UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 EAST LAMAR BLVD
ARLINGTON, TEXAS 76011-4511

February 11, 2013

Kevin Mulligan
Vice President Operations
Entergy Operations, Inc.
Grand Gulf Nuclear Station
P.O. Box 756
Port Gibson, MS 39150

SUBJECT: GRAND GULF NUCLEAR STATION - NRC INTEGRATED INSPECTION REPORT NUMBER 05000416/2012005

Dear Mr. Mulligan:

On December 31, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Grand Gulf Nuclear Station, Unit 1. The enclosed inspection report documents the inspection results which were discussed on January 17, 2013, with you and other members of your staff.

The inspections examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Four NRC identified and three self-revealing findings of very low safety significance (Green) were identified during this inspection. Six of these findings were determined to involve violations of NRC requirements. Further, a licensee-identified violation, which was determined to be of very low safety significance is listed in this report. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest these non-cited violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region IV; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at Grand Gulf Nuclear Station.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region IV; and the NRC Resident Inspector at Grand Gulf Nuclear Station.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of

NRC's Agencywide Document Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

David Proulx, Acting Branch Chief
Project Branch C
Division of Reactor Projects

Docket No.: 50-416
License No: NPF-29

Enclosure: Inspection Report 05000416/2012005

w/ Attachments 1: Supplemental Information
2: Request for Information for ALARA Planning & Controls Inspection

cc w/ encl: Electronic Distribution for Grand Gulf Nuclear Station

DISTRIBUTION:

Regional Administrator (Elmo.Collins@nrc.gov)
Acting Deputy Regional Administrator (Steven.Reynolds@nrc.gov)
DRP Director (Kriss.Kennedy@nrc.gov)
Acting DRP Deputy Director (Michael.Scott@nrc.gov)
Acting DRS Director (Tom.Blount@nrc.gov)
Acting DRS Deputy Director (Jeff.Clark@nrc.gov)
Senior Resident Inspector (Rich.Smith@nrc.gov)
Resident Inspector (Blake.Rice@nrc.gov)
Acting Branch Chief, DRP/C (David.Proulx@nrc.gov
Senior Project Engineer, DRP/C (Bob.Hagar@nrc.gov)
Project Engineer, DRP/C (Rayomand.Kumana@nrc.gov)
GG Administrative Assistant (Alley.Farrell@nrc.gov)
Public Affairs Officer (Victor.Dricks@nrc.gov)
Public Affairs Officer (Lara.Uselding@nrc.gov)
Project Manager (Alan.Wang@nrc.gov)
Branch Chief, DRS/TSB (Ray.Kellar@nrc.gov)
TSB Assistant (Loretta.Williams@nrc.gov)
RITS Coordinator (Marisa.Herrera@nrc.gov)
Regional Counsel (Karla.Fuller@nrc.gov)
Congressional Affairs Officer (Jenny.Weil@nrc.gov)
OEMail Resource
RIV/ETA: OEDO (John.Cassidy@nrc.gov)
Regional State Liaison Officer (Bill.Maier@nrc.gov)
NSIR/DPR/EP (Eric.Schrader@nrc.gov)

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REGION IV

Docket:	05000416
License:	NPF-29
Report:	05000416/2012005
Licensee:	Entergy Operations, Inc.
Facility:	Grand Gulf Nuclear Station, Unit 1
Location:	7003 Baldhill Road Port Gibson, MS 39150
Dates:	September 22 through December 31, 2012
Inspectors:	R. Smith, Senior Resident Inspector B. Rice, Resident Inspector S. Achen, Reactor Inspector NSPDP L. Carson II, Senior Health Physicist G. George, Senior Reactor Inspector R. Kumana, Project Engineer S. Makor, Reactor Inspector J. Laughlin, Emergency Preparedness Inspector, NSIR N. Okonkwo, Reactor Inspector
Approved By:	David Proulx, Acting Chief Reactor Projects Branch C Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000416/2012005; 09/22/2012 – 12/31/2012; GRAND GULF NUCLEAR STATION, UNIT 1, Integrated Resident and Regional Report; Maintenance Effectiveness, Refueling and Other Outage Activities, Occupational ALARA Planning and Controls, and Followup of Events and Notices of Enforcement Discretion.

The report covered a 3-month period of inspection by resident inspectors and an announced baseline inspections by region-based inspectors. Six Green non-cited violations and one Green finding of significance were identified. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter 0609, "Significance Determination Process." The cross-cutting aspect is determined using Inspection Manual Chapter 0310, "Components Within the Cross-Cutting Areas." Findings for which the significance determination process does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified Findings and Self-Revealing Findings

Cornerstone: Initiating Events

- Green. The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," involving the licensee's failure to follow procedure EN-LI-118, "Root Cause Evaluation Process," Revision 18, in that they failed to evaluate the risk significances and develop action plans to address equipment identified during their extent-of-condition review for a post-scram root cause analysis. The licensee entered this issue into their corrective action program as Condition Report CR-GGN-2012-11950. The immediate corrective actions included assigning corrective actions for operations personnel to properly evaluate the risk significance of the identified components and perform appropriate corrective actions to correct the degraded conditions.

  The licensee's failure to properly determine risk significance and associated action plans to correct degraded equipment that could challenge safe plant operation is a performance deficiency. The performance deficiency is more than minor and is therefore a finding because if left uncorrected, it would have the potential to lead to a more significant safety concern. Specifically, the failure to take corrective actions to correct degraded equipment has the potential to lead to initiating events resulting in plant transients. Using NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," the inspectors determined that the issue affected the Initiating Events Cornerstone. In accordance with NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings at Power," the inspectors determined that the issue has very low safety significance (Green) because the finding did not cause a reactor trip or the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition.

The inspectors determined that the apparent cause of this finding was that when operations management directed operators to identify the degraded equipment, they did not encourage those operators to comply with Procedure EN-LI-118. Therefore, the finding has a cross-cutting aspect in the human performance area, work practices component because the licensee did not define and effectively communicate expectations regarding procedural compliance. [H.4(b)] (Section 4OA3).

Cornerstone: Mitigating Systems

- Green. The inspectors reviewed a self-revealing non-cited violation of 10 CFR 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” for the licensee’s failure to complete preventive maintenance tasks on the high pressure core spray division III diesel generator output breaker in accordance with the corresponding preventive maintenance task template. The licensee entered this issue in their corrective action program as Condition Report CR-GGN-2012-07992. The immediate corrective actions included replacing the failed control relay and restoring operability to the division III diesel generator. The long term corrective actions included revising breaker refurbishment/replacement procedure with directions to replace the control relay and change the procedure frequency to every 10 years versus every 12 years.

  The inspectors determined that this performance deficiency was more than minor and is therefore a finding because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, this failed control relay caused the subject breaker to fail to close during the division III diesel generator monthly surveillance on June 5, 2012. The inspectors used NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," to determine that the issue affected the Mitigating System Cornerstone. Because the finding pertained only to a degraded condition while the plant was shutdown, the inspectors used Manual Chapter 0609, Appendix G, “Shutdown Operations Significance Determination Process,” Checklist 8, “Cold Shutdown or Refueling Operation – Time to Boil > 2 Hours: RCS Level < 23’ Above Top of Flange,” to determine that the finding was of very low safety significance because it did not increase the likelihood of a loss of reactor coolant system inventory; did not degrade the licensee’s ability to terminate a leak path or add RCS inventory when needed; did not significantly degrade the licensee’s ability to recover decay heat removal if lost; and did not affect the safety/relief valves (Green). The inspectors determined that the cause of this finding was a latent issue that is not reflective of current performance, therefore no cross-cutting aspect was identified. (Section 1R20.b).

- Green. The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion III, “Design Control,” for the licensee’s failure to establish the gain

settings used on the power range neutron monitoring system in accordance with design requirements. The licensee entered this issue into their corrective action program as Condition Report CR-GGN-2013-00177. The immediate corrective actions included adjusting gain settings for their average power range monitor (APRM) instruments to indicate actual core thermal power as determined by the heat balance. In additioin, the licensee revised their neutron monitoring procedure to set the initial gains for the average power range monitor to the maximum value to maintain conservative power indication during future startups. They also changed their local power range monitor replacement procedure to use the vendor specified initial gain setting of 3.692 prior to startup.

The finding was more than minor because it affected the design control attribute of the Mitigating Systems Cornerstone and impacted the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the incorrect gain settings caused a violation of technical specification 3.0.4 by rendering the APRM Neutron Flux High – Setdown scram function and the Neutron Flux – Upscale, Startup control rod block function inoperable prior to entry into Mode 2. In accordance with NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," the inspectors determined that the issue affected the Mitigating Systems Cornerstone. In accordance with NRC Inspection Manual Chapter 0609, Appendix A, “The Significance Determination Process (SDP) for Findings at Power”, the inspectors determined that the issue had very low safety significance (Green) because although the finding affected a single reactor protection system trip signal to initiate a reactor scram, it did not affect the function of other redundant trips or diverse methods of reactor shutdown, did not involve control manipulations that unintentionally added positive reactivity, and did not result in a mismanagement of reactivity by operators. Because the performance deficiency occurred in the past and is not reflective of current licensee performance, this finding was not assigned a cross-cutting aspect. (Section 4OA3).

Cornerstone: Barrier Integrity

- Green. The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, “Corrective Action,” involving the failure to correct a condition adverse to quality in a timely manner. Specifically, the licensee failed to correct multiple degraded conditions associated with the auxiliary building water intrusion barrier. The licensee entered this issue into their corrective action program as Condition Report CR-GGN-2012-10314. Corrective actions included generating Work Order 318398 and delegating funds to repair the water intrusion barrier at the next available opportunity.

  The finding is more than minor because if left uncorrected, the condition of a degraded auxiliary building water intrusion barrier could lead to a more significant safety concern. Specifically, continued degradation of the water intrusion barrier could lead to the auxiliary building (secondary containment) being degraded such that the standby gas treatment system would not be able to achieve and maintain

the design negative pressure of ¼ inch water column within 120 seconds. Using Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," the inspectors determined that the finding affected the Barrier Integrity Cornerstone. In accordance with Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings at Power," the inspectors determined that the finding had very low safety significance (Green) because the finding only represents a degradation of the radiological barrier function provided for the auxiliary building and standby gas treatment system. The inspectors determined that the apparent cause of this finding was that the licensee had failed to classify the degraded water intrusion barrier as a condition adverse to quality that warranted correction in a timely manner. Therefore, the finding has a cross-cutting aspect in the problem identification and resolution area, corrective action program component because the licensee failed to properly classify conditions adverse to quality [P.1(c)](Section 1R12).

- Green. The inspectors identified a non-cited violation of 10 CFR 50.65(a)(2), for the failure to monitor the performance of the auxiliary building water intrusion barrier. The licensee entered this issue into their corrective action program as Condition Report CR-GGN-2012-11740. Corrective actions included initiating Condition Report CR-GGN-2012-12286, in which the licensee concluded the degraded water intrusion barrier had experienced a Maintenance Rule Functional Failure and required further evaluation to determine if the barrier should be classified in 10 CFR 50.65 (a)(1).

  The finding is more than minor because if left uncorrected, the failure to monitor the performance of the auxiliary building water intrusion barrier in accordance with the maintenance rule program could lead to a more significant safety concern. Specifically, continued unmonitored degradation of the water intrusion barrier could compromise the integrity of the secondary containment function of the auxiliary building. Using Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," the inspectors determined that the finding affected the Barrier Integrity Cornerstone. In accordance with Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings at Power," the inspectors determined that the finding had a very low safety significance (Green) because the finding only represents a degradation of the radiological barrier function provided for the auxiliary building and standby gas treatment system. The inspectors determined that the apparent cause of this finding was the licensee failed to recognize that the auxiliary building water intrusion barrier was scoped into their Maintenance Rule program with the monitoring criteria of zero occurrences of water intrusion barrier degradation. Therefore, the finding had a cross-cutting aspect in the human performance area, work practices component because the licensee failed to follow maintenance rule program procedures [H.4(b)](Section 1R12).

Cornerstone: Occupational Radiation Safety

- Green. The inspector reviewed a self-revealing finding of very low safety significance because during the refueling outage 18 extended power upgrade, the licensee did not adequately plan and control work activities for the design and replacement of the new fuel pool cooling heat exchangers. Specifically, outage personnel did not perform adequate pre-outage walkdowns, which resulted in significant unplanned collective exposure. Actual collective dose and hours for Radiation Work Permit 2012-1086, "Fuel Pool Cooling & Cleanup Heat Exchanger Replacement," was 23.9 person-rem and 12,237 RWP-hours, respectively. This is compared to the initial planned estimate of 3.74 person-rem and 1,905 RWP-hours. This finding and procedural concern was entered into the corrective action program as Condition Reports CR-GGNS-2012-09011 and CR-GGNS-2012-12398.

  The failure to appropriately use ALARA planning and controls procedures to prevent unplanned and unintended collective doses was a performance deficiency. This performance deficiency was more than minor because it affected the Occupational Radiation Safety Cornerstone attribute of Program and Process in that the failure to adequately implement ALARA procedures caused the collective radiation dose for the job activity to exceed the planned dose by more than 50 percent. In addition, this type of issue is addressed in Example 6.j of IMC 0612, Appendix E, "Examples of Minor Issues." Using the Occupational Radiation Safety Significance Determination Process, the inspector determined this performance deficiency to be a finding of very low safety significance because although it involved ALARA planning and controls, the licensee's latest rolling three-year average does not exceed 240 person-rem. This finding has a cross-cutting aspect in the human performance area, work control component, because the licensee failed to evaluate the impact of work scope change on human performance and interdepartmental communication and coordination prior to commencing work activities. Specifically, there was inappropriate coordination and communication of work activities between work groups [H.3(b)](Section 2RS02).

- Green. The inspectors reviewed a self-revealing non-cited violation of Technical Specification 5.4.1 for failure to comply with radiological exposure controls specified in Radiation Work Permit 2012-1402, "Refuel Floor High Water Activities." Specifically, radiation exposure controls in the RWP required the licensee to verify that fuel pool cleanup (demineralizers) was in-service, and if dose rates increased by more than 0.2 millirem/hour, change the resins. During reactor cavity operations, both fuel pool demineralizer trains were inoperable at least 25 days. In addition, the dryer separator pool and reactor cavity were isolated from the fuel pool clean up system. Consequently, general area radiation levels on the reactor cavity floor increased from 0.4 millirem/hour to 6.0 millirem/hour. The actual collective dose and hours for the work activity was 8.24 person-rem and 9,000 RWP-hours, respectively. This is compared to the planned initial estimate of 4.60 person-rem and 6,987 RWP-hours. This

Radiation Work Permint and procedure violation was documented in the licensee's corrective action program as Condition Reports CR-GGNS-2012-04288 and CR-GGNS-2012-12401.

