Grand Gulf 1
3Q/2008 Plant Inspection Findings

Initiating Events

Significance: G Jun 21, 2008
Identified By: Self-Revealing
Item Type: FIN Finding
Ineffective Corrective Actions in Response to Plant Transients Resulting from Animal Intrusions.
The inspectors reviewed a self-revealing Green finding involving ineffective corrective actions that resulted in an unplanned down power caused by an animal intrusion. The plant experienced a loss of the balance of plant Transformer 23 with a loss of power to the plant service water pumps. Operators reduced reactor power to 47 percent. The control room dispatched operators to the river via a boat due to high river level and discovered a dead raccoon in the vicinity of the transformer. The inspectors noted that two previous reactor scrams had been caused by raccoons, and an injured raccoon had previously been found at the base of Transformer 23. The inspectors concluded that the flooding conditions which have been routinely experienced at the site and the occurrence of raccoon events at the site could have been used to anticipate and mitigate the unplanned down power. The licensee entered this issue into their corrective action program as Condition Report CR GGN 2008-02089.
The finding was more than minor because it was associated with the initiating events cornerstone attribute of equipment performance and affected the associated cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, the inspectors concluded that a Phase 2 evaluation was required because the finding impacted both the Initiating Event and Mitigating Systems Cornerstone. The inspectors performed a Phase 2 analysis using Appendix A “Determining the Significance of Reactor Inspection Findings for At-Power Situations,” of Manual Chapter 0609, “Significance Determination Process,” and the Phase 2 Worksheets for Grand Gulf Nuclear Station. The inspectors determined there was an increase in likelihood of a transient without the power conversion system but there was no reduction in remaining capability. Because the exposure time of the finding was less than 30 days, the result of the Phase 2 analysis was that the finding had very low safety significance (Green). The cause of this finding has a crosscutting aspect in the area of problem identification and resolution associated with operating experience in that the licensee failed to implement proper corrective actions to prevent animals from causing a plant transient [P.2(b)].

Inspection Report# : 2008003 *(pdf)*

Significance: G Mar 22, 2008
Identified By: NRC
Item Type: FIN Finding
Ineffective Corrective Actions in Response to Resin in the Electro-hydraulic Control System.
The inspectors identified a finding involving ineffective corrective actions in response to resin intrusion in the electro-hydraulic control system. The inspectors reviewed the corrective actions from a condition report involving a resin intrusion into the electro-hydraulic control system via a failed temporary ion-exchange filter in 2003. Review of the corrective actions associated with the 2003 event revealed that a long-range recovery plan was developed to remove resin from the electro-hydraulic control system. However, the recovery plan corrective actions were closed without licensee actions to remove resin from the electro-hydraulic control system. The failure to implement effective corrective actions following the 2003 resin intrusion event directly resulted in electro-hydraulic control stability issues seen in the fall of 2007, including reactor pressure perturbations and reductions in reactor power. This issue was entered into the licensee’s corrective action program as Condition Report CR-GGN-2007-04972.
The finding was more than minor because it was associated with the initiating events cornerstone attribute of equipment performance and affected the associated cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Using the MC 0609, "Significance Determination Process," Phase 1 worksheet, the finding was determined to have very low safety significance because the finding did not contribute to the likelihood that mitigating equipment would not be available following a reactor trip.
(Section 4OA2)

Inspection Report# : 2008002 *(pdf)*

Significance: G Dec 31, 2007
Identified By: NRC
Item Type: FIN Finding
Improper Control of Troubleshooting Causes a Loss of Condenser Vacuum
The inspectors identified a finding involving a loss of condenser vacuum caused by improper troubleshooting of the seal steam pressure controller. Specifically, the licensee failed to provide adequate work instructions and procedural limitations during troubleshooting of the seal steam pressure controller. As a result, the plant experienced a loss of condenser vacuum and a plant transient. The licensee entered this issue

into their corrective action program as Condition Report CR-GGN-2007-04626.
The finding was more than minor because it was associated with the initiating events cornerstone attribute of equipment performance and affected the associated cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Using the MC 0609, "Significance Determination Process," Phase 1 Worksheet, the inspectors concluded that a Phase 2 evaluation was required because the finding impacted both the initiating event and mitigating systems cornerstone. The inspectors performed a Phase 2 analysis using Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations," of Manual Chapter 0609, "Significance Determination Process," and the Phase 2 Worksheets for Grand Gulf Nuclear Station. The inspectors assumed that only the power conversion system was affected and all other mitigating systems were available. Based on the results of the Phase 2 analysis, the finding was determined to have very low safety significance.
The cause of the finding was related to the human performance crosscutting component of decision making, in that the licensee failed to use conservative assumptions during troubleshooting activities and performed these activities without determining the validity of the troubleshooting instructions and identifying possible unintended consequences [H.1(b)] (Section 4OA3).
Inspection Report# : 2007005 *(pdf)*

