CR-GGN-2010-06871. The finding is greater than minor because it is associated with the Mitigating Systems (MS) Cornerstone attribute of protection against external events and affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Using Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, the finding is determined to have very low safety significance since it did not represent a loss of system safety function, an actual loss of safety function of a single train for greater than its TS allowed outage time, or screen as potentially risk-significant due to a seismic, flooding, or severe weather initiating event. This finding has a crosscutting aspect in the area of human performance, associated with the resources component, in that the licensee failed to accurately document and manage the structural inspections [H.2(c)] (Section 40A2).

Inspection Report# : [2010004](#) (pdf)

Significance:  Jun 27, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Perform an Adequate Risk Assessment for Emergent Work Activities

• Green. The inspectors identified a noncited violation of 10 CFR 50.65 a(4) for failure to perform adequate risk assessments prior to flushing the reactor heat removal systems suction piping and filling and venting of the alternate decay heat removal system. The licensee entered this issue into the corrective action program as Condition Report CR GGN 2010 02553.

This finding is more than minor because it is associated with the human performance attribute of the Mitigating Systems Cornerstone, adversely affecting the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using IMC 0609, Significance Determination Process, Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," the inspectors evaluated the finding using IMC 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process." Using Appendix K, the inspectors determined that the finding has a very low safety significance because the finding was related only to the performance of risk management actions and did not exceed the threshold for core damage probability and large early release probability. The cause of this finding has a crosscutting aspect in the area of human performance associated with resources, because the licensee failed to provide adequate training on the implementation of the new risk management procedure [H.2(b)] (Section

1R13.b).

Inspection Report# : [2010003](#) (pdf)

Significance:  Mar 27, 2010

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

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

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

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

Barrier Integrity

Significance:  Jun 27, 2010

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

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

Green. The inspectors reviewed a self-revealing noncited violation of Technical Specifications 5.4.1(a), involving a loss of decay heat removal in the spent fuel pool due to station operators failing to follow the fuel pool cooling and cleanup system operating instruction. The licensee entered this issue into the corrective action program as Condition Report CR GGN 2010 02172.

This finding is more than minor because it is associated with the human performance attribute of the Barrier Integrity Cornerstone and adversely affects the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Using the Manual Chapter 0609, Significance Determination Process, Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," the inspectors determined that the finding has a very low safety significance because it only represented a loss of spent fuel pool cooling that would not preclude restoration of cooling to the spent fuel pool prior to pool boiling. The cause of this finding has a crosscutting aspect in the area of human performance associated with work practices, because licensee personnel failed to use adequate self- and peer-checking techniques to remove the filter/demineralizer from service [H.4(a)] (Section 1R15.b).

Inspection Report# : [2010003](#) (pdf)

Significance:  Mar 27, 2010

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

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

Green. The inspectors reviewed a self-revealing non-cited violation of Technical Specification 5.4.1a when a fuel handling platform operator failed to move a fuel assembly in accordance with station procedures. Specifically, a new fuel assembly and the fuel handling platform mast were damaged when the platform was moved away from the fuel preparation machine prior to ensuring that the fuel assembly was clear of the machine. The licensee entered this issue into the corrective action program as Condition Report CR-GGN-2010-01883. This finding is more than minor because the finding was associated with the human performance attribute of the barrier integrity cornerstone and adversely affected the cornerstone's objective to provide reasonable assurance that physical design barriers (i.e. fuel cladding) protect the public from radionuclide releases caused by accidents or events. The failure to follow the fuel handling procedures affected the cornerstone's objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Inspection Manual Chapter 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1-Initial Screening and Characterization of Findings," was used to evaluate the significance of the finding. Attachment 0609.04, Table 4a, was used to evaluate the impact of the finding on fuel clad integrity. Since the finding represented a fuel handling error that did not cause damage to fuel clad integrity, the finding was determined to be of very low safety significance (Green). The finding has a cross cutting aspect in the work practices component of the human performance area because the operator performing the fuel movement and the spotter providing oversight of the fuel movement failed to employ effective self and peer checking techniques such that fuel handling activities were performed safely [H.4.(a)]. (Section 40A3.5) Inspection Report# : [2010002](#) (pdf)

Emergency Preparedness

Significance:  Sep 27, 2010

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Primary Meteorological Tower Inoperable Without Compensatory Actions in Place

Green. A self-revealing non-cited violation of 10 CFR 50.47(b)(8), was identified when the Grand Gulf Nuclear Station Primary Meteorological Tower was rendered inoperable without compensatory actions from July 6 through July 27, 2010. The primary meteorological tower was declared inoperable by operations for maintenance to perform surveillance and preventative maintenance activities. The technicians did not finish the surveillance due to problems with data points exceeding allowable tolerance limits, and left the tower with the 10 and 50 meter instruments lowered to the ground. Inaccurate meteorological data continued to be displayed in the plant computer system. During the subsequent night shift, the control room supervisor inadvertently closed out the limiting condition of operations for the primary meteorological tower being out of service prior to the tower being returned to an operable condition. The licensee entered this issue into their corrective action program as Condition Report CR GGN 2010-05748.

The finding was more than minor because it was associated with the Facilities and Equipment attribute of the Emergency Preparedness (EP) Cornerstone and adversely affected the cornerstone objective of ensuring the capability to implement adequate measures to protect public health and safety in the event of a radiological emergency. Specifically, from July 6 through July 27, 2010, key emergency response members could not have accurately performed their assigned emergency notification and dose assessment functions, with an absence of compensatory measures. In accordance with NRC Inspection Manual Chapter 0609, Appendix B, "Emergency Preparedness Significance Determination Process," Sheet 1 and the examples contained in section 4.8 of the same document, the inspectors determined the finding to be of very low safety significance (Green) because the performance deficiency was a failure to comply with NRC regulations, the deficiency was associated with a non-risk significant planning standard as defined in MC0609 Appendix B, and it did not represent a functional failure of the planning standard. The cause of this finding has a crosscutting aspect in the area of human performance associated with work control, because the maintenance and operations department failed to appropriately communicate and coordinate work activities on the primary meteorological tower. [H.3(b)] (Section 1R19).

Inspection Report# : [2010004](#) (pdf)

Occupational Radiation Safety

Significance: G Sep 27, 2010

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Failure to Follow the Radiological Protection Job Coverage Procedure

Green. The inspectors reviewed a self-revealing Green noncited violation of Technical Specification 5.4.1.a for a procedure violation. Radiation Work Permit 20101704 covered work on Valve 1G33F253 in the reactor water cleanup room. Work on this valve was conducted over a 6-day period, May 6 through 11, 2010, and in that time, three personnel contaminations occurred. Appropriate protective clothing was not assigned by the job coverage technician and contributed to the three personnel contaminations and radioactive intake by one of the workers of 62 mrem. The failure to assign appropriate protective clothing during radiological work is a performance deficiency. The finding is greater than minor because it was associated with the Public Radiation Safety Cornerstone attribute of program and process (exposure control), and affected the cornerstone objective, in that it resulted in an individual receiving unplanned dose. Using the Occupational Radiation Safety Significance Determination Process, the inspectors determined the finding to have very low safety significance because: (1) it was not associated with ALARA planning or work controls, (2) there was no overexposure, (3) there was no substantial potential for an overexposure, and (4) the ability to assess dose was not compromised. The finding has a human performance crosscutting aspect associated with work practices, because the radiation protection technician covering the job did not use risk insights or take the job site condition into consideration when assigning protective clothing for radiological work [H.3(a)] (2RSO4).
Inspection Report# : [2010004](#) (*pdf*)

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

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