The licensee's failure to comply with the RWP to prevent unplanned and unintended collective doses was a performance deficiency. This performance deficiency was more than minor because it affected the Occupational Radiation Safety Cornerstone attribute of Program and Process in that the failure to adequately implement ALARA procedures caused the collective radiation dose for the job activity to exceed the planned dose by more than 50 percent. In addition, this type of issue is addressed in Example 6.i of IMC 0612, Appendix E, "Examples of Minor Issues." Using the Occupational Radiation Safety Significance Determination Process, the inspector determined this performance deficiency to be a non-cited violation of very low safety significance because although it involved ALARA planning and controls, the licensee's latest rolling three-year average does not exceed 240 person-rem. The violation involved a cross-cutting aspect in the human performance area, work control component, because the licensee did not appropriately coordinate work activities by incorporating actions to address the need for work groups to communicate and coordinate with each other during activities in which interdepartmental coordination was necessary to assure human performance [H.3(b)](Section 2RS02).

B. Licensee-Identified Violations

One violation of very low safety significance, which was identified by the licensee has been reviewed by the inspector. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and corrective action tracking number is listed in Section 4OA7.

REPORT DETAILS

Summary of Plant Status

Grand Gulf Nuclear Station (GGNS) began the inspection period at 100 percent rated thermal power.

- On October 21, 2012, the operators reduced power to approximately 87 percent rated thermal power for a planned control rod testing and returned to 100 percent rated thermal power the same day.

- On November 8, 2012, the operators reduced power to approximately 93 percent rated thermal power due to a moisture intrusion into the main lube oil and hydrogen seal oil systems that resulted in a clogging of the hydrogen seal oil filters and a procedurally required power reduction due to decrease in seal oil pressure. The licensee changed out the seal oil filters, de-watered the oil systems, and returned to 100 percent rated thermal power on November 9, 2012.

- On November 20, 2012, the operators reduced power to approximately 57 percent rated thermal power due to an oil leak on the B reactor feedwater pump. The licensee repaired the leak and returned to 100 percent rated thermal power on November 22, 2012.

- On December 8, 2012, the operators began to shutdown and cool down the plant to perform planned outage 19-01 to fix some long standing balance of plant issues, including air in leakage to the condenser and a failed open second stage moisture separator drain valve. The licensee commenced plant startup on December 14, 2012, and achieved 100 percent rated thermal power after final control rod pattern was achieved on December 21, 2012.

- On December 29, 2012, at 12:18 a.m., the reactor scrammed from 100 percent rated thermal power due to phase A unit differential signal resulting in a main generator /turbine trip with a reactor scram. The licensee determined the apparent cause of the scram and commenced startup activities on December 31, 2012.

The plant continued startup activities through the end of the quarter.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R04 Equipment Alignment (71111.04)

.1 Partial Walkdown

a. Inspection Scope

The inspectors performed partial system walkdowns of the following risk-significant systems:

- Division I diesel generator during division II allowed outage time
- Division I standby service water during division II allowed outage time

The inspectors selected these systems based on their risk significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could affect the function of the system, and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, Updated Final Safety Analysis Report, technical specification requirements, administrative technical specifications, outstanding work orders, condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems incapable of performing their intended functions. The inspectors also inspected accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the corrective action program with the appropriate significance characterization. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of two partial system walkdown samples as defined in Inspection Procedure 71111.04-05.

b. Findings

No findings were identified.

.2 Complete Walkdown

a. Inspection Scope

On October 28, 2012, the inspectors performed a complete system alignment inspection of the residual heat removal system to verify the functional capability of the system. The inspectors selected this system because it was considered both safety significant and risk significant in the licensee's probabilistic risk assessment. The inspectors inspected the system to review mechanical and electrical equipment line ups, electrical power availability, system pressure and temperature indications, as appropriate, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. The inspectors reviewed a sample of past and outstanding work orders to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the corrective action program database to ensure that system equipment-alignment problems were being identified and appropriately resolved. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one complete system walkdown sample as defined in Inspection Procedure 71111.04-05.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Fire Inspection Tours

a. Inspection Scope

The inspectors conducted fire protection walkdowns that were focused on availability, accessibility, and the condition of firefighting equipment in the following risk-significant plant areas:

- Upper control room
- Division I diesel generator room
- Division I standby service water pump and valve rooms
- Reactor core isolation cooling pump room

The inspectors reviewed areas to assess if licensee personnel had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant; effectively maintained fire detection and suppression capability; maintained passive fire protection features in good material condition; and had implemented

adequate compensatory measures for out of service, degraded or inoperable fire protection equipment, systems, or features, in accordance with the licensee's fire plan. The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the plant's Individual Plant Examination of External Events with later additional insights, their potential to affect equipment that could initiate or mitigate a plant transient, or their impact on the plant's ability to respond to a security event. Using the documents listed in the attachment, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed; that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's corrective action program. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of four quarterly fire-protection inspection samples as defined in Inspection Procedure 71111.05-05.

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors reviewed the updated safety analysis report, the flooding analysis, and plant procedures to assess susceptibilities involving internal flooding. Additionally, the inspectors verified that operator actions for coping with internal flooding can reasonably achieve the desired outcomes. The inspectors also inspected the areas listed below to verify the adequacy of equipment seals located below the flood line, floor and wall penetration seals, watertight door seals, common drain lines and sumps, sump pumps, level alarms, and control circuits, and temporary or removable flood barriers. Specific documents reviewed during this inspection are listed in the attachment.

- November 14-15, 2012, Turbine Building, elevations 93'-0", 111'-0"; Auxiliary Building, elevation 103'-0"; Control Building, elevation 93'-0". Inspection of Unresolved Item 05000416/2012008-07, "Potential Internal Flooding Caused by Circulation Water System Failure."

These activities constitute completion of one flood protection measures inspection sample as defined in Inspection Procedure 71111.06-05.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program and Licensed Operator Performance (71111.11)

.1 Quarterly Review of Licensed Operator Requalification Program

a. Inspection Scope

On October 15, 2012, the inspectors observed a crew of licensed operators in the plant's simulator during a requalification as found evaluation. The inspectors assessed the following areas:

- Licensed operator performance
- The ability of the licensee to administer the evaluations
- The modeling and performance of the control room simulator
- The quality of post-scenario critiques
- Follow-up actions taken by the licensee for identified discrepancies

These activities constitute completion of one quarterly licensed operator requalification program sample as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

.2 Quarterly Observation of Licensed Operator Performance

a. Inspection Scope

On November 20, 2012, the inspectors observed the performance of on-shift licensed operators in the plant's main control room. At the time of the observations, the plant was in a period of heightened activity due to an unplanned downpower from 100 percent to 57 percent for an emergent repair of an oil leak on the B reactor feedwater pump. The inspectors observed the operators' performance of the following activities:

- Pre-job brief
- Reactivity management brief
- Power reduction via recirculation pump flow reduction
- Power reduction via control rod manipulations

In addition, the inspectors assessed the operators' adherence to plant procedures, including EN-OP-115, Revision 12, "Conduct of Operations," and other operations department policies.

As part of this inspection activity, the inspectors also observed the operator's use of the power-to-flow map and the operator's awareness of the plant's location on the power-to-flow map to ensure that the plant was operated within the analyzed region. The inspector also independently verified that the plant was operated within the analyzed region of the power-to-flow map as the power was being reduced from 100 percent to 57 percent. This inspection activity constitutes the completion of one Operating Experience Smart Sample (OpESS) FY2007-004, "BWR Core Power/ Flow Map - Supplemental Inspection Guidance for MC 2515D."

These activities constitute completion of one quarterly licensed-operator performance sample as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors evaluated degraded performance issues involving the following risk significant systems:

- Auxiliary building (T10)
- Residual heat removal system (E12)
- Suppression pool makeup system (E30)

The inspectors reviewed events such as where ineffective equipment maintenance has resulted in valid or invalid automatic actuations of engineered safeguards systems and independently verified the licensee's actions to address system performance or condition problems in terms of the following:

- Implementing appropriate work practices
- Identifying and addressing common cause failures
- Scoping of systems in accordance with 10 CFR 50.65(b)
- Characterizing system reliability issues for performance
- Charging unavailability for performance

- Trending key parameters for condition monitoring
- Ensuring proper classification in accordance with 10 CFR 50.65(a)(1) or -(a)(2)
- Verifying appropriate performance criteria for structures, systems, and components classified as having an adequate demonstration of performance through preventive maintenance, as described in 10 CFR 50.65(a)(2), or as requiring the establishment of appropriate and adequate goals and corrective actions for systems classified as not having adequate performance, as described in 10 CFR 50.65(a)(1)

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the corrective action program with the appropriate significance characterization. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of three quarterly maintenance effectiveness samples as defined in Inspection Procedure 71111.12-05.

b. Findings

(1) Failure to Make Timely Corrective Actions to Repair the Degraded Auxiliary Building Water Intrusion Barrier

Introduction. The inspectors identified a Green non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," involving the failure to promptly correct a condition adverse to quality. Specifically, the auxiliary building water-intrusion barrier has been in a degraded condition since April 2004.

Description. The seismic category 1 containment structures incorporated into the design of Grand Gulf Nuclear Station are the containment building (primary containment), auxiliary building (secondary containment), and enclosure building. The auxiliary building completely encircles the containment building from base mat to mid height and houses normal and safety related equipment. The auxiliary building, in conjunction with the standby gas treatment system, is designed to limit the thyroid dose and whole body dose to within the guidelines of 10 CFR Part 100 by reaching and maintaining a negative pressure of ¼ inch water column within 120 seconds. The enclosure building is a limited leakage, steel framed, seismic category 1 structure that completely encloses the portions of the containment building above the auxiliary building roof levels and is designed to limit the leakage of radioactive material into the environment during a loss of coolant accident. To maintain the required leakage limits, a water intrusion barrier, in the form of a flexible seal, is provided around the entire periphery of the enclosure/auxiliary building interface. The occurrence of water intrusion into the auxiliary building is evidence that the water intrusion barrier is degraded. Although the standby gas treatment system has passed its surveillance requirements of achieving and

maintaining the designed negative pressure, continued degradation of the flexible seal could challenge the standby gas treatment system's ability to meet its surveillance requirements.

On October 1, 2012, the inspectors reviewed Condition Report CR-GGN-2012-10314, which described water leaking into the auxiliary building following a heavy rain storm. The inspectors performed a detailed historical review of water intrusion into the auxiliary building and found 18 condition reports had been written between April 2004 and August 2012 identifying occurrences of water leaking into the auxiliary building. The inspectors also found that the majority of the condition reports written were closed to Work Order 60875, which has been in the "Plan" status since 2005.

The licensee entered this issue in their corrective action program as Condition Report CR-GGN-2012-10314. Corrective actions included generating Work Order 318398 and delegating funds to repair the water intrusion barrier at the next available opportunity.

Analysis. The failure to promptly correct a condition adverse to quality is a performance deficiency. The inspectors used Inspection Manual Chapter 0612, Appendix B, to determine that the finding is more than minor because if left uncorrected, the condition of a degraded auxiliary building water intrusion barrier could lead to a more significant safety concern. Specifically, continued degradation of the water intrusion barrier could lead to the auxiliary building (secondary containment) being degraded in that the standby gas treatment system would not be able to achieve and maintain the design negative pressure of ¼ inch water column within 120 seconds. Using Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," the inspectors determined that the finding affected the Barrier Integrity Cornerstone. In accordance with Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings at Power," the inspectors determined that the finding had very low safety significance (Green) because the finding only represents a degradation of the radiological barrier function provided for the auxiliary building and standby gas treatment system. The inspectors determined that the apparent cause of this finding was the licensee had failed to classify the degraded water intrusion barrier as a condition adverse to quality that warranted prompt correction. Therefore, the finding had a cross-cutting aspect in the problem identification and resolution area, corrective action program component because the licensee failed to properly classify conditions adverse to quality [P.1(c)].

Enforcement. 10 CFR 50, Appendix B, Criterion 16, "Corrective Action," states in part, measures shall be established to assure that conditions adverse to quality, are promptly identified and corrected. Contrary to the above, measures establish by the licensee did not assure that conditions adverse to quality, were promptly identified and corrected. Specifically, the licensee initiated 18 condition reports from April 2004 through August 2012 identifying auxiliary building water intrusion barrier degradation as evidenced by water in-leakage and failed to implement corrective actions to address the degraded barrier. As an immediate corrective action, the licensee generated Work Order 318398 and delegated funds to repair the water-intrusion barrier at the next available opportunity. This violation is being treated as a non-cited violation (NCV), consistent

with Section 2.3.2 of the Enforcement Policy because it was of very low safety significance (Green) and it was entered into the licensee's corrective action program as CR-GGN-2012-10314 to address recurrence: NCV 05000416/2012005-01, "Failure to Make Timely Corrective Actions to Repair the Degraded Auxiliary Building Water Intrusion Barrier."

(2) Failure to Adequately Monitor the Condition of the Auxiliary Building Water Intrusion Barrier

Introduction. The inspectors identified a Green non-cited violation of 10 CFR 50.65(a)(1), involving the failure to adequately monitor the performance of the auxiliary building water intrusion barrier.

Description. On October 1, 2012, the inspectors reviewed Condition Report CR-GGN-2012-10323, which described water leaking into the auxiliary building following a heavy rain storm. During the review, the inspectors determined the auxiliary building roof system, which includes a water intrusion barrier, was scoped in the licensee's maintenance rule program with the monitoring criteria of zero occurrences of water intrusion barrier degradation. The inspectors performed a detailed historical review of water intrusion into the auxiliary building and found 18 condition reports had been written between April 2004 and August 2012 identifying the occurrence of auxiliary building water intrusion barrier degradation as evidenced by water leaking into the auxiliary building. The inspectors also found that the licensee had not performed any evaluation of the water-intrusion barrier against the monitoring criteria established in the licensee's maintenance rule program.

When the inspectors brought this concern to the licensee's attention, the licensee entered this issue in their corrective action program as Condition Report CR-GGN-2012-11740. Corrective actions included initiating Condition Report CR-GGN-2012-12286, in which the licensee concluded the degraded water-intrusion barrier was a Maintenance Rule Functional Failure and required further evaluation to determine if the barrier should be classified a(1).