Significance: G Dec 31, 2007
Identified By: NRC
Item Type: FIN Finding
Inadequate Engineering Review of Plant Service Water Modification
A self-revealing finding was identified involving the failure of a plant service water piping flange due to an improper flow control valve design modification. Specifically, the licensee failed to perform an adequate review of an engineering modification and the maintenance work orders did not have detailed installation instructions. As a result, the plant experienced a plant transient. The licensee entered this issue into their corrective action program as Condition Report CR-GGN-2007-05040.
The finding was more than minor because it was associated with the initiating events cornerstone attribute of equipment performance and affected the associated cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Using the Manual
Chapter 0609, “Significance Determination Process,” Phase 1 worksheet, the finding was determined to have very low safety significance because the finding did not contribute to the likelihood that mitigating equipment or functions would not be available following a reactor trip.
The cause of the finding was related to the human performance crosscutting component of work practices in that the responsible engineers failed to perform adequate self and peer checking during the development and review of the design modification to the plant service water flow control check valves [H.4(a)] (Section 4OA3).
Inspection Report# : 2007005 *(pdf)*

Significance: G Dec 31, 2007
Identified By: NRC
Item Type: FIN Finding
Failure to Follow Procedure Results in Loss of Condener Vacuum
A self-revealing finding was identified involving a loss of condenser vacuum caused by plant operators improperly removing a steam jet air ejector from service. Specifically, the licensee failed to isolate the steam jet air ejector from service as delineated in the system operating instructions. As a result, the plant experienced a loss of condenser vacuum and a plant transient. The licensee entered this issue into their corrective action program as Condition Report CR-GGN-2007-05676.
The finding was more than minor because it was associated with the initiating events cornerstone attribute of equipment performance and affected the associated cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Using the MC 0609, "Significance Determination Process," Phase 1 Worksheet, the inspectors concluded that a Phase 2 evaluation was required because the finding impacted both the initiating event and mitigating systems cornerstone. The inspectors performed a Phase 2 analysis using Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations," of Manual Chapter 0609, "Significance Determination Process," and the Phase 2 Worksheets for Grand Gulf Nuclear Station. The inspectors assumed that only the power conversion system was affected and all other mitigating systems were available. Based on the results of the Phase 2 analysis, the finding was determined to have very low safety significance.
The cause of the finding was related to the human performance crosscutting component of work practices in that the control room supervisor failed to ensure supervisory and management oversight of work activities such that nuclear safety is supported [H.4(c)] (Section 4OA2).
Inspection Report# : 2007005 *(pdf)*

Mitigating Systems

Significance: G Sep 21, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Monitor Performance of Four Maintenance Rule Systems.
The inspectors identified a Green noncited violation of 10 CFR 50.65(a)(2) involving the failure to adequately monitor the performance of four Maintenance Rule systems. Several discrepancies in the Maintenance Rule Program were discovered by the inspectors, including

unevaluated condition monitoring failures in the neutron monitoring system and an unevaluated functional failure in the standby gas treatment system. Plant personnel implemented additional corrective actions to fully investigate the potential extent of this condition and the apparent weakness in the condition report screening process used for the Maintenance Rule program. As a result, the Maintenance Rule expert panel classified four systems as needing increased monitoring and goal setting, moving these systems from an a(2) to an a(1) status. The licensee entered this issue into the corrective action program as Condition Report CR-GGN-2008-02219.
This finding is more than minor since it was similar to Inspection Manual Chapter 0612, Appendix E, Example 7.b in that the problem involved degraded equipment performance. This finding was characterized under the significance determination process as having very low safety significance because the maintenance rule aspect of the finding did not cause an actual loss of safety function of the system nor did it cause a component to be inoperable. 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 proper self-checking and peer-checking to identify repetitive maintenance rule functional failures and also failed to properly document condition report screening activities [H.4(a)] (Section 1R12).
Inspection Report# : 2008004 *(pdf)*

Significance: G Sep 21, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Perform an Adequate Risk Assessment during Adverse Weather Conditions.
The inspectors identified a Green noncited violation of 10 CFR 50.65 (a)(4), involving the failure to perform risk assessments following multiple declared tornado watches affecting Grand Gulf Nuclear Station during the landfall of Hurricane Gustav. On the morning of September 3, 2008, the inspectors noted that the licensee had not evaluated the increased risk from a declared tornado watch for the Claiborne County area. The inspectors brought this to the attention of plant personnel and a risk assessment was performed and plant risk was changed from a 'Green' to a 'Yellow' risk condition. The inspectors then reviewed the tornado watches declared by the National Weather Service that affected Claiborne County during the landfall of Hurricane Gustav, and noted that six separate tornado watches had been declared over the previous three days. A review of the control room logs showed no documentation of changes in plant risk condition. The licensee entered this issue into the corrective action program as Condition Report CR-GGN-2008-04397.
This finding is more than minor because the risk assessments failed to consider unusual external conditions that were present or imminent. Using Manual Chapter 0609, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," Flowchart 1, "Assessment of Risk Deficit" and consulting with the regional senior risk analyst, the inspectors determined the finding of very low safety significance due to a calculated incremental core damage probability deficit of 4.38E-08. This finding has a crosscutting aspect in the area of human performance associated with work practices in that plant personnel failed to follow the risk management procedure [H.4(b)] (Section 1R13).

Inspection Report# : 2008004 *(pdf)*

Significance: G Sep 21, 2008
Identified By: NRC
Item Type: VIO Violation
Failure to Perform an Adequate Inspection of PMP Door Seals Protecting Safety Related Equipment.
The inspectors identified a Green cited violation of 10 CFR Part 50 Appendix B, Criterion V, "Instructions, Procedures, and Drawings," involving the failure to perform an adequate inspection of probable maximum precipitation door seals protecting safety related equipment. The licensee had previously received a noncited violation for inadequate inspections of probable maximum precipitation door seals in NRC Inspection Report 05000416/2008002. On July 9, 2008, the inspectors found the entrance door to the Train B standby service water pump house not meeting the standards of the maintenance procedure because the door seals failed to make contact with the door. The extent of condition review found seven additional door seals degraded, including the doors to the diesel generator building and control building. The door seal on the Train B standby service water pump house identified by the inspectors on July 9, 2008, had not been identified by plant personnel during an extent of condition review on February 29, 2008. The licensee entered this issue into the corrective action program as Condition Report CR-GGN-2008-03216.
The finding is more than minor since it affects the protection against external factors attribute of mitigating system cornerstone. The door seals also represent a degrading condition that if left uncorrected could affect the availability, reliability, and capability of mitigating systems required to respond to initiating events to prevent undesirable consequences. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, the inspectors used the seismic, flooding, and severe weather Table 4b and determined it would affect multi-trains of safety equipment. The inspectors consulted the regional senior reactor analyst, who performed a Phase 3 analysis using many bounding and conservative assumptions. The result was a delta-CDF of 3.3E 7/yr and a delta-LERF of 6.6E-8/yr. These results confirmed that the finding had very low safety significance (Green). The cause of this finding has a crosscutting aspect in the area of problem identification and resolution in that the licensee failed to take adequate corrective actions to ensure degraded probable maximum precipitation door seals were properly evaluated and repaired in a timely manner [P.1(d)] (Section 4OA2).

Inspection Report# : 2008004 *(pdf)*

Significance: G Jun 21, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Fireproofing on Fire Barrier Protecting the Safeguards Switchgear Room

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. The inspectors identified an 8-foot length of structural steel in the east stairwell wall, which is shared by the Division I safeguards switchgear room, that did not have the required fireproofing to maintain an adequate fire barrier. The missing passive fire protection reduced the fire rating of the wall by allowing heat to transfer through the unprotected steel, thus degrading the fire containment capability assumed in the fire hazards analysis. The licensee entered this issue into their corrective action program as Condition eport CR GGN 2008 01849.
The finding was more than minor since it was associated with the protection against external factors attribute of the reactor safety Mitigating Systems Cornerstone, and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using 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 high degradation rating due to the fact that the required fireproofing was missing. The inspectors used the supplemental screening process for fire confinement findings and concluded that the finding was of very low safety significance (Green) due to the fact that the degraded barrier would have provided a minimum of 20 minutes fire endurance protection and there were no fire ignition sources or combustible materials in the area that would subject the barrier to direct flame impingement.
Inspection Report# : 2008003 *(pdf)*

Significance: G Jun 21, 2008
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Recognize the Division III Diesel Generator being Non-Functional.
The inspectors reviewed a self-revealing Green noncited violation of Technical Specification 5.4.1(a) involving the failure to follow a system operating instruction. While shutting down the Division III diesel generator, operators failed to place the outside air fan in automatic alignment resulting in the Division III diesel generator being nonfunctional. On May 5, 2008, operators had shutdown the Division III diesel generator, but they failed to recognize that the outside air fan was not running when they depressed the shutdown pushbutton for the outside air fan per the system operating instruction. The licensee entered this issue into the corrective action program as Condition Report CR-GGN-2008-02265
The finding is more than minor since it affects configuration control attribute of the Mitigating System Cornerstone objective, in that it affected the availability, reliability and capability of an onsite power source that supplies a bus that provides power to mitigating systems that respond to initiating events to prevent undesirable consequences. Using the Manual Chapter 0609, “Significance Determination Process,” Phase 1 Worksheet, inspectors determined that the finding has very low safety significance (Green) since it did not represent a loss of a safety function that exceeded the Technical Specification allowed outage time. The cause of this finding has a crosscutting aspect in the area of human performance associated with work practices in that the operating crew did not use the proper human performance techniques of self checking while securing the outside air fan for the Division III diesel generator [H.4(a)].