Analysis. The failure to monitor the performance of the auxiliary building water intrusion barrier in accordance with the maintenance rule program is a performance deficiency. The inspectors used Inspection Manual Chapter 0612, Appendix B, to determine that the finding is more than minor because if left uncorrected, the failure to monitor the performance of the auxiliary building water intrusion barrier in accordance with the maintenance rule program could lead to a more significant safety concern. Specifically, continued unmonitored degradation of the water intrusion barrier could compromise the integrity of the secondary containment function of the auxiliary building. Using Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," the inspectors determined that the finding affected the Barrier Integrity Cornerstone. In accordance with Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process (SDP) for Findings at Power," the inspectors determined that the finding had a very low safety significance (Green) because the finding only represents a degradation of the radiological barrier function provided for the auxiliary building and

standby gas treatment system. The inspectors determined that the apparent cause of this finding was the licensee had failed to recognize that the auxiliary building water intrusion barrier was scoped into their Maintenance Rule program with the monitoring criteria of zero occurrences of water intrusion barrier degradation. Therefore, the finding had a cross-cutting aspect in the human performance area, work practices component because the licensee did not follow maintenance rule program procedures [H.4(b)].

Enforcement. 10 CFR 50.65 (a)(1), requires, in part, that the holders of an operating license shall monitor the performance or condition of structures, within the scope of the rule as defined by 10 CFR 50.65 (b), against licensee-established goals, in a manner sufficient to provide reasonable assurance that such structures are capable of fulfilling their intended functions. 10 CFR 50.65 (a)(2) states, in part, that monitoring as specified in 10 CFR 50.65 (a)(1) is not required where it has been demonstrated that the performance or condition of an SSC is being effectively controlled through the performance of appropriate preventive maintenance, such that the SSC remains capable of performing its intended function.

Contrary to the above, the licensee did not monitor the performance or condition of a structure within the scope of the rule as defined by 10 CFR 50.65 (b), against licensee-established goals, in a manner sufficient to provide reasonable assurance that the structure is capable of fulfilling its intended functions. Specifically, although the auxiliary building water-intrusion barrier is within the scope of the rule and the licensee had established a performance goal of zero water leakage for that barrier, between April, 2004, and August, 2012, the licensee documented 18 instances of water leakage through that barrier, but did not evaluate the barrier in accordance with their maintenance rule program. This violation is being treated as a non-cited violation (NCV), consistent with Section 2.3.2 of the Enforcement Policy because it was of very low safety significance (Green), and it was entered into the licensee's corrective action program as CR-GGN-2012-11740 to address recurrence: NCV 05000416/2012005-02, "Failure to Adequately Monitor the Condition of the Auxiliary Building Water Intrusion Barrier."

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)

a. Inspection Scope

The inspectors reviewed licensee personnel's evaluation and management of plant risk for the maintenance and emergent work activities affecting risk-significant and safety-related equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for work:

- Week of October 28, 2012, during the division II allowed outage time, resulting in the site being in an increased yellow risk profile during the outage

- Week of November 19, 2012, during the unplanned down power to repair an oil leak on the B reactor feedwater pump, resulting in the site being in a increased risk profile

- Week of December 9, 2012, during the planned outage PO-19-01, resulting in the licensee entering offline yellow risk for decay heat removal and containment control

The inspectors selected these activities based on potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified that licensee personnel performed risk assessments as required by 10 CFR 50.65(a)(4) and that the assessments were accurate and complete. When licensee personnel performed emergent work, the inspectors verified that the licensee personnel promptly assessed and managed plant risk. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed the technical specification requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of three maintenance risk assessments and emergent work control inspection samples as defined in Inspection Procedure 71111.13-05.

b. Findings

No findings were identified.

1R15 Operability Evaluations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed the following assessments:

- Division II diesel generator time delay relay failure (CR-GGN-2012-12133)
- Residual heat removal-fuel pool cooling assist suction valve over thrust (CR-GGN-2012-11755)
- Division II diesel generator jacket water tube wall thinning (CR-GGN-2012-12060)
- Non-conservative Tech Spec allowable values (CR-GGN-2012-09971)

The inspectors selected these operability and functionality assessments based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure technical specification operability was properly justified and to verify the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the

operability and design criteria in the appropriate sections of the technical specifications and Updated Final Safety Analysis Report to the licensee's evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. Additionally, the inspectors reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of four operability evaluations inspection samples as defined in Inspection Procedure 71111.15-05.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed the following post-maintenance activities to verify that procedures and test activities were adequate to ensure system operability and functional capability:

- Standby service water pump B following motor replacement
- Division II diesel generator following maintenance activities
- Residual heat removal pump B following maintenance activities
- Residual heat removal shutdown cooling suction valve E12-F006B and standby service water blow down valve P41-F016B following maintenance activities

The inspectors selected these activities based upon the structure, system, or component's ability to affect risk. The inspectors evaluated these activities for the following (as applicable):

- The effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed
- Acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate

The inspectors evaluated the activities against the technical specifications, the Updated Final Safety Analysis Report, 10 CFR 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the

inspectors reviewed corrective action documents associated with post-maintenance tests to determine whether the licensee was identifying problems and entering them in the corrective action program and that the problems were being corrected commensurate with their importance to safety. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of four post-maintenance testing inspection samples as defined in Inspection Procedure 71111.19-05.

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities (71111.20)

a. Inspection Scope

The inspectors reviewed the outage safety plan and contingency plans for the planned outage, started on December 8, 2012, to confirm that licensee personnel had appropriately considered risk, industry experience, and previous site-specific problems in developing and implementing a plan that assured maintenance of defense in depth. During the planned outage, the inspectors observed portions of the shutdown and cooldown processes and monitored licensee controls over the outage activities listed below.

- Configuration management, including maintenance of defense in depth, is commensurate with the outage safety plan for key safety functions and compliance with the applicable technical specifications when taking equipment out of service.
- Status and configuration of electrical systems to ensure that technical specifications and outage safety-plan requirements were met.
- Monitoring of decay heat removal processes, systems, and components.
- Verification that outage work was not impacting the ability of the operators to operate the spent fuel pool cooling system.
- Reactor water inventory controls, including flow paths, configurations, and alternative means for inventory addition, and controls to prevent inventory loss.
- Controls over activities that could affect reactivity.
- Maintenance of secondary containment as required by the technical specifications.
- Startup and ascension to full power operation.

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one other outage inspection sample as defined in Inspection Procedure 71111.20-05.

b. Findings

Introduction. The inspectors reviewed a self-revealing non-cited violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to complete preventive maintenance tasks on the high pressure core spray division III diesel generator output breaker in accordance with the corresponding preventive maintenance task template.

Description On June 5, 2012, the high pressure core spray division III diesel generator output breaker (152-1701) failed to close during a surveillance test. Troubleshooting revealed that the breaker had failed to close because of intermittent high resistance on the current relay contacts. Through the subsequent evaluation documented in Condition Report CR-GGN-2012-07922, the licensee determined that the apparent cause of the relay failure was age-related and/or cycle-related degradation due to a lack of an appropriate preventive-maintenance task for the relay. More specifically, although the licensee had set a recurring preventive-maintenance task to refurbish/replace the breaker (using preventive maintenance task PMRQ 50018212-02) every 12 ± 25% years, and had last completed that task in 1996 such that it was next due on November 2, 2008 (or November 2, 2011 with a 25% extension), the licensee did not complete that task when it was due. Instead, the licensee deferred that task until September, 2012.

To review the bases for the preventive maintenance tasks performed using PMRQ 50018212-02, the inspectors noted that Preventive Maintenance Basis Template, "EN-Switchgear-Medium Voltage – 1 KV to 7KV," Revision 3, discusses switch and relay contact failures and states, in part,

> "High contact resistance may develop over time although a trouble-free period of 10 years should be obtained under mild service conditions. Switch and relay contact failure may be avoided by measuring the contact resistance at the detailed inspection."

The inspectors therefore considered that the licensee likely would have prevented the June 5, 2012, breaker failure if they had performed preventive maintenance task PMRQ 50018212-02 in 2011, and if they had measured the current relay contact resistance at that time.

The licensee entered this issue in their corrective action program as Condition Report CR-GGN-2012-07992. Their immediate corrective actions included replacing the failed control relay and restoring operability to the division III diesel generator. The long-term corrective actions included revising the breaker refurbishment/replacement procedure to

replace the current relay and changing the procedure frequency to once every 10 years versus once every 12 years.

Analysis. The licensee's failure to complete preventive maintenance tasks on the high pressure core spray division III diesel generator output breaker in accordance with the corresponding preventive maintenance task template was a performance deficiency. Using NRC Inspection Manual Chapter 0612, Appendix B, "Issue Screening," the inspectors determined that this performance deficiency was more than minor and is therefore a finding because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, this failed control relay caused the subject breaker to fail to close during the division III diesel generator monthly surveillance on June 5, 2012.

The inspectors used NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," to determine that the issue affected the Mitigating System Cornerstone. Because the finding pertained only to a degraded condition while the plant was shutdown, the inspectors used Manual Chapter 0609, Appendix G, "Shutdown Operations Significance Determination Process," Checklist 8, "Cold Shutdown or Refueling Operation – Time to Boil > 2 Hours: RCS Level < 23' Above Top of Flange," to determine that the finding was of very low safety significance because it did not increase the likelihood of a loss of reactor coolant system inventory; did not degrade the licensee's ability to terminate a leak path or add RCS inventory when needed; did not significantly degrade the licensee's ability to recover decay heat removal if lost; and did not affect the safety/relief valves (Green). The inspectors determined that the cause of this finding was a latent issue that is not reflective of current performance, therefore no cross-cutting aspect was identified.

Enforcement. 10 CFR 50, Appendix B, Criterion V, states in part, "that activities affecting quality shall be accomplished in accordance with procedures." Contrary to this requirement, an activity affecting quality was not accomplished in accordance with procedures. Specifically, preventive maintenance tasks on the high pressure core spray division III diesel generator output breaker are prescribed by preventive maintenance task PMRQ 50018212-02, on November 2, 2011. The licensee did not accomplish preventive maintenance tasks on the high pressure core spray division III diesel generator output breaker in accordance with PMRQ 50018212-02, in that PMRQ 50018212-02 required the licensee to refurbish/replace the breaker before November 2, 2011, and the licensee did not do so. As a result, on June 5, 2012, that breaker failed to close due to high contact resistance on the breaker's current relay contacts. As an immediate corrective action, the licensee replaced the failed relay and restored operability to the division III diesel generator. This violation is being treated as a non-cited violation (NCV), consistent with Section 2.3.2 of the Enforcement Policy because it was of very low safety significance (Green), and it was entered into the licensee's corrective action program as CR-GGN-2012-07992 to address recurrence. (NCV 05000416/2012005-03, Failure to Perform Preventive Maintenance on GE Magne-Blast Circuit Breakers in Accordance With the Corresponding Preventive Maintenance Task Template).

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the Updated Final Safety Analysis Report, procedure requirements, and technical specifications to ensure that the surveillance activities listed below demonstrated that the systems, structures, and/or components tested were capable of performing their intended safety functions. The inspectors either witnessed or reviewed test data to verify that the significant surveillance test attributes were adequate to address the following:

- Preconditioning
- Evaluation of testing impact on the plant
- Acceptance criteria
- Test equipment
- Procedures
- Jumper/lifted lead controls
- Test data
- Testing frequency and method demonstrated technical specification operability
- Test equipment removal
- Restoration of plant systems
- Reference setting data
- Annunciators and alarms setpoints

The inspectors also verified that licensee personnel identified and implemented any needed corrective actions associated with the surveillance testing.

- November 15, 2012, automatic depressurization system electrical surveillance

- November 29, 2012, turbine control valve fast closure functional test for channels B and D

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of two surveillance testing inspection samples as defined in Inspection Procedure 71111.22-05.

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP4 Emergency Action Level and Emergency Plan Changes (71114.04)

a. Inspection Scope

The NSIR headquarters staff performed an in-office review of the latest revisions of various Emergency Plan Implementing Procedures (EPIPs) and the Emergency Plan located under ADAMS accession number ML12265A082 as listed in the Attachment.

The licensee determined that in accordance with 10 CFR 50.54(q), the changes made in the revisions resulted in no reduction in the effectiveness of the Plan, and that the revised Plan continued to meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR 50. The NRC review was not documented in a safety evaluation report and did not constitute approval of licensee-generated changes; therefore, this revision is subject to future inspection. The specific documents reviewed during this inspection are listed in the Attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.04-05.

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06)

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on October 16, 2012, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the Emergency Operating Facility (EOF) and the Technical Support Center (TSC), to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into the corrective action program. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.06-05.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstone: Occupational and Public Radiation Safety

2RS02 Occupational ALARA Planning and Controls (71124.02)

a. Inspection Scope

This area was inspected to assess performance with respect to maintaining occupational individual and collective radiation exposures as low as is reasonably achievable (ALARA). The inspector used the requirements in 10 CFR Part 20, the technical specifications, and the licensee's procedures required by technical specifications as criteria for determining compliance. During the inspection, the inspector interviewed licensee personnel and reviewed the following items:

- Site-specific ALARA procedures and collective exposure history, including the current 3-year rolling average, site-specific trends in collective exposures, and source-term measurements
- ALARA work activity evaluations/post job reviews, exposure estimates, and exposure mitigation requirements
- The methodology for estimating work activity exposures, the intended dose outcome, the accuracy of dose rate and man-hour estimates, and intended versus actual work activity doses and the reasons for any inconsistencies
- Records detailing the historical trends and current status of tracked plant source terms and contingency plans for expected changes in the source term due to changes in plant fuel performance issues or changes in plant primary chemistry
- Radiation worker and radiation protection technician performance during work activities in radiation areas, airborne radioactivity areas, or high radiation areas
- Audits, self-assessments, and corrective action documents related to ALARA planning and controls since the last inspection

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of the one required sample as defined in Inspection Procedure 71124.02-05.

b. Findings

(1) Failure to Adequately Plan and Control Work Activities to Maintain ALARA

Introduction. An inspector reviewed a self-revealing Green finding of very low safety significance because during Refueling Outage 18, the licensee did not adequately plan and control work activities for the design and replacement of the new fuel pool cooling heat exchangers under Radiation Work Permit (RWP) 2012-1086.