Inspection Report# : 2008003 *(pdf)*

Significance: G Apr 18, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Evaluate Fire Wrap Testing Discrepancies
A noncited violation of License Condition 2.C(41), "Fire Protection Program," was identified because the licensee failed to evaluate vendor fire test results to ensure that deviations from the acceptance criteria did not result in a reduction in the effectiveness of the approved Fire Protection Program. The licensee replaced existing fire barrier material installed on conduits with 3M Interam fire wrap without recognizing that applicable NRC test criteria were not met. As a result, the licensee failed to perform an evaluation to determine whether the test results would result in a reduction in the effectiveness of the fire protection provided to the cables inside the affected conduits. The new fire wrap was installed to protect redundant trains of cables necessary for safe shutdown between 2004 and 2007. This finding was entered into the licensee’s corrective action program under Condition Report 2008-01910. The licensee took prompt compensatory measures and implemented hourly fire watches while the issue was being evaluated.
Failure to properly evaluate vendor fire test results that did not satisfy the acceptance criteria in Generic Letter 86-10, Supplement 1 prior to changing the existing fire wrap with 3M Interam fire wrap as required by the approved Fire Protection Program was a performance deficiency. This finding was more than minor because it affected the protection against external factors (fire) attribute of the Mitigating Systems Cornerstone Objective to ensure the availability, reliability, and capability of systems that respond to initiating events in order to prevent undesirable consequences. This performance deficiency was also similar to the "more than minor" portion of Inspection Manual Chapter 0612, Appendix B, Example 3.i, in that an engineering evaluation was necessary to determine the acceptability of the existing fire wrap to perform its intended function. This finding was evaluated using Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," because it affected fire protection defense-in-depth strategies involving post-fire safe shutdown systems. This finding screened as having very low safety significance because it involved a fire barrier with a low degradation, since the nonconforming condition was subsequently determined to provide an acceptable margin to damage for the cables being protected.

Inspection Report# : 2008006 *(pdf)*

Significance: G Apr 18, 2008
Identified By: NRC

Item Type: NCV NonCited Violation
Fire Brigade Members Assigned Responsibilities That Conflicted with Fire Brigade Responsibilities.
A noncited violation of License Condition 2.C.(41) was identified for failure to maintain required staffing available to respond to a fire. Specifically, the approved Fire Protection Program requires that a five-person fire brigade be available onsite at all times and not assigned duties that conflict with the duties of the fire brigade. Contrary to this, on three occasions in March 2008, operators assigned as fire brigade members were directed to perform operator rounds at the radial wells. Because the Mississippi River was at flood stage, this required traveling by boat, so the operators were unable to return to the plant promptly for approximately 2 hours. This was further complicated by the fact that operator/fire brigade radios did not work during most of the boat trip and in the vicinity of the most distant well, meaning that operators could not be quickly recalled. This finding was entered into the corrective action program under Condition Report 2008-01616. This finding had a crosscutting aspect in the area of Human Performance – Work Control (H.3.b) because the licensee did not ensure that different job activities were coordinated to ensure that the fire brigade remained available at all times.
Failure to maintain a fully staffed fire brigade available onsite at all times was a performance deficiency. This finding was more than minor because it affected the protection from external factors (fire) attribute of the Mitigating Systems Cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesireable consequences. This finding was evaluated using Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," because it affected a fire protection defense-in-depth element. This finding was assigned a low degradation rating because the operations shift during the times when the fire brigade member was unavailable included extra fire brigade-trained personnel that could supplement the fire brigade. The delay in a replacement person reporting to the scene of a fire would not have impacted the initial fire fighting effort, since enough fire brigade personnel were available to perform the functions.

Inspection Report# : 2008006 *(pdf)*

Significance: G Apr 18, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Plant Modification Blocked Access for Manual Firefighting.
A noncited violation of License Condition 2.C.(41), "Fire Protection Program," was identified related to making a plant change that negatively impacted the effectiveness of the approved Fire Protection Program. The team identified that the licensee had permanently blocked the door to the abandoned Unit 2 portion of the joint control room without performing a fire protection impact evaluation. The only remaining access path was a small hatch that would have made it difficult for fire fighters to gain access with protective clothing and equipment. A fire in this area could threaten operations in the Unit 1 control room if not promptly suppressed. This finding was determined to have a cross-cutting aspect in problem identification and resolution timeliness (P.1.d) because fire protection personnel recognized that a new access door was needed in 2006, but no substantial action had been taken to install it by the time of this inspection. This finding was entered in to the licensee's corrective action program under Condition Reports 2008-001893 and 2008-01913.
Blocking access to the Unit 2 control room area and not promptly restoring access to allow manual fire suppression was a performance deficiency. This finding was more than minor because it affected the protection against external factors (fire) attribute of the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events in order to prevent undesirable consequences. This finding was evaluated using Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," because it affected a fire protection defense-in-depth element. This finding was determined to have very low safety significance because all potential fire ignition sources in the affected area screened out in Task 2.3.4 in the Phase 2 evaluation. There were no ignition sources because the licensee had removed electrical power from this area, and administratively prevented hot work and storage of transient combustible material from this area.

Inspection Report# : 2008006 *(pdf)*

Significance: G Apr 18, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Ensure That Potential Damage to Motor-Operated Valve Circuits Would Not Prevent Safe Shutdown.
A noncited violation of 10 CFR Part 50, Appendix R, Section III.G.1.a was identified because the licensee failed to evaluate the impact of a potential motor operated valve failure mechanism on the ability to implement post-fire safe shutdown following a control room evacuation. The team identified that the Residual Heat Removal Pump Minimum Flow Valve F064A could be damaged by fire in the control room and not be available to perform its safe shutdown function. This finding involved mechanistic damage due to hot shorts as described in Information Notice 92-18, "Potential for Loss of Remote Shutdown Capability During Control Room Fire." The licensee had incorrectly interpreted this operating experience and concluded that no action was required. This finding was entered into the corrective action program under Condition Reports 1999-0236 and 2008-01904.
The team determined that failure to ensure that components necessary to safely shutdown the reactor would remain operable following a fire was a performance deficiency. This deficiency was more than minor because it impacted the Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to external events (fire) to prevent undesirable consequences. The Phase 3 risk evaluation performed by the senior reactor analyst determined this deficiency had very low safety significance because the probability of having a fire in either of the two control room panels where the postulated damage could occur and lead to a control room evacuation was very low.

Inspection Report# : 2008006 *(pdf)*

Significance: G Mar 22, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Perform an Adequate Inspection of Probable Maximum Precipitation (PMP) Door Seals Protecting Safety Related Equipment.
The inspectors identified a Green 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. The inspectors identified that the door seals did not make contact with the door frame and the door had a significant amount of corrosion underneath the door seals, indicating long term degradation. The extent of condition review found three additional door seals with degraded conditions, including doors to the standby service water pump houses. 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 Reports CR-GGN-2008-01123 and 2008-01623.
This finding was more than minor because the door seals represent a degrading condition that if left uncorrected could become a more significant safety concern. The inspectors determined this finding affected the mitigating systems cornerstone. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheet, this finding was determined to have very low safety significance since it did not represent an actual loss of safety function for the standby service water pumps or the diesel generators. The cause of this finding has a crosscutting aspect in the area of problem identification and resolution in that the licensee failed to properly identify the degraded conditions of the probable maximum precipitation door seals during their surveillance inspection. [P.1(a)] (Section 1R01)

Inspection Report# : 2008002 *(pdf)*

Significance: G Mar 22, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Implement an Adequate Compensatory Fire Watch per Station Fire Protection Procedures.
The inspectors identified a noncited violation of Facility Operating License Condition 2.C.41 for the failure to properly implement a compensatory fire watch per the station fire protection program. The inspectors performed a fire inspection of the auxiliary building electrical penetration room. The inspectors noted that plant personnel had not entered the room to perform a required fire watch. The inspectors questioned security personnel, reviewed the fire watch log and determined that the fire watch log had been checked off as completed. The completion time corresponded to the time the inspector was in the room. After further review and interviews with security personnel, the inspectors determined that the plant employee designated to perform the fire watch duties misunderstood the requirements for the fire watch. The employee had only verified the auxiliary building hallway area outside the room and failed to check inside the auxiliary building electrical penetration room as required. This issue was entered into the licensee's corrective action program as Condition Report CR-GGN-2008-00869.
The finding was more than minor since it was associated with the protection against external factors attribute of the reactor safety mitigating systems cornerstone, and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," the inspectors determined that the finding had an adverse affect on the "Fixed Fire Protection Systems" element of fire watches posted as a compensatory measure for outages or degradations. The inspectors assigned a high degradation rating due to the fact that automatic fire suppression system was tagged out and inoperable. Because the system was degraded without compensatory actions for approximately 2 hours, the inspectors used a duration factor of 0.01. The inspectors used 2E-2 for a generic fire frequency area which corresponds to Table 1.4.2, "Generic Fire Area Fire Frequencies" for a switchgear room. The resulting calculated change in core damage frequency was 2E-4, which was greater than the high degradation Phase 1 Quantitative Screening Criteria of 1E-6, requiring a Phase 2 analysis. The inspectors consulted with a regional Senior Reactor Analyst and a simplified Phase 3 was performed using a duration factor of 2.3E-4 for the 2-hour time period, and the IPEEE specific room fire frequency of 7.2E-4. The resulting calculated change in core damage frequency was 1.7E-7, which would be less that the Phase 1 quantitative screening criteria. Using this information, the regional Senior Reactor Analyst, determined the finding to be of very low safety significance. The cause of this finding has a crosscutting aspect in the area of human performance associated with work practices in that the individual assigned to perform the fire watch proceeded in the face of uncertainty and failed to use appropriate human error prevention techniques. [H.4(a)] (Section 1R05)