Description. While reviewing the post ALARA review package for RWP 2012-1086 from Refueling Outage 18, "Extended Power Upgrade," the inspector identified that the licensee's ALARA planning and control program failed to prevent unplanned and unintended collective doses related to the design and replacement of the new fuel pool cooling heat exchangers. Specifically, outage personnel did not perform adequate pre-outage walkdowns which resulted in significant unplanned collective exposure. The actual collective dose and hours for the project was 23.9 person-rem and 12,237 RWP-hours, respectively. This is compared to the initial estimate of 3.74 person-rem and 1,905 RWP-hours. Initially, there were approximately 165 work activities, almost equally split between 2 tasks on RWP 2012-1086, Revision 0. However, RWP 2012-1086 was revised eight times during the fuel pool cooling heat exchanger replacement project due to increased work scope. According to the post-job ALARA review, the project began with only 40 percent of its work activities planned out and developed on the outage schedule. An additional 60 percent of the project work activities were added as increased scope after the outage began. The inspector noted that 63 Engineering Change Notice (ECNs) were added to the fuel pool cooling heat exchanger replacement project as increased scope. The implementation of the 63 ECNs caused the projected work hours to increase from 975 hours to 7,295 hours (a 748 percent increase). This increase in work scope was not fully understood nor justified, and resulted in unintended collective dose. Some causes for the dose overages were higher dose rates than expected, longer work durations than expected, and more added work scope than expected. However, there was no documentation in the ALARA package that justified the dose estimate increases resulting from changes in the job scope, duration, and work area dose rates. The inspector determined that the performance deficiency that led to the increased collective dose was not following the written ALARA Program procedure EN-RP-110, Revision 7, for planning and work controls and procedure EN-DC-115, "Engineering Change Process," Revision 13.

- EN-RP-110, Section 4.0.8, states, in part, that Planning and Outage Groups Responsibilities include: Providing accurate work site person-hours and accurate work locations for ALARA planning purposes. Provide detailed work plans to allow for ALARA planning to designate adequate radiological controls.

- EN-DC-115, Section 5.3.4(e), states, in part, that Radiation Protection / ALARA considerations shall be identified early in the engineering change process (by 10 percent design milestone). Radiation Protection / ALARA considerations should be addressed as an integral part of the design configuration, material selection, and implementation plan.

Apparent Cause Evaluation (ACE) in CR-GGNS-2012-09011 evaluated why the outage ALARA goal was exceeded by 114 person-rem. The ACE stated, in part, that the

milestone walkdowns of outage work packages and execution were not completed in a timely manner and in accordance with procedure EN-FAP-OU-100, “Refueling Outage Preparation and Milestones,” Revision 2.

Analysis. The failure to appropriately use the ALARA Planning and Controls procedure to prevent unplanned and unintended collective doses was a performance deficiency. This performance deficiency was more than minor because it affected the Occupational Radiation Safety Cornerstone attribute of Program and Process in that the failure to adequately implement ALARA procedures caused the collective radiation dose for the job activity to exceed the planned dose by more than 50 percent. In addition, this type of issue is addressed in Example 6.j of IMC 0612, Appendix E, “Examples of Minor Issues.” Using the Occupational Radiation Safety Significance Determination Process, the inspector determined this performance deficiency to be a finding of very low safety significance because although it involved ALARA planning and controls, the licensee’s latest rolling three-year average does not exceed 240 person-rem. This finding has a cross-cutting aspect in the human performance area, work control component, because the licensee failed to evaluate the impact of work scope change on human performance and interdepartmental communication and coordination prior to commencing work activities. Specifically, there was inappropriate coordination and communication of work activities between work groups [H.3(b)].

Enforcement. No violation of regulatory requirements occurred. However, this performance deficiency is directly related to the licensee’s failure to meet its expectation to fully implement ALARA outage, planning, and control procedures. This finding and the procedural concern were entered into the corrective action program as CR-GGNS-2012-09011 and CR-GGNS-2012-12396: FIN 05000416/2012005-04, “Failure to Adequately Plan and Control Work Activities to Maintain ALARA.”

(2) Failure To Follow Radiation Work Permit Requirements During Reactor Cavity High Water Operations

Introduction. An inspector reviewed a self-revealing Green non-cited violation of Technical Specification 5.4.1 for failure to comply with radiological exposure controls specified in Radiation Work Permit (RWP) 2012-1402, “Refuel Floor High Water Activities.”

Description. Radiation exposure controls in the RWP required the licensee to verify that fuel pool cleanup (demineralizers) was inservice, and if dose rates increased by more than 0.2 millirem/hour, change the resins. During reactor cavity operations, both fuel pool demineralizer trains were inoperable at least 25 days. In addition, the dryer separator pool and reactor cavity were isolated from the fuel pool clean up system. Consequently, general area radiation levels on the reactor cavity floor increased from 0.4 millirem/hour to 6.0 millirem/hour. However, the resins were not changed as required. The actual collective dose and hours for the work activity was 8.24 person-rem and 9,000 RWP-hours, respectively. This is compared to the initial estimate of 4.60 person-rem and 6,987 RWP-hours.

Analysis. The licensee's failure to implement radiological exposure controls in accordance with the RWP was the performance deficiency that caused unplanned and unintended collective doses. This performance deficiency was more than minor because it affected the Occupational Radiation Safety Cornerstone attribute of Program and Process in that the failure to adequately implement ALARA procedures caused the collective radiation dose for the job activity to exceed the planned dose by more than 50 percent. In addition, this type of issue is addressed in Example 6.i of IMC 0612, Appendix E, "Examples of Minor Issues." Using the Occupational Radiation Safety Significance Determination Process, the inspector determined this performance deficiency to be a non-cited violation of very low safety significance because although it involved ALARA planning and controls, the licensee's latest rolling three-year average does not exceed 240 person-rem. This violation involved a cross-cutting aspect in the human performance area, work control component, because the licensee did not appropriately coordinate work activities by incorporating actions to address the need for work groups to communicate and coordinate with each other during activities in which interdepartmental coordination was necessary to assure human performance [H.3(b)].

Enforcement. Technical Specification 5.4.1 states that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, 1978. Section 7.e(1). Contrary to the above, during Refueling Outage 18, written procedures were not established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, 1978. Specifically,

- Appendix A of Regulatory Guide 1.33 lists procedures for radiation exposure and access controls;
- licensee procedure EN-RP-100, Revision 7, "Radiation Worker Expectations," is a procedure for radiation exposure and access controls and requires, in part, that individuals comply with all requirements of the procedure and radiation work permit (RWP) instructions when performing radiological work;
- RWP 2012-1402, "Refuel Floor High Water Activities," required the licensee to verify that fuel pool cleanup system demineralizers were in-service and to change the resins if dose rates increased by more than 0.2 millirem/hour; and

from March 13 through April 10, 2012, fuel pool cleanup system demineralizers were not in service. In addition, after dose rates increased by more than 0.2 millirem/hour, the resins were not changed. Consequently, general area radiation levels on the reactor cavity floor increased from 0.4 millirem/hour to 6.0 millirem/hour. This violation was documented in the licensee's corrective action program as condition reports CR-GGNS-2012-04288 and CR-GGNS-2012-12401. This issue is being treated as a non-cited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000416/2012005-05, "Failure To Follow the Radiation Work Permit Requirements During Reactor Cavity High Water Operations."

2RS04 Occupational Dose Assessment (71124.04)

a. Inspection Scope

This area was inspected to: (1) determine the accuracy and operability of personal monitoring equipment; (2) determine the accuracy and effectiveness of the licensee's methods for determining total effective dose equivalent; and (3) ensure occupational dose is appropriately monitored. The inspector used the requirements in 10 CFR Part 20, the technical specifications, and the licensee's procedures required by technical specifications as criteria for determining compliance. During the inspection, the inspector interviewed licensee personnel, performed walkdowns of various portions of the plant, and reviewed the following items:

- External dosimetry accreditation, storage, issue, use, and processing of active and passive dosimeters
- The technical competency and adequacy of the licensee's internal dosimetry program
- Adequacy of the dosimetry program for special dosimetry situations such as declared pregnant workers, multiple dosimetry placement, and neutron dose assessment
- Audits, self-assessments, and corrective action documents related to dose assessment since the last inspection

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of the one required sample as defined in Inspection Procedure 71124.04-05.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety, Occupational Radiation Safety, and Physical Protection

4OA1 Performance Indicator Verification (71151)

.1 Data Submission Issue

a. Inspection Scope

The inspectors performed a review of the performance indicator data submitted by the licensee for the third Quarter 2012 performance indicators for any obvious inconsistencies prior to its public release in accordance with Inspection Manual Chapter 0608, "Performance Indicator Program."

This review was performed as part of the inspectors' normal plant status activities and, as such, did not constitute a separate inspection sample.

b. Findings

No findings were identified.

.2 Mitigating Systems Performance Index - Emergency ac Power System (MS06)

a. Inspection Scope

The inspectors sampled licensee submittals for the mitigating systems performance index - emergency ac power system performance indicator for the period from the fourth quarter 2011 through third quarter 2012. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, mitigating systems performance index derivation reports, issue reports, event reports, and NRC integrated inspection reports for the period of October 2011 through September 2012 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's condition report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one mitigating systems performance index - emergency ac power system sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.3 Mitigating Systems Performance Index - High Pressure Injection Systems (MS07)

a. Inspection Scope

The inspectors sampled licensee submittals for the mitigating systems performance index - high pressure injection systems performance indicator for the period from the fourth quarter 2011 through third quarter 2012. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, issue reports, mitigating systems performance index derivation reports, event reports, and NRC integrated inspection reports for the period of October 2011 through September 2012 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's condition report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one mitigating systems performance index - high pressure injection system sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.4 Mitigating Systems Performance Index - Heat Removal System (MS08)

a. Inspection Scope

The inspectors sampled licensee submittals for the mitigating systems performance index - heat removal system performance indicator for the period from the fourth quarter 2011 through third quarter 2012. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, mitigating systems performance index derivation reports, and NRC integrated inspection reports for the period of October 2011 through September 2012 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also

reviewed the licensee's condition report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one mitigating systems performance index - heat removal system sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.5 Mitigating Systems Performance Index - Residual Heat Removal System (MS09)

a. Inspection Scope

The inspectors sampled licensee submittals for the mitigating systems performance index - residual heat removal system performance indicator for the period from the fourth quarter 2011 through third quarter 2012. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, issue reports, mitigating systems performance index derivation reports, event reports, and NRC integrated inspection reports for the period of October 2011 through September 2012 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's condition report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one mitigating systems performance index - residual heat removal system sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.6 Mitigating Systems Performance Index - Cooling Water Systems (MS10)

a. Inspection Scope

The inspectors sampled licensee submittals for the mitigating systems performance index - cooling water systems performance indicator for the period from the fourth quarter 2011 through third quarter 2012. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and

guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, issue reports, mitigating systems performance index derivation reports, event reports, and NRC integrated inspection reports for the period of October 2011 through September 2012 to validate the accuracy of the submittals. The inspectors reviewed the mitigating systems performance index component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's condition report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one mitigating systems performance index - cooling water system sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152)

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

As part of the various baseline inspection procedures discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that they were being entered into the licensee's corrective action program at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. The inspectors reviewed attributes that included the complete and accurate identification of the problem; the timely correction, commensurate with the safety significance; the evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent of condition reviews, and previous occurrences reviews; and the classification, prioritization, focus, and timeliness of corrective actions. Minor issues entered into the licensee's corrective action program because of the inspectors' observations are included in the attached list of documents reviewed.

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure, they were considered an integral part of the inspections performed during the quarter and documented in Section 1 of this report.

b. Findings

No findings were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's corrective action program. The inspectors accomplished this through review of the station's daily corrective action documents.

The inspectors performed these daily reviews as part of their daily plant status monitoring activities and, as such, did not constitute any separate inspection samples.

b. Findings

No findings were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors focused their review on repetitive equipment issues, but also considered the results of daily corrective action item screening discussed in Section 4OA2.2, above, licensee trending efforts, and licensee human performance results. The inspectors nominally considered the 6-month period of May 20, 2012, through November 20, 2012, although some examples expanded beyond those dates where the scope of the trend warranted.

The inspectors also included issues documented outside the normal corrective action program in major equipment problem lists, repetitive and/or rework maintenance lists, departmental problem/challenges lists, system health reports, quality assurance audit/surveillance reports, self-assessment reports, and Maintenance Rule assessments. The inspectors compared and contrasted their results with the results contained in the licensee's corrective action program trending reports. Corrective actions associated with a sample of the issues identified in the licensee's trending reports were reviewed for adequacy.

These activities constitute completion of one single semi-annual trend inspection sample as defined in Inspection Procedure 71152-05.

b. Findings and Observations

No findings were identified.

The inspectors identified an increasing trend in condition reports identifying issues within the work management process. The specific items documented in the condition reports

were reviewed by the inspectors, and it was determined that all were minor in nature. The inspectors determined that the licensee had properly identified deficiencies in tagout reviews, emergent work requests, work order impact statements and entered each issue in the corrective action process. The work management issues have resulted in various plant impacts, most notably an impact on resources due to repreforming work orders and tagout reviews. The inspectors determined that although there was an abnormal increase in work management issues, the licensee did appropriately address the issues in the corrective action program.

.4 Selected Issue Follow-up Inspection: 4160 Vac Preventative Maintenance Procedures

a. Inspection Scope

The inspectors chose to review Condition Reports CR-GGN-2012-08885, CR-GGN-2012-9035, and CR-GGN-2012-09111, which addressed programmatic conditions associated with 4160 Vac breaker testing described as "The associated PM, 07-S-12-61, Inspection of GE Magna Blast Circuit Breaker, does not have any specific steps that would clean or inspect auxiliary contacts though section 7.1.4 requires a general inspection for any physical damage." The inspectors reviewed the associated corrective actions for CR-GGN-2011-08885, CR-GGN-2012-9035, and CR-GGN-2012-09111. The inspectors also reviewed associated procedures and interviewed several members of the involved licensee staff. Documents reviewed are listed in the attachment.

These activities constitute completion of one in-depth problem identification and resolution sample as defined in Inspection Procedure 71152-05.

b. Findings

No findings were identified.

.5 In-depth Review of Operator Workarounds

a. Inspection Scope

The inspectors evaluated the licensee's implementation of their process used to identify, document, track, and resolve operational challenges. Inspection activities included, but were not limited to, a review of the cumulative effects of the operator workarounds, operator burdens, control deficiencies, control room alarms and long standing danger and caution tags on system availability and the potential for improper operation of the system, for potential impacts on multiple systems, and on the ability of operators to respond to plant transients or accidents. The inspectors performed a review of the cumulative effects of operator workarounds, operator burdens, control deficiencies, control room alarms and long standing danger and caution tags. The documents listed in the attachment were reviewed to accomplish the objectives of the inspection procedure. The inspectors reviewed current operational challenge records to determine whether the licensee was identifying operator challenges at an appropriate threshold, had entered them into their corrective action program, and had proposed or

implemented appropriate and timely corrective actions, which addressed each issue. Reviews were conducted to determine if any operator challenge could increase the possibility of an initiating event, if the challenge was contrary to training, required a change from long-standing operational practices, or if it created the potential for inappropriate compensatory actions. Additionally, the inspectors review two licensee assessments of their process to determine if they were properly assessing the issues and determining long term corrective actions to reduce the operator challenges. Daily plant and equipment status logs, degraded instrument logs, and operator aids or tools being used to compensate for material deficiencies were also assessed to identify any potential sources of unidentified operator workarounds.