Inspection Report# : 2008002 *(pdf)*

Significance: G Mar 22, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure of Licensed Senior Reactor Operators to Maintain the Required Proficiency to Maintain Their License Current.
The inspectors identified a noncited violation of 10 CFR 55.53.e, "Conditions of License," for failure of licensed senior reactor operators to maintain the required proficiency to maintain their license current. Senior reactor operators standing the shift supervisor/shift technical advisor position were taking credit for senior reactor operator proficiency watches while standing this position. The normal shift complement of senior reactor operators consist of a shift manager, a control room supervisor, and a shift supervisor/shift technical advisor. When this issue was brought to the attention of operations management; they stopped the practice of the shift supervisor/shift technical advisor receiving senior reactor operator proficiency watch credit for standing that position. All shift supervisor/shift technical advisor senior reactor operators were inactivated. The plant issued a standing order that prohibited the shift supervisor/shift technical advisor to be allowed to perform the

senior reactor operators oversight function in the control room and the shift manager or control room supervisor had to be in the control room at all times. This issue was entered into the licensee's corrective action program as Condition Report CR-GGN-2008-01126.
This finding was more than minor because if left uncorrected the finding could become a more significant safety concern. This finding affects the mitigating system cornerstone. The finding was determined to be of very low safety significance using the Licensed Operator Requalification Significance Determination Process since it related to operator license conditions and more than 20 percent of the affected individuals were deficient (Section 1R11).

Inspection Report# : 2008002 *(pdf)*

Significance: G Mar 22, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Perform a Required Technical Specification Surveillance.
The inspectors identified a noncited violation of Technical Specifications 3.8.1, "AC Sources-Operating," for the failure to perform a required surveillance following the loss of a required offsite power source. The plant suffered a loss of power from the Port Gibson 115 kV line during high winds. Due to the fact that there is no direct control room alarm to alert the operating crew, they were not immediately aware they had lost the offsite source of power. When the crew recognized the loss of the bus they only entered a potential limiting condition of operations, due to the crew failing to realize that this was one of the required offsite sources. This issue was entered into the licensee's corrective action program as Condition Reports CR-GGN-2008-00737 and 2008-01202.
This finding was more than minor because it impacts the mitigating system cornerstone objective in that it affects the operability, availability, reliability of an offsite power source that supplies a bus that provides power to mitigating systems. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheet, this finding was of very low safety significance since it did not represent an actual loss of a safety function. The cause of this finding has a crosscutting aspect in the area of human performance associated with the resources attribute in that the operators did not have adequate procedural guidance to determine the loss of safety-related offsite power supply. [H.2(c)] (Section 1R22)

Inspection Report# : 2008002 *(pdf)*

Significance: G Mar 22, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Evaluate Cracks in Standby Service Water Pump House Structure.
The inspectors identified a Green noncited violation of 10 CFR 50 Appendix B, Criterion XVI, for failing to implement effective corrective actions after identifying concrete cracking in the standby service water pump houses. The inspectors determined that the program that evaluates, monitors, and repairs cracks for all safety related structures only identified a single crack for the entire site and does not track other structural cracks previously identified in the corrective action program. The last program inspection had been performed as recently as October 25, 2007, and only identified the single crack that had been documented in previous inspections. This issue was entered into the licensee's corrective action program as Condition Report CR-GGN-2007-05824.
This finding was more than minor because the cracks represent a degrading condition that if left uncorrected could become more significant safety concern. The inspectors determined this finding affected the mitigating systems cornerstone. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheet, this finding was of very low safety significance since it did not represent an actual loss of a safety function. The cause of this finding has a crosscutting aspect in the area of human performance associated with work practices because the licensee personnel failed to properly maintain and utilize the program for evaluating, tracking and repairing identified concrete cracks in safety related structures. [H.4(b)] (Section 4OA2)