These activities constitute completion of one operator workarounds annual inspection sample as defined in Inspection Procedure 71152.

b. Findings

No findings were identified.

4OA3 Followup of Events and Notices of Enforcement Discretion (71153)

.1 (Closed) Licensee Event Report 05000416/2012-001-00: "Surveillance Test Procedure Inadequate to Meet the Requirements of Technical Specifications"

a. Inspection Scope

On November 19, 2009, the licensee failed to ensure that Technical Specification (TS) Surveillance Requirement (SR) 3.5.3.1 was met. The 2009 NRC Problem Identification and Resolution (PI&R) Inspection identified a concern that the surveillance procedure used to verify the reactor core isolation cooling (RCIC) system piping is filled with water from the pump discharge valve to the injection valve was inadequate, in that it did not have a basis (calculation) for the two-minute venting criterion and that there was no visual means of confirming water flow through the vent line when performing venting of the RCIC system. The 2009 PI&R inspection team documented the concern as a non-cited violation in section 4OA2.5a of report 2009008. During the 2011 PI&R inspection, the team reviewed the non-cited violation identified by the 2009 PI&R inspection and determined that corrective actions were not taken in a timely enough manner to meet the requirements of TS (SR) 3.5.3.1, which resulted in the RCIC system being inoperable for a period of time in excess of TS allowance, which resulted in a condition prohibited by TS. The licensee confirmed full compliance with TS SR 3.5.3.1 by performing ultrasonic testing on February 5, 2010, which verified the piping was full of water.

The cause of the occurrence was an inadequate surveillance procedure acceptance criterion, which resulted in the requirements of SR 3.5.3.1 not being met. The contributing cause was the lack of technical rigor in evaluation of a potential inadequate surveillance procedure. Corrective actions included using ultra sonic testing to verify the RCIC system piping was full of water and revising RCIC surveillance procedures to incorporate ultra sonic testing to verify the piping is full of water. Documents reviewed as part of this inspection are listed in the attachment. The enforcement aspects of this

finding were discussed in NRC Inspection Report 05000416/2011006 in Section 4OA2.5a. This LER is closed.

b. Findings

No findings were identified.

.2 (Closed) Licensee Event Report 05000416/2012-002-00: "Manual Reactor Scram Due to a Steam Supply Motor Operated Valve Failure that Resulted in the Inability to Maintain Reactor Water Level"

a. Inspection Scope

On February 19, 2012, at 7:04 p.m., Grand Gulf Nuclear Station (GGNS) was in Mode 1 operating at approximately 22 percent power during a planned plant shutdown with the reactor feed pump A secured when a manual reactor scram was initiated due to decreasing reactor pressure vessel (RPV) water level. The cause of the event was a combination of the isolating steam valve to the reactor feed pump B being out of position, 90 percent closed, which isolates the main steam header from reactor feed pump B and a planned power reduction. The power reduction resulted in the turbine bypass valves (TBPV) opening as designed, then when the TBPVs reached 16 percent open, reactor feed pump B began to decrease in speed. This resulted in a decreasing level in the RPV. As level decreased, the control room supervisor directed a manual scram be inserted prior to reaching the low level scram set point (+11.4 inches narrow range). After the scram, reactor core isolation cooling (RCIC) was manually started to inject water into the RPV and reactor feed pump A was restarted to restore and maintain reactor water level. The appropriate off-normal event procedures were entered to mitigate the transient with all systems responding as designed. All control rods inserted to shut down the reactor.

The cause of the event was that equipment deficiencies preventing the high pressure steam inlet valve to B RFPT from fully opening. Corrective actions included reactor water level was restored and the plant was placed in a stable condition. The licensee conducted troubleshooting of the steam supply valve and repaired it during the refueling outage. Other contributing causes were evaluated and corrective actions were develop to address these process issues. Documents reviewed as part of this inspection are listed in the attachment. The enforcement aspects of this finding were discussed in NRC Inspection Report 05000416/2012002 in Section 4OA3 and documented below. This LER is closed.

b. Findings

Introduction. The inspectors identified a Green non-cited violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," involving the licensee's failure to follow Procedure EN-LI-118, "Root Cause Evaluation Process," Revision 18, in that they failed to evaluate the risk significances and develop action plans to address equipment identified during their extent-of-condition review for a post-scram root-cause analysis.

Description. The inspectors reviewed Licensee Event Report 2012-002-00, “Manual Reactor Scram Due to a Steam Supply Motor Operated Valve Failure that Resulted in the Inability to Maintain Reactor Water Level.” The inspectors identified that the licensee performed a root-cause analysis under Condition Report CR-GGN-2012-1842. In their review of the root cause and associated corrective actions, the inspectors noted that operations were directed by Corrective Actions 34 and 35 to perform an extent-of-condition review of other systems to identify hidden or longstanding equipment issues that pose a challenge to the safe operation of the plant. Although the operations personnel identified numerous components such as valves and pumps in degraded state that could affect safe plant operations, they did not properly perform Procedure EN-LI-118, Attachment 9.7, in that they completed step one of evaluating and identifying the similar components that were a cause of the original scram, but did not perform the second step of determining the risk significance of these identified components and did not develop action plans to resolve the degraded conditions.

The inspectors brought this to the attention of the licensee management, and they reviewed the root cause and corrective actions from the condition report and came to the same conclusions as the inspectors.

The licensee entered this issue in their corrective action program as Condition Report CR-GGN-2012-11950. Their immediate corrective actions included assigning corrective actions for operations personnel to properly evaluate the risk significance of the identified components and perform appropriate corrective actions to correct the degraded conditions.

Analysis. The licensee’s failure to properly determine risk significance and associated action plans to correct degraded equipment that could challenge safe plant operation is a performance deficiency. The performance deficiency is more than minor and is therefore a finding because if left uncorrected, it would have the potential to lead to a more significant safety concern. Specifically, the failure to take corrective actions to correct degraded equipment has the potential to lead to initiating events resulting in plant transients. Using NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," the inspectors determined that the issue affected the Initiating Events Cornerstone. In accordance with NRC Inspection Manual Chapter 0609, Appendix A, “The Significance Determination Process (SDP) for Findings at Power,” the inspectors determined that the issue has very low safety significance (Green) because the finding did not cause a reactor trip or the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. The inspectors determined that the apparent cause of this finding was that when operations management directed operators to identify the degraded equipment, they did not encourage those operators to comply with Procedure EN-LI-118. Therefore, the finding has a cross-cutting aspect in the human performance area, work practices component because the licensee did not define and effectively communicate expectations regarding procedural compliance. [H.4(b)]

Enforcement. 10 CFR 50, Appendix B, Criterion V, states, in part, that activities affecting quality shall be prescribed by and accomplished in accordance with documented instructions, procedures, or drawings, of a type appropriate to the circumstances. Procedure EN-LI-118, "Root Cause Evaluation Process," Revision 18, Attachment 9.7, requires the licensee to evaluate the previous problem for similar issues and determine risk significances and associated action plans to resolve the degraded components identified. Contrary to the above, on or before October 9, 2012, the licensee did not evaluate a previous problem for similar issues and determine risk significances and associated action plans. Specifically, although the licensee did properly evaluate and identify similar components such as valves and pumps in a degraded condition, they did not determine the risk significance of what they identified or develop action plans to resolve the degraded components identified. As an immediate corrective action, the licensee assigned corrective actions to operations personnel to properly evaluate the risk significance of the identified components and develop action plans to correct the degraded components. This violation is being treated as a non-cited violation (NCV), consistent with Section 2.3.2 of the Enforcement Policy because it was of very low safety significance (Green) with no actual safety consequence, and it was entered into the licensee's corrective action program as CR-GGN-2012-11950 to address recurrence: NCV 05000416/2012005-06, "Failure to Evaluate the Risk Significances and Develop Action Plans to Address Equipment Identified During Extent of Condition Review for a Post Scram Root Cause Analysis."

.3 (Closed) Licensee Event Report 05000416/2012-003-00: "ESF Actuation Due to Division III Bus Undervoltage following a Lighting Strike"

a. Inspection Scope

On April 2, 2012, at 3:11 p.m. central daylight time (CDT) Grand Gulf Nuclear Station was in mode 5 when a valid engineered safety feature (ESF) actuation for emergency alternating current power to the division III 4160 volt bus occurred due to degraded voltage. One of the two offsite 500 kilovolt offsite feeder breakers tripped open causing a drop in grid voltage that resulted in a trip of normal ESF feeder for division III 4160 volt bus. The high pressure core spray diesel generator automatically started and energized the bus. The high pressure core spray system was not running at the time and no emergency core cooling initiation occurred during this event. The technical specification required power sources remained operable and in service during this event. The 500 kilovolt feeder was restored by the dispatcher at approximately 3:15 p.m. CDT.

The cause of the event was a lighting strike on the Franklin 500 kilovolt line. Entergy transmission operation center reported at approximately 3:12 p.m., the Franklin extra high voltage to Grand Gulf 500 kilovolt line tripped and locked out. The Franklin line in one of three offsite power sources available to Grand Gulf. The fault was sensed by the Grand Gulf line realying equipment and the fault was cleared by the dispatcher. Grand Gulf personnel investigated the event and determined that all onsite equipment performed as expected. Documents reviewed as part of this inspection are listed in the attachment. This LER is closed.

b. Findings

No findings were identified.

.4 (Closed) Licensee Event Report 05000416/2012-004-00: "Weld Defect Indication Found in Residual Heat Removal System to Reactor Pressure Vessel Boundary Nozzle"

a. Inspection Scope

On April 28, 2012, while the plant was in mode 4, shutdown for refueling outage 18, ultrasonic testing was being performed on the nozzle weld N6B-KB, residual heat removal/low pressure coolant injection nozzle to safe end weld. The ultrasonic examination revealed an indication indicative of intergranular stress corrosion cracking. The indication was evaluated by personnel and confirmed to be a weld defect. Inservice Inspection relief request (RR-ISI-17; ML12124A245) to repair the weld was submitted to, and approved by, the NRC (reference GTC 2012-00011). A full structural weld overlay repair to the weld in accordance with ASME code requirements was completed on May 14, 2012. A post-weld ultrasonic test was completed satisfactorily on May 16, 2012.

The cause of the weld defect was determined to be the weld and butter were fabricated with material that is susceptible to IGSCC type cracking. Actions were taken to mitigate this condition through the stress relieving process of Induction Heating Stress Improvement (IHSI). A contributing cause for the identification of this condition in 2012 (versus earlier) is the development and use of improved ultrasonic examination procedures, techniques and training. Documents reviewed as part of this inspection are listed in the attachment. This LER is closed.

b. Findings

No findings were identified.

.5 (Closed) Licensee Event Report 05000416/2012-005-00: "Average Power Range Monitors Inoperable in Excess of Technical Specification Allowances in Mode 2"

a. Inspection Scope

On June 13, 2012, during startup activities for Unit 1 with the reactor in Mode 1 operating at approximately 12 -15 percent (%) power, the Average Power Range Monitor (APRMs) were indicating a reactor power level lower than expected for the plant condition. The licensee determined that during Refueling Outage 18 (RF18) the APRMs were set to indicate flux lower than the actual power level. This resulted in the system being inoperable during Mode 2 due to the APRM Neutron Flux High - Setdown scram setpoint being outside of Technical Specification (TS) 3.3.1.1 Reactor Protection System (RPS) Instrumentation limits. This condition existed when Mode 2 was initially entered on June 6, 2012 until Mode 1 was entered on June 13, 2012. This condition was limited to the Power Range Neutron Monitoring (PRNM) system. During startup in Mode 2, the intermediate range monitors (IRM) and the high reactor pressure trip functions were operable. Therefore, reactor power transients would have been mitigated by these

functions. The APRM Neutron Flux High - Setdown function is not directly credited in any safety analyses, and this event did not adversely affect plant safety or the health and safety of the public.

The apparent cause of this condition was a failure to identify differing operating characteristics between the old system and the new system during the engineering change process. The licensee had been entering the minimum gain for the old APRM instruments, and did not evaluate this practice as part of the engineering change process. The old instruments indicated much higher than actual power at low power levels while the new instruments indicated closer to actual levels. As a result, when the licensee continued to use the minimum gain setting, the new instruments indicated lower than actual power. The licensee conducted an apparent cause evaluation and identified other contributing causes and corrective actions. Documents reviewed as part of this inspection are listed in the attachment. The enforcement aspects of this finding are documented below. This LER is closed.

b. Findings

Introduction. The inspectors identified a Green non-cited violation of 10 CFR 50, Appendix B, Criterion III, "Design Control," involving the licensee's failure to establish the gain settings used on the power range neutron monitoring (PRNM) system in accordance with design requirements. Specifically, prior to June 13, 2012, the licensee used non-conservative gain settings on the average power range monitors (APRMs) and local power range monitors (LPRMs) causing them to indicate flux lower than the actual power level, which resulted in violations of Technical Specifications 3.0.4, 3.3.1.1, and 3.3.2.1.

Description. On June 13, 2012, during a reactor startup, the licensee discovered that reactor power as indicated by the APRM neutron flux was significantly lower than the apparent power as determined by the heat balance and other indications. The licensee determined that actual power was approximately 12-15 percent while the APRMs indicated 6.5 percent. The licensee immediately validated the heat balance inputs and adjusted APRM and LPRM gains to correct the discrepancy. The licensee reported this event in License Event Report (LER) 05000416/2012-005-00 as a violation of Technical Specification 3.3.1.1 "Reactor Protection System Instrumentation" due to the APRM Neutron Flux High – Setdown scram function being inoperable. The inspectors reviewed the LER and concluded that the licensee also violated Technical Specification 3.0.4 because they entered Mode 2 with the required function inoperable and did not meet any of the allowable exceptions. Furthermore, the inspectors noted that the Neutron Flux – Upscale, Startup function of Technical Specification 3.3.2.1 "Control Rod Block Instrumentation" was also inoperable.