Inspection Report# : 2008002 *(pdf)*

Significance: G Dec 31, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Venting Procedure for the Reactor Core Isolation Cooling System
The inspectors identified a noncited violation of Criterion V, "Instructions, Procedures, and Drawings," of 10 CFR Part 50, Appendix B for the failure to demonstrate compliance with Technical Specification Surveillance Requirement 3.5.3.1 due to an inadequate surveillance procedure. The reactor core isolation cooling system is vented at the injection valve through a hard-piped drain with no visual means of detecting air in the system. The inspectors determined that the procedure failed to contain adequate acceptance criteria to qualitatively or quantitatively assess abnormal amounts of air in the reactor core isolation cooling system. The licensee entered this issue into their corrective action program as Condition Report CR-GGN-2007-03818.
The finding was greater 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 the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheet, the finding was determined to have a very low safety significance in that it did not result in the actual loss of the reactor core isolation cooling system, and was not potentially risk-significant due to external initiating events.
Inspection Report# : 2007005 *(pdf)*

Significance: G Dec 30, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to perform a root cause analysis for RHR heat exchanger B fouling, and implement corrective action to prevent recurrence
A noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, was identified for failure to perform an adequate cause analysis for fouling of the Residual Heat Removal Heat Exchanger B on the standby service water side, and implement corrective action to prevent recurrence. This fouling reduced the thermal performance margin to 0.6 percent, but was not treated as a significant condition adverse to quality within the corrective action program. The licensee chose to temporarily restore margin by increasing the flow rate, but this did not remove or stop the fouling from continuing to occur. This finding has cross cutting aspects in the decision-making area of Human Performance (H.1.b) because the licensee's decision-making in response to this degraded condition did not use conservative criteria in deciding when to clean this heat exchanger, and did not verify that the underlying assumptions remained valid.
Failure to treat Residual Heat Removal Heat Exchanger B degradation as a significant condition adverse to quality, and perform an adequate cause analysis, and implement corrective action to prevent recurrence was a performance deficiency. This was more than minor because, if left uncorrected, it could lead to a more significant safety concern in that the system could become fouled enough to prevent removing the required heat load without the licensee recognizing this condition. This finding affected the Mitigating Systems and Barrier Integrity Cornerstones, since this component was required for both decay heat removal and containment heat removal functions. In accordance with the Phase 1 Significance Determination Process instructions, the significance was assessed using the Mitigating Systems Cornerstone, since this represented the dominant risk. This finding was determined to have very low safety significance (Green) during a Phase 1 Significance Determination Process, since it was confirmed to not involve loss of the design heat removal capability. This issue was entered into the licensee's corrective action program under Condition Report 2007-5766. (Section 4OA2.e.1(b)(1))

Inspection Report# : 2007008 *(pdf)*

Significance: G Dec 30, 2007
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate thermal performance testing of the residual heat removal heat exchangers
A noncited violation of 10 CFR 50, Appendix B, Criterion XI, "Test Control," was identified because the licensee's thermal performance test procedures for the residual heat removal heat exchangers were inadequate to ensure the quality of the test results. Specifically, the test procedure failed to specify adequate prerequisites for minimum heat load and use of high-accuracy instrumentation. This resulted in test results used to meet commitments for the Generic Letter 89-13 test program which provided little useful information due to high inaccuracy. Failure to adequately test and trend the thermal performance of the residual heat removal heat exchangers was a performance deficiency because it masked the actual thermal performance to the point where the licensee did not recognize the onset of fouling. The team determined that these heat exchangers began to experience fouling between 1997 and 1998, but this was not recognized. In the case of Residual Heat Removal Heat Exchanger B, the degraded performance was determined to be sufficient to make the fouling factor exceed the design value, necessitating compensatory action to be able to show continued operability. This was more than minor because, if left uncorrected, it could lead to a more significant safety concern in that the system could become fouled enough to prevent removing the required heat load without the licensee recognizing this condition. This finding affected the Mitigating Systems and Barrier Integrity Cornerstones, since this component was required for both decay heat removal and containment heat removal functions. In accordance with the Phase 1 SDP instructions, the significance was assessed using the Mitigating Systems Cornerstone, since this represented the dominant risk. This finding was determined to have very low safety significance (Green) during a Phase 1 Significance Determination Process, since it was confirmed to not involve loss of the design heat removal capability. This issue was entered into the licensee's corrective action program under Condition Report 2008-0412. (Section 1R07)