The cause of the technical specification violations was that the licensee had entered incorrect, non-conservative gains into the APRM and LPRM instruments. During Refueling Outage 18, the licensee upgraded the PRNM system to a digital General Electric Hitachi designed Nuclear Measurement and Control System (NUMAC) as part of the extended power uprate (EPU). This involved replacing all of the APRM instruments with a new design. The licensee also replaced forty LPRM detectors.

The licensee procedure for initial APRM gain setting directed setting the gain to the minimum possible before instrument calibration, which is performed between 18 percent and 21.8 percent reactor power. The apparent reason for this was that the old instruments did not effectively discriminate gamma flux at low power, and therefore indicated higher than actual values. The licensee used the minimum gain value to prevent a rod withdrawal block prior to calibrating the instruments. The new instruments are more effective at gamma discrimination at low power, and therefore indicate closer to actual flux. The licensee had never established a basis for determining the initial gain settings, did not re-evaluate the continued use of these settings during the design change process, and did not modify the procedures to set a more conservative initial gain setting. The licensee also discovered during their apparent cause evaluation that the initial gain setting they used for the replacement LPRM detectors was incorrect. The licensee had been using 3.000 as the default initial gain setting for uncalibrated LPRMs. However, the vendor recommended default setting was 3.692. Therefore the forty replaced LPRMs were providing a non-conservative signal to the APRMs. As a result of the failure to use conservative gain settings on the LPRMs and APRMs, all APRMs indicated approximately 40-50 percent of actual thermal power when the error was discovered.

The APRMs are designed to indicate within tolerances and ensure protective functions specified in the plant design documents. The inspectors determined that the licensee had been using initial gain settings for both the LPRMs and APRMs that had not been evaluated or analyzed to ensure these design requirements were being met. The licensee carried over this practice when implementing their design change for the new system instead of evaluating the settings for the new system.

The licensee entered this issue into their corrective action program as Condition Report CR-GGN-2013-00177. The immediate corrective actions included adjusting gain settings for their APRM instruments so they indicated actual core thermal power as determined by the heat balance. The licensee also revised their neutron monitoring procedure to set the initial gains for the APRMs to the maximum value to maintain conservative power indication during future startups and changed their LPRM replacement procedure to use the vendor specified initial gain setting of 3.692 prior to startup.

Analysis. The failure to ensure that the design basis was correctly translated into specifications, drawings, procedures, and instructions was a performance deficiency. The performance deficiency was more than minor because it affected the design control attribute of the Mitigating Systems Cornerstone and impacted the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the incorrect gain settings led to a violation of technical specification 3.0.4 by rendering the APRM Neutron Flux High – Setdown scram function and the Neutron Flux – Upscale, Startup control rod block function inoperable prior to entry into Mode 2. In accordance with NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," the issue was determined to affect the Mitigating Systems Cornerstone. In accordance with NRC Inspection Manual Chapter 0609, Appendix A, “The Significance Determination Process (SDP) for Findings at Power”, the issue was determined to have very low safety significance (Green) because although the finding affected a single reactor protection

system (RPS) trip signal to initiate a reactor scram, it did not affect the function of other redundant trips or diverse methods of reactor shutdown, did not involve control manipulations that unintentionally added positive reactivity, and did not result in a mismanagement of reactivity by operators. This finding was not assigned a cross-cutting aspect because the performance deficiency occurred in the past and is not reflective of current licensee performance.

Enforcement. 10 CFR 50, Appendix B, Criterion III, requires, in part, that "measures shall be established to assure that the design basis is correctly translated into procedures." Contrary to the above, prior to June 13, 2012, measures established by the licensee did not assure that the design basis was correctly translated into procedures. Specifically, those measure did not assure that the bases for the APRM and LPRM gain settings were correctly translated into the licensee's maintenance and operating procedures. The licensee's immediate actions were to set appropriate gain settings for their APRM instruments and submit an LER for the violation of technical specifications. This violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy, because it was of very low safety significance (Green) and was entered into the licensee's corrective action program as CR-GGN-2013-00177 to address recurrence NCV 05000416/2012005-07, "Failure to Establish Gain Settings on APRM and LPRM Instruments in Accordance with Design Requirements."

.6 (Closed) Licensee Event Report 05000416/2012-006-00: "Special Nuclear Material Inventory Discrepancy"

a. Inspection Scope

On July 25, 2012, at 3:34 p.m. the licensee determined that a source range monitor detector was not in its expected storage location. This met the reporting criteria in 10 CFR 72.74 and 10 CFR 74.11 as a loss of special nuclear material. The Source Range Monitor (SRM) detector contained an estimated maximum activity of 0.187 microcuries, which is equivalent to 0.00292 grams of all Special Nuclear Material (SNM) isotopes, including U-235. This also met the reporting criteria in 10 CFR 20.2201 (a) (1) (ii) as a loss of licensed material of a quantity greater than ten times that specified in Appendix C to 10 CFR Part 20. According to special nuclear material (SNM) inventory sheets, the SRM detector was expected to be stored in an SNM Item Control Area (ICA) on the 208 foot elevation of the Auxiliary building. However, during performance of the annual physical inventory of SNM, the SRM detector could not be located. Subsequent investigations concluded that the SRM was removed from the 208 foot elevation of the Auxiliary building SNM ICA during clean up at the end of Refueling Outage 18, along with other material that was stored in the area, and discarded as radioactive waste.

The inspector reviewed the licensee event report, NRC Event Notification 48133, and the licensee's corrective action reports, which documented this event and its causes. The inspectors verified that the cause of the event was identified, radiological consequences were assessed, and that corrective actions were reasonable. The enforcement aspects of this violation are discussed in Section 4OA7 of this report. This licensee event report is closed.

.7 (Closed) Licensee Event Report 05000416/2012-007-00: “Standby Service Water System Administratively Inoperable For A Period Longer Than Allowed By Technical Specifications”

a. Inspection Scope

On August 18, 1987, a 10 CFR 50.59 safety evaluation was performed for a change to the Final Safety Analysis Report (FSAR) to relax methodology for single passive failures of standby service water components. On July 19, 2012, with the plant in mode 1 at approximately 100 percent power, during the inspectors reviewed FSAR change NPEFSAR 87/0067 and determined prior NRC approval of the change was required. This resulted in SSW being administratively inoperable for a period longer than allowed by technical specifications due to relaxation of the passive failure methodology without prior NRC approval. The licensee determined that the event posed no threat to public health and safety as there had been no passive failures that had challenged operability. The licensee implemented compensatory measures and they have submitted a request to revise the SSW passive failure methodology to the NRC. Procedures are in place to prevent recurrence.

The apparent cause for this issue is misapplication of industry documents that were used for justification in the 10 CFR 50.59 safety evaluation due to lack of understanding their applicability. The NUREG-0138 document did not specifically address single passive failures for systems such as the standby service water system. These documents were based on single passive failures of emergency core cooling systems. Therefore, the licensee should have responded with a "YES" answer to questions 1 and 2 in the safety evaluation, which would have required prior NRC approval before these changes were made to the GGNS FSAR. As stated above the licensee has submitted a request to the NRC seeking approval of changes to the standby passive failure methodology and has implement compensatory measures as an interim actions. Documents reviewed as part of this inspection are listed in the attachment. The enforcement aspects of this finding were discussed in NRC Inspection Report 05000416/2012008 in Section 1R21.2.3. This LER is closed.

b. Findings

No findings were identified.

.8 Reactor Scram Following a Phase A Unit Differential Relay Trip

a. Inspection Scope

On December 29, 2012 at approximately 12:18 a.m, the plant scrammed from 100 percent power. Upon responding to the site at 2:30 a.m., the inspectors learned that the initial cause of the scram appeared to be the phase A unit differential relay tripping, causing a generator lockout relay to trip, which resulted in a turbine trip and reactor scram due to power being greater than 40 percent. The inspectors verified that all the control rods were inserted and settled at position “00”, and that reactor water level

lowered to approximately +7 inches narrow range (approximately 174 inches above top of active fuel) and being maintained with reactor feedwater pump turbine A at approximately +36 inches using startup level control. Reactor vessel pressure increased on the trip from its nominal value of approximately 1035 psig to approximately 1116 psig, and this caused the low-low level set to initiate as expected.

Additionally, the valve B21-F047A (automatic depressurization system safety relief valve) lifted (normal mechanical lift pressure is 1113 psig), but the valve did not close when it should have, and lowered reactor pressure vessel pressure to approximately 675 psig. The licensee entered their procedures to shut the valve, and when they took the control switch to close, the valve closed. They also removed the fuses for this valve. The licensee determined that the mechanical relief function for the valve was inoperable but the safety relief function and automatic depressurization function were still operable. The licensees maintained the plant in a hot shutdown condition until restart. The inspectors reviewed the force outage list with plant staff and monitored troubleshooting of plant issues. The licensee could not duplicate the condition with the phase A unit differential relay through testing but elected to replace this relay prior to restart. Additionally the licensee placed recording equipment on the various relays to monitor response during startup.

Specific documents reviewed during this event follow-up are listed in the attachment.

These activities constitute completion of one event follow-up as defined in Inspection Procedure 71153-05.

b. Findings

No findings were identified.

4OA5 Other Activities

.1 Power Uprate Related Inspection Activities: Licensee Actions for New or More Likely Initiating Events (IP 71004)

a. Inspection Scope

During the inspection period, the inspectors verified that the licensee has taken all required actions to address the effects of new or more probable initiating events as stated in the license amendment, licensee commitments, or in the safety evaluation report. The inspectors verified that the applicable Off-Normal Event Procedures, Emergency Procedures, and Severe Accident Procedures had been revised to incorporate the operational changes made due to the extended power uprate.

These activities constitute the completion of one inspection sample as defined in Inspection Procedure 71004, Section 2.01.

b. Findings

No findings were identified.

.2 Power Uprate Related Inspection Activities: Completion of the Grand Gulf Nuclear Station Extended Power Uprate Inspection Plan (IP 71004)

a. Inspection Scope

Inspection Procedure 71004, "Power Uprate," requires that several samples be selected for inspection. The samples selected were risk-informed and focused on items concerning new integrated plant response characteristics, new operator procedures, and plant safety during any required tests. The inspection effort is summarized below in which each sample, applicable inspection procedure used and report number in which the results were documented are provided.

Report No.: 05000416/2012002

Sample Description	Procedure
Standby service water siphon line extension modification	71111.18
Standby liquid control system (Boron-10 enrichment change) modification	71111.18
Steam dryer assembly welding processes and examinations	71111.08
Review of Anticipated Transient Without a Scram Safety Evaluation	71111.17
Flow Accelerated Corrosion monitoring and maintenance program	71004

Report No.: 05000416/2012003

Sample Description	Procedure
Power Range Neutron Monitoring modification	71111.18
Replacement steam dryer 10CFR50.59 Evaluation for current operating power limit (3898 MWth)	71111.18
Post modification test for ultimate heat sink siphon piping replacement and extension	71111.19
Power Range Neutron Monitoring system post maintenance test after installation	71111.19

Operator training and requalification program	71111.11
Power Range Neutron Monitoring system functional test prior to startup	71111.22

Report No.: 05000416/2012004

Sample Description	Procedure
Power ascension testing as described in Appendix 9 of the EPU license amendment	71004
Power Range Neutron Monitoring system calibration at EPU power (4408 MWth)	71111.22
Operator actions during integrated plant evolutions	71004
Operator training at EPU power (4408 MWth)	71111.11

Report No.: 05000416/2012005

Sample Description	Procedure
Verify licensee has taken all necessary actions to address the effects of new or more likely initiating events as stated in the license amendment, licensee commitments, or the safety evaluation	71004

.3 Licensee Strike Contingency Plans (92709)

a. Inspection Scope

On October 1, 2012, Grand Gulf Nuclear Station initiated a lockout of bargaining unit security officers due to their vote against the ratification of the contract that expired September 30, 2012. In accordance with Inspection Procedure 92709, "Licensee Strike Contingency Plans," the resident inspectors monitored the need for compensatory measures on a daily basis and reported adverse conditions to regional management and security specialists for assessment. The residents also verified support from the local authorities were adequate to ensure that personnel had unimpeded access to the plant, delivery of support goods and offsite shipment of radioactive materials were unencumbered, unimpeded access to medical care and ambulance services, and unimpeded access to the local fire department to supplement the site fire fighting unit. Security inspectors from the regional office provided oversight for the turn-over of the bargaining security force to the contingency security force. The bargaining unit security force voted to ratify a new contract on November 16, 2012. The resident inspectors

interviewed security management and along with regional security inspectors reviewed the site's reintegration plan to ensure adequate security coverage would be maintained during the reintegration process. Documents reviewed are listed in the attachments.

b. Findings

No findings were identified.

.4 (Closed) URI 05000416/2012008-07, "Potential Internal Flooding Caused by Circulation Water System Failure"

a. Inspection Scope

On October 9, 2012, the NRC issued NRC Inspection Report 05000416/2012008, which documented the results of an component design bases inspection conducted from June 25, 2012, to September 10, 2012. In this inspection report, the NRC issued Unresolved Item 05000416/2012008-07, "Potential Internal Flooding Caused by Circulation Water System Failure." This unresolved item was related to the licensee's evaluation of internal flooding events resulting from the postulated failure of circulating water system components in the turbine building Calculation M6.3.051, "Circulating Water System-Calculate Revised Plant Flooding Elevations Due to Aux Cooling Tower," Revision B. Specifically, the licensee's design basis flooding analysis was based on a steady state comparison of the volume of the circulating water system to the available volume in the unit 1 turbine building, the canceled unit 2 turbine building, the radwaste building, and control building. The inspectors determined this analysis failed to consider the effects of large sliding doors, which are not watertight when closed, between the unit 1 turbine building and the unit 2 turbine building and between the unit 1 turbine building and radwaste building. It also failed to consider closed nonwatertight doors between unit 1 turbine building and the control building. Additionally, it failed to include the contribution of makeup flow from plant service water. With the assumption that the doors are closed and won't fail, the inspectors questioned whether the flood level in the unit 1 turbine building could increase to levels that would affect adjacent auxiliary building and control building rooms that contain safety-related equipment.