Inspection Report# : 2007008 *(pdf)*

Barrier Integrity

Significance: G Jun 21, 2008
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Procedures Causing a Loss of Decay Heat Removal to the Spent Fuel Pool.
The inspectors identified a Green noncited violation of Technical Specification 5.4.1(a) involving the failure of operators to follow a safety-related off normal event procedure resulting in a loss of decay heat removal to the spent fuel pool. The operators elected to remove cooling to the fuel pool cooling heat exchangers to minimize the temperature rise on the component cooling water system during a partial loss of the plant service water system. This action was not specified in the off-normal event procedure. The off-normal event procedure only permitted the isolation of component cooling water flow to the fuel pool cooling heat exchangers for degraded component cooling water flow or pressure. This resulted in the spent fuel pool losing decay heat removal for approximately 3 hours and 22 minutes. The licensee entered this issue in their corrective action program as Condition Report CR-GGN-2008-02147.
The finding is more than minor since it affects the human performance attribute of the barrier integrity cornerstone and 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,” Phase 1 Worksheet, inspectors determined that the finding has very low safety significance (Green) since it did not preclude operators from restoring spent fuel pool cooling to ensure the Fuel Barrier Cornerstone. The cause of this finding has a crosscutting aspect in the area of human performance associated with decision making in that operators did not use a systematic decision making process when faced with unexpected plant conditions [H.1(a)].

Inspection Report# : 2008003 *(pdf)*

Significance: G Mar 22, 2008
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Inadequate Design Control of HPCS Minimum Flow Valve Motor-Operated Valve Over Current Setpoint.
The inspectors identified a self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for failure to properly set the over current trip setpoint for the high pressure core spray minimum flow motor operated valve. This resulted in a spurious over current trip of the valve breaker during a high pressure core spray momentary pump start for breaker operability following post Division 3 emergency core cooling system testing. As a result of the trip, the high pressure core spray minimum flow valve failed open. This issue was entered into the licensee’s corrective action program as Condition Report CR-GGN-2008-01201.
The finding was more than minor because it was associated with the barrier integrity cornerstone to provide reasonable assurance that the physical design barriers protect the public from radionuclide releases caused by accidents or events. Using the MC 0609, "Significance Determination Process," Phase 1 worksheet, the finding was determined to have very low safety significance since it did not result in a loss of the containment barrier. Additionally, the issue was screened and determined to not impact the High Pressure Core Spray mitigating system function. (Section 4OA3)

Inspection Report# : 2008002 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Significance: G Dec 31, 2007
Identified By: NRC
Item Type: FIN Finding
Inadequate Procedure
The inspectors reviewed a self-revealing noncited violation of Technical Specification 5.4.1.a for the failure to provide a detailed work order package to perform vent and fill operations on a pressure transmitter. Specifically, the licensee did not provide appropriate instructions in a work order package to properly isolate pressure Transmitter 1N64N006B prior to opening the drain valve. Consequently, this resulted in the release of radioactive gas from the system and an unplanned and unintended exposure for two individuals involved in the work activity.
The finding is more than minor because it is associated with the occupational radiation safety attribute of program and process and affected the cornerstone objective because it involved unplanned and unintended dose to two workers. Using the Occupational Radiation Safety Significance Determination Process, the inspectors determined that the finding was of very low safety significance because: it did not involve: (1) as low as reasonably achievable planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. In addition, this finding has a cross-cutting aspect in the area of work control associated with work planning because the licensee failed to properly plan work activities by incorporating specific plant system details into the work order to allow the instrumentation and control technicians to properly drain a pressure transmitter [H.3(a)] (Section 2OS2).
Inspection Report# : 2007005 *(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

Significance: N/A Dec 30, 2007
Identified By: NRC
Item Type: FIN Finding
Identification and resolution of problems
The inspectors reviewed approximately 200 condition reports, work orders, associated root and apparent cause evaluations, and other supporting documentation to assess problem identification and resolution activities. The team concluded that the licensee was generally effective in identifying, evaluating, and correcting problems. Corrective actions, when specified, were generally implemented in a timely manner, although the team identified a significant number of longstanding equipment problems that were not being resolved in a timely manner. The team concluded that the licensee continued to have problems with the quality of operability assessments, and this was not being effectively addressed. The licensee performed quality higher-tier self-assessments, but the overall effectiveness was reduced by being slow to implement recommended improvements. The team concluded that the licensee was making progress in their efforts to address a trend in human performance, but this has not yet been completely effective. On the basis of 32 interviews conducted during this inspection, workers at the site felt free to report problems to their management, and were willing to use the corrective action program. An increased awareness and confidence in the Employee Concerns Program was also apparent. The team concluded that a positive safety-conscious work environment exists at Grand Gulf Nuclear Station.
Inspection Report# : 2007008 *(pdf)*

Last modified : November 26, 2008