During the component design bases inspection, the licensee performed Calculation M6.3.051-001, "Circulating Water Systems – Calculate Revised Unit 1 Turbine Building and Unit 1 Control Building Flooding Elevations," Revision 0, to correct deficiencies with the original internal flood analysis (Condition Report CR-GGN-2012-09424). This analysis concluded that, with closed doors and contribution of plant service water, the water level in the unit 1 turbine building would increase, but the increase would not affect safety-related equipment in the adjacent auxiliary and control building rooms. Although the analysis concluded that plant protection from internal floods would not be adversely affected, the inspectors disagreed with the assumption for flowrate from a postulated expansion joint failure in the circulating water system. The calculation used the methodology of NRC Branch Technical Position MEB 3-1 to predict the maximum flow from a failed circulating water system expansion joint. Applying the MEB 3-1 methodology to the 10-foot diameter expansion joint resulted in a postulated crack of 5-feet long and 1-inch wide. This crack

resulted in a calculated leak rate of approximately 15,500 gallons per minute. The inspectors questioned the applicability of NRC Branch Technical Position MEB 3-1 to nonsafety-related expansion joints and whether the crack leak rate should be significantly higher if a gross failure was assumed in the updated final safety analysis report. The inspectors discussed this design and licensing basis issue with NRC staff in the Office of Nuclear Reactor Regulation. Due to complexity of establishing the appropriate design and licensing bases for this issue, this item was considered unresolved pending further NRC review to determine if a finding existed.

On November 15, 2012, the inspectors completed an internal flooding inspection, as documented in Section 1R06 of this report. During the inspection, the inspectors toured the circulating water system, including the circulating water pumps, from the cooling tower to the unit 1 condenser. The inspection included a visual inspection of the doors connecting the unit 1 turbine building to adjacent buildings, including complete inspection of the flood barriers connecting the unit 1 turbine building to the auxiliary building.

Additionally, during this inspection, the inspector requested the licensee perform an internal flood analysis assuming the expansion joint failure leak rate was 290,000 gallons per minute. This represented a complete failure of the expansion joint and runout flow of the circulating water system pumps. This analysis concluded that the water level in the unit 1 turbine building would increase, but the increase would not affect safety-related equipment in the adjacent auxiliary and control building rooms.

From the review, the inspectors determined that the auxiliary building flood barriers would mitigate affects of an internal flood. Additionally, the inspectors determined that it is very unlikely that a failure of the expansion joint would discharge the entire volume of water of the circulating water system assumed in the internal flood analysis based on the configuration and operation of the circulating water system. That is, the circulating water system is an open system; when the system loses vacuum, the deep draft pumps would shut down leaving a large water volume in the circulating water system basin and only contents in the circulating water system pipe would drain through the failed expansion joint.

Since the inspectors confirmed that safety-related equipment would not be affected, assuming the maximum expansion joint failure leak rate and flood barriers would protect the auxiliary building, the inspectors did not identify a finding. Therefore, Unresolved Item 05000416/2012008-07, “Potential Internal Flooding Caused by Circulation Water System Failure,” is closed.

b. Findings

No findings were identified.

.5 Temporary Instruction 2515/187 – Inspection Near Term Task Force Recommendation 2.3 Flooding Walkdowns

a. Inspection Scope

Inspectors verified that the licensee's walkdown packages, WP1, WP2, WP6, and WP7 contained the elements as specified in NEI 12-07 Walkdown Guidance document. The inspectors accompanied the licensee on their walkdown of the plant yard topography inside the protected area and the safety related switchgear room on the 111 ft. elevation in the control building and verified that the licensee confirmed the following flood protection features:

- Visual inspection of the flood protection feature was performed if the flood protection feature was relevant. External visual inspection for indications of degradation that would prevent its credited function from being performed was performed
- Critical SSC dimensions
- Available physical margin, where applicable, was determined
- Flood protection feature functionality was determined using either visual observation or by review of other documents

The inspectors independently performed their walkdown and verified that the following flood protection features were in place:

- Plant yard grade at the 133 ft. elevation of the control building was such that water would be shed away from the building
- Staged sandbags were properly stored and in good material condition
- Reasonable simulation building sandbag flood barrier

The inspectors verified that noncompliances with current licensing requirements and issues identified in accordance with the 10 CFR 50.54(f) letter, Item 2.g of Enclosure 4, were entered into the licensee's corrective action program. In addition, issues identified in response to Item 2.g that could challenge risk significant equipment and the licensee's ability to mitigate the consequences will be subject to additional NRC evaluation.

b. Findings

No NRC-identified or self-revealing findings were identified.

.6 Temporary Instruction 2515/188 – Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdowns

The inspectors accompanied the licensee on their seismic walkdowns of the following areas and equipment:

Date	Building	Elevation	Area	Equipment
09/18/2012	Diesel Generator Building	136 ft	1D308	Control Panel H13P401
10/05/2012	Auxiliary Building	93 ft	1A106	E12B002B
10/09/2012	Control Building	189 ft	OC703	Control Panel H13P669
10/09/2012	Control Building	189 ft	OC703	E51N602A

The inspectors verified that the licensee confirmed that the following seismic features associated with listed equipment were free of potential adverse seismic conditions such as:

- Anchorage was free of bent, broken, missing, or loose hardware
- Anchorage was free of corrosion that is more than mild surface oxidation
- Anchorage was free of visible cracks in the concrete near the anchors
- Anchorage configuration was consistent with plant documentation
- SSCs will not be damaged from impact by nearby equipment of structures
- Overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls are secure and not likely to collapse onto the equipment
- Attached lines have adequate flexibility to avoid damage
- The area appears to be free of potentially adverse seismic interactions that could cause a fire in the area
- The area appears to be free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g. scaffolding, lead shielding)

The inspectors independently performed their walkdown and verified that the equipment and areas listed in Table 2 were free of potential adverse seismic conditions as described above.

Date	Building	Elevation	Area	Equipment
10/18/2012	SSW Pump Building	133 ft	2M110	Y47N005B
11/28/2012	Auxiliary Building	93 ft	1A104	E51F046

Observations made during the walkdown that could not be determined to be acceptable were entered into the licensee's corrective action program for evaluation.

Additionally, inspectors verified that items that could allow the spent fuel pool to drain down rapidly were added to the SWEL and these items were walked down by the licensee.

b. Findings

No NRC-identified findings or self-revealing findings were identified.

4OA6 Meetings, Including Exit

Exit Meeting Summary

On January 17, 2013, the inspectors presented the inspection results to Mr. Kevin Mulligan, Site Vice President of Operations, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On December 3, 2012, the inspector presented the results of the radiation safety inspection to Ms. C. Perino, Director of Nuclear Safety Assurance, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

4OA7 Licensee-Identified Violations

The following violation of very low security significance (Green) was identified by the licensee and is a violation of NRC requirements which met the criteria of NRC Enforcement Policy for being dispositioned as a non-cited violation.

10 CFR 74.19 requires, in part, that each licensee keep records of inventory including location, transfer, and disposal of all special nuclear material and conduct an annual physical inventory of all special nuclear material in its possession. Contrary to the above, before July 25, 2012, the licensee did not keep records of inventory including location, transfer, and disposal of all special nuclear material, in that on that date and after completing an inventory and records review of SNM pursuant to the material control and accounting program, licensee reactor engineers declared a source range monitor (SRM) detector lost. Specifically, SRM with serial number 1OF007J5 was not in its expected storage location. Using Manual Chapter 0609, Appendix D,

“Public Radiation Safety Significance Determination Process,” the inspectors determined that this finding had very low safety significance (Green) because it resulted in no dose to a member of the public in the restricted area, controlled area or the unrestricted area.

Attachment 1: SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

J. Dorsey, Security Manager
H. Farris, Assistant Operations Manager
J. Gerard, Interim Operations Manager
J. Giles, Manager, Training
M. Krupa, Director, Major Projects
C. Justiss, Licensing
C. Lewis, Manager, Emergency Preparedness
E. Mason, Auditor, Quality Assurance
J. Miller, General Plant Manager
R. Miller, Manager, Radiation Protection
K. Mulligan, Site Vice President Operations
L. Patterson, Manager, Program Engineering
C. Perino, Director, Nuclear Safety Assurance
J. Richardson, Director, Power Upgrade Project
R. Scarbrough, Specialist and Lead Offsite Liaison, Licensing
J. Seiter, Acting Manager, Licensing
J. Shaw, Manager, System Engineering
T. Thurmon, Supervisor, Design Engineering-Mechanical
T. Trichell, Manager, Radiation Protection
D. Wiles, Engineering Director
E. Wright, Supervisor, ALARA

NRC Personnel

None

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000416/2012005-01	NCV	Failure to Make Timely Corrective Actions to Repair the Degraded Auxiliary Building Water Intrusion Barrier (Section 1R12.b.1)
05000416/2012005-02	NCV	Failure to Adequately Monitor the Condition of the Auxiliary Building Water Intrusion Barrier (Section (1R12.b.2)
05000416/2012005-03	NCV	Failure to Implement Adequate Procedure Instructions to Perform Preventive Maintenance Requiring the Periodic Replacement of the Control Relays in GE Magne Blast Circuit Breakers (Section 1R20.b)
05000416/2012005-04	FIN	Failure to Adequately Plan and Control Work Activities to Maintain ALARA (Section 2RS02.b.1)
05000416/2012005-05	NCV	Failure To Follow the Radiation Work Permit Requirements During Reactor Cavity High Water Operations (Section 2RS02.b.2)
05000416/2012005-06	NCV	Failure to Evaluate the Risk Significances and Develop Action Plans to Address Equipment Identified During Extent of Condition Review for a Post Scram Root Cause Analysis (Section 4A03.2.b)
05000416/2012005-07	NCV	Failure to Establish Gain Settings on APRM and LPRM Instruments in Accordance with Design Requirements (Section 4A03.5.b)
TI 2515/187		Inspection Near Term Task Force Recommendation 2.3 Flooding Walkdowns (Section 4OA5.5)
TI 2515/188		Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdowns (Section 4OA5.6)

Closed

05000416/2012008-07	URI	Potential Internal Flooding Caused by Circulation Water System Failure (Section 4OA5.4)
05000416/2012-001-00	LER	Surveillance Test Procedure Inadequate to Meet the Requirements of Technical Specifications (Section 4OA3.1)
05000416/2012-002-00	LER	Manual Reactor Scram Due to a Steam Supply Motor Operated Valve Failure that Resulted in the Inability to Maintain Reactor Water Level (Section 4OA3.2)
05000416/2012-003-00	LER	ESF Actuation Due to Division III Bus Undervoltage following a Lighting Strike (Section 4OA3.3)
05000416/2012-004-00	LER	Weld Defect Indication Found in Residual Heat Removal System to Reactor Pressure Vessel Boundary Nozzle (Section 4OA3.4)

Closed

05000416/2012-005-00	LER	Average Power Range Monitors Inoperable in Excess of Technical Specification Allowances in Mode 2 (Section 4OA3.5)
05000416/2012-006-00	LER	Special Nuclear Material Inventory Discrepancy (Section 4OA3.6)
05000416/2012-007-00	LER	Standby Service Water System Administratively Inoperable For A Period Longer Than Allowed By Technical Specifications (Section 4OA3.7)

LIST OF DOCUMENTS REVIEWED

Section 1R04: Equipment Alignment

PROCEDURE

NUMBER	TITLE	REVISION
04-1-01-P75-1	Standby Diesel Generator System	96
04-1-01-P41-1	Standby Service Water System	136
04-1-01-E12-1	System Operating Instruction, Residual Heat Removal System	142

DRAWINGS

NUMBER	TITLE	REVISION
M-1085D	Residual Heat Removal System	4

OTHER DOCUMENTS

NUMBER	TITLE	DATE
	System Health Report E12 Residual Heat Removal	November 16, 2012

CONDITION REPORTS

CR-GGN-2005-03708	CR-GGN-2005-03838	CR-GGN-2005-05026
CR-GGN-2005-05042	CR-GGN-2012-05501	CR-GGN-2012-10989
CR-GGN-2012-06866	CR-GGN-2012-09577	CR-GGN-2012-11077
CR-GGN-2012-07028	CR-GGN-2012-09842	CR-GGN-2012-11081
CR-GGN-2012-07030	CR-GGN-2012-10054	CR-GGN-2012-11126
CR-GGN-2012-07342	CR-GGN-2012-10055	CR-GGN-2012-11265
CR-GGN-2012-07602	CR-GGN-2012-10365	CR-GGN-2012-11441
CR-GGN-2012-07633	CR-GGN-2012-10372	CR-GGN-2012-11511
CR-GGN-2012-07738	CR-GGN-2012-10377	CR-GGN-2012-11513
CR-GGN-2012-07739	CR-GGN-2012-10404	CR-GGN-2012-11514
CR-GGN-2012-07792	CR-GGN-2012-10406	CR-GGN-2012-11516
CR-GGN-2012-08733	CR-GGN-2012-10447	CR-GGN-2012-11537
CR-GGN-2012-08896	CR-GGN-2012-10461	CR-GGN-2012-11581

CONDITION REPORTS

CR-GGN-2012-08906	CR-GGN-2012-10556	CR-GGN-2012-11784
CR-GGN-2012-09028	CR-GGN-2012-10584	CR-GGN-2012-11785
CR-GGN-2012-09257	CR-GGN-2012-10603	CR-GGN-2012-11968
CR-GGN-2012-09309	CR-GGN-2012-10617	CR-GGN-2012-11987
CR-GGN-2012-09493	CR-GGN-2012-10675	CR-GGN-2012-11991
CR-GGN-2012-09513	CR-GGN-2012-10944	CR-GGN-2012-11993
CR-GGN-2012-09535	CR-GGN-2012-09380	CR-GGN-2012-11362
CR-GGN-2012-06676	CR-GGN-2012-09494	CR-GGN-2012-11365
CR-GGN-2012-06981	CR-GGN-2012-09699	CR-GGN-2012-11445
CR-GGN-2012-07273	CR-GGN-2012-09825	CR-GGN-2012-11487
CR-GGN-2012-07400	CR-GGN-2012-09840	CR-GGN-2012-11644
CR-GGN-2012-07891	CR-GGN-2012-09855	CR-GGN-2012-11820
CR-GGN-2012-07961	CR-GGN-2012-09889	CR-GGN-2012-11931
CR-GGN-2012-08019	CR-GGN-2012-09989	CR-GGN-2012-11936
CR-GGN-2012-08599	CR-GGN-2012-10000	CR-GGN-2012-11941
CR-GGN-2012-08621	CR-GGN-2012-10097	CR-GGN-2012-11947
CR-GGN-2012-08649	CR-GGN-2012-10548	CR-GGN-2012-11949
CR-GGN-2012-08651	CR-GGN-2012-10558	CR-GGN-2012-11951
CR-GGN-2012-08833	CR-GGN-2012-10574	CR-GGN-2012-11952
CR-GGN-2012-08899	CR-GGN-2012-10797	CR-GGN-2012-11953
CR-GGN-2012-09022	CR-GGN-2012-10882	CR-GGN-2012-11955
CR-GGN-2012-09033	CR-GGN-2012-11184	CR-GGN-2012-11977
CR-GGN-2012-09034	CR-GGN-2012-11272	CR-GGN-2012-11981
CR-GGN-2012-09107	CR-GGN-2012-11337	CR-GGN-2012-11982

Section 1R05: Fire Protection

PROCEDURES

NUMBER	TITLE	REVISION
Fire Pre Plan C-17	Upper Relay Room – Unit 1 Area 25A	

Section 1R05: Fire Protection

PROCEDURES

NUMBER	TITLE	REVISION
04-1-01-P64-3	Fire Protection Cardox System	26
GGNS MS-55	GGNS Mechanical Standard GGNS TRM Required Fire Rated Floor, Walls & Ceilings	0
Fire Pre-Plan SSW-01	SSW Pump House and Valve Room, Room 1M110-SSW A Pump House Room 1M112-SSW A Valve Room	1
Fire Pre-Plan DG-02	DIV I Diesel Generator Room 1D302, Area 12, Elevation 133	5
Fire Pre-Plan A-03	RCIC Pump Room – 1A104	1

OTHER DOCUMENTS

NUMBER	TITLE	DATE
2012-08	Transient Combustible Evaluation	
9A.5.64	GG UFSAR Fire Area 64	
9A.5.60.1	GG UFSAR Fire Area 60	
	Chemetron Fire Systems Manual	January 8, 1979
9A.5.2.4	Fire Zone 1A104: RCIC Room, Elev. 93’ 0”	

DRAWINGS

NUMBER	TITLE	REVISION
A-629	Unit I and Common Buildings Fire Protection Misc. Notes and Details	0
E-0965	Raceway Plan Water Treatment Building El. 133’0” and STDBY Water Pump HS Basin A & B Fire and Smoke Detection System Units I & II	7

CALCULATION

NUMBER	TITLE	DATE
MC-QSP64-86058	Fire Zone Yard/Fire Area 59	June 13, 2001

CONDITION REPORTS

CR-GGN-2012-11435 CR-GGN-2009-05026

Section 1R06: Flood Protection Measures

PROCEDURES

NUMBER	TITLE	REVISION
05-1-02-VI-1	Off-Normal Event Procedure Flooding	109
04-1-02-1H13-P680-8A1-C1	Alarm Response Instruction, Turbine Building E Floor Drain Sump Level Hi-Hi	100
04-1-02-1H13-P680-8A1-B1	Alarm Response Instruction, Turbine Building W Equipment Drain Sump Level Hi-Hi	100
04-1-02-1H13-P680-8A1-A1	Alarm Response Instruction, Turbine Building E Equipment Drain Sump Level Hi-Hi	100
04-1-02-1H13-P680-8A1-D1	Alarm Response Instruction, Turbine Building W Floor Drain Sump Level Hi-Hi	100
04-1-02-1H13-P870-6A-G1	Alarm Response Instruction, Circulating Water Expansion Joint Seal Level Hi	113

CALCULATIONS

NUMBER	TITLE	REVISION
M6.3.051	Circulating Water System – Calculate Revised Plant Flooding Elevations Due to the Aux Cooling Tower	B
M6.3.043	Circulating Water System – Calculate Water Volume of Circulating Water System	C

CALCULATIONS

NUMBER	TITLE	REVISION
M6.3.051-001	Circulating Water Systems – Calculate Revised Unit 1 Turbine Building and Unit 1 Control Building Flooding Elevations	0

DRAWINGS

NUMBER	TITLE	REVISION
C-1706C	Unit 1 & 2 Circulating Water System Circulating Water Piping Sections and Details	11
M154.0-N1N71G521A-1.2-006	Garlock Style 204 & 204HP Expansion Joints	1
M-1059A	P&I Diagram, Circulation Water System	41
M-1059B	P&I Diagram, Circulating Water System, Unit 1	18
SFD-1059	System Flow Diagram, Circulating Water System, Unit 1	2
A-0010	Units 1 & 2 General Floor Plan, Fl. Plan at El. 93’-0” & 103’-0”	10
A-0011	Units 1 & 2 Gen. Fl. Plan. – Fl. Plan at El. 111’-0”, 113’-0”, 118’-0”, & 119’-0”	8
E-1152-033	Schematic Diagram, Circulating Water System, Main Control Room Annunciation, Unit 1	14

ENGINEERING CHANGES

NUMBER	TITLE	REVISION

ENGINEERING CHANGES

NUMBER	TITLE	REVISION
EC 38959	Calculate Revised Unit 1 Turbine Building and Unit 1 Control Building Flooding Elevations	0

VENDOR DOCUMENTS

NUMBER	TITLE	REVISION
9645-A-021.0	Bechtel Material Requisition – Watertight Doors	8

WORK ORDERS

WO 52306120 01	WO 52323476 01	WO 52323703 01

CONDITION REPORTS

CR-GGN-2012-09424	CR-GGN-2012-12448	CR-GGN-2012-12449

Section 1R11: Licensed Operator Requalification Program

PROCEDURES

NUMBER	TITLE	REVISION
03-1-01-2	Integrated Operating Instruction Power Operations	152
EN-RE-215	Reactivity Maneuver Plan (BWR)	1
EN-RE-215	Reactivity Maneuver Plan	1

OTHER DOCUMENTS

NUMBER	TITLE	REVISION / DATE
	2012 Cycle 6 Licensed Operator Requal Simulator Training Plan Simulator Differences	
GSMS-LOR-WEX17	LOR Training APRM Downscale/Loss of Condenser Vacuum/LOCA/Degraded ECCS (EP-2, EP-3)	18

OTHER DOCUMENTS

NUMBER	TITLE	REVISION / DATE
Grand Gulf Cycle 19	Periodic Log	November 20, 2012

Section 1R12: Maintenance Effectiveness

PROCEDURES

NUMBER	TITLE	REVISION / DATE
GGNS-C-399.0	Maintenance Rule Inspection of Structures, Tanks, and Transformers Inspections	9
EN-DC-204	Maintenance Rule Scope and Basis	2
EN-DC-150	Condition Monitoring of Maintenance Rule Structures	2
EN-DC-203	Maintenance Rule Program	1
EN-DC-205	Maintenance Rule Monitoring	4
EN-DC-206	Maintenance Rule (a)(1) Process	1

OTHER DOCUMENTS

NUMBER	TITLE	REVISION / DATE
EQ04.10	9kV Power Cable	1
ER-GG-2005-0144-000	Evaluate Water Inleakage into the Enclosure Bldg.	0
GGNS-96-0075	Assessment of Grand Gulf Compliance with the Guidelines of NEI 96-03, Rev. D and the Maintenance Rule for Monitoring the Condition of Structures	2
EN-DC-205, Attachment 9.1	Maintenance Rule Functional Failure Evaluation, CR-GGN-2012-08921 CA 00051	October 5, 2012

CONDITION REPORTS

CR-GGN-2004-01732	CR-GGN-2005-01165	CR-GGN-2005-02254
CR-GGN-2007-05125	CR-GGN-2007-05143	CR-GGN-2008-00828
CR-GGN-2010-07623	CR-GGN-2010-08332	CR-GGN-2012-11767

CONDITION REPORTS

CR-GGN-2012-11740	CR-GGN-1997-00841	CR-GGN-2005-01294
CR-GGN-2009-01302	CR-GGN-2009-01630	CR-GGN-2010-00863
CR-GGN-2011-00360	CR-GGN-2011-01595	CR-GGN-2012-10323
CR-GGN-2011-00403	CR-GGN-2012-00525	CR-GGN-2012-07736
CR-GGN-2011-00749	CR-GGN-2012-00827	CR-GGN-2012-07829
CR-GGN-2011-00789	CR-GGN-2012-01486	CR-GGN-2012-07832
CR-GGN-2011-00791	CR-GGN-2012-03280	CR-GGN-2012-08225
CR-GGN-2011-00819	CR-GGN-2012-03839	CR-GGN-2012-08584
CR-GGN-2011-00820	CR-GGN-2012-04274	CR-GGN-2012-08625
CR-GGN-2011-00850	CR-GGN-2012-04292	CR-GGN-2012-08742
CR-GGN-2011-00985	CR-GGN-2012-04419	CR-GGN-2012-08897
CR-GGN-2011-01306	CR-GGN-2012-04437	CR-GGN-2012-09087
CR-GGN-2011-01710	CR-GGN-2012-04478	CR-GGN-2012-09273
CR-GGN-2011-01942	CR-GGN-2012-04584	CR-GGN-2012-09291
CR-GGN-2011-02393	CR-GGN-2012-04668	CR-GGN-2012-09510
CR-GGN-2011-03391	CR-GGN-2012-04773	CR-GGN-2012-09671
CR-GGN-2011-04582	CR-GGN-2012-04900	CR-GGN-2012-09785
CR-GGN-2011-05213	CR-GGN-2012-05083	CR-GGN-2012-10305
CR-GGN-2011-05446	CR-GGN-2012-05304	CR-GGN-2012-11309
CR-GGN-2011-05808	CR-GGN-2012-05501	CR-GGN-2012-11311
CR-GGN-2011-06528	CR-GGN-2012-05550	CR-GGN-2012-11312
CR-GGN-2011-06563	CR-GGN-2012-05557	CR-GGN-2012-11313
CR-GGN-2011-06972	CR-GGN-2012-05654	CR-GGN-2012-11315
CR-GGN-2011-07724	CR-GGN-2012-05820	CR-GGN-2012-11328
CR-GGN-2011-08175	CR-GGN-2012-05839	CR-GGN-2012-11415
CR-GGN-2011-08187	CR-GGN-2012-05846	CR-GGN-2012-11611

CONDITION REPORTS

CR-GGN-2011-08198	CR-GGN-2012-05949	CR-GGN-2012-11755
CR-GGN-2011-09249	CR-GGN-2012-05973	CR-GGN-2012-12098
CR-GGN-2012-00038	CR-GGN-2012-06021	CR-GGN-2012-12391
CR-GGN-2012-00148	CR-GGN-2012-06132	CR-GGN-2012-06265
CR-GGN-2011-03391	CR-GGN-2012-00303	CR-GGN-2011-00070
CR-GGN-2010-00501	CR-GGN-2011-02621	CR-GGN-2012-01222
CR-GGN-2010-00690	CR-GGN-2011-02781	CR-GGN-2012-01541
CR-GGN-2010-00869	CR-GGN-2011-03103	CR-GGN-2012-03080
CR-GGN-2010-00895	CR-GGN-2011-03370	CR-GGN-2012-03278
CR-GGN-2010-01039	CR-GGN-2011-03394	CR-GGN-2012-03289
CR-GGN-2010-01381	CR-GGN-2011-03437	CR-GGN-2012-03290
CR-GGN-2010-01608	CR-GGN-2011-03804	CR-GGN-2012-03988
CR-GGN-2010-01646	CR-GGN-2011-04596	CR-GGN-2012-04241
CR-GGN-2010-01935	CR-GGN-2011-05352	CR-GGN-2012-04808
CR-GGN-2010-01964	CR-GGN-2011-06275	CR-GGN-2012-05074
CR-GGN-2010-02111	CR-GGN-2011-06290	CR-GGN-2012-05381
CR-GGN-2010-02304	CR-GGN-2011-08150	CR-GGN-2012-05659
CR-GGN-2010-02320	CR-GGN-2011-08617	CR-GGN-2012-05958
CR-GGN-2010-02587	CR-GGN-2011-08683	CR-GGN-2012-08069
CR-GGN-2010-02679	CR-GGN-2011-08806	CR-GGN-2012-09008
CR-GGN-2010-03097	CR-GGN-2011-08860	CR-GGN-2012-10348
CR-GGN-2010-04544	CR-GGN-2011-08986	CR-GGN-2012-10937
CR-GGN-2010-04920	CR-GGN-2011-08987	CR-GGN-2012-11224
CR-GGN-2010-06589	CR-GGN-2011-09170	CR-GGN-2012-11262
CR-GGN-2010-07439	CR-GGN-2011-09335	CR-GGN-2012-11333
CR-GGN-2010-08449	CR-GGN-2012-00498	CR-GGN-2012-11390

CONDITION REPORTS

CR-GGN-2010-08534	CR-GGN-2012-00538	CR-GGN-2012-12323
CR-GGN-2010-08654	CR-GGN-2012-00623	CR-GGN-2012-12324
CR-GGN-2011-00226	CR-GGN-2012-00653	CR-GGN-2012-01176
CR-GGN-2011-00710	CR-GGN-2012-00708	CR-GGN-2011-02441
CR-GGN-2011-00795	CR-GGN-2012-00791	CR-GGN-2011-02254
CR-GGN-2011-01077	CR-GGN-2012-01071	CR-GGN-2012-01142
CR-GGN-2011-01534	CR-GGN-2012-01126	CR-GGN-2012-01160
CR-GGN-2012-01176	CR-GGN-2012-01222	CR-GGN-2012-12323
CR-GGN-2012-12324	CR-GGN-2012-00303	CR-GGN-2012-11408
CR-GGN-2012-12286		

WORK ORDERS

WO 68420	WO 52266186

Section 1R13: Maintenance Risk Assessment and Emergent Work Controls

PROCEDURES

NUMBER	TITLE	REVISION / DATE
02-S-01-17	Control of Limiting Conditions for Operation	123
EN-WM-101	Online Emergent Work Add/Delete Approval Form	November 1, 2012
07-S-02-300	Fuel and Core Component Movement Control	125
07-S-05-300	Control and Use of Cranes and Hoists	113
EN-MA-119	Material Handling Program	13
05-1-02-V-12	Off-Normal Event Procedure, Condensate/Reactor Water High Conductivity	25
EN-WM-101	Attachment 9.1 Online Emergent Work Add/Delete Approval Form, WO 52313215	9
01-S-18-6, Attachment VI	Risk Assessment of Maintenance Activities	119
02-S-01-41	On Line Risk Assessment	7

OTHER DOCUMENTS

NUMBER	TITLE	DATE
	LCOTR No.:1-TS-12-0290	
	LCOTR No.:1-TS-12-0228	
	LCOTR No.:1-TS-12-0261	
	Shutdown Condition 1, Mode: 4, State: Cold S/D, Fuel Status: Fueled	December 9, 2012 9:34 pm
	Shutdown Condition 1, Mode: 4, State: Cold S/D, Fuel Status: Fueled	December 10, 2012 7 am
	Shutdown Condition 1, Mode: 4, State: Cold S/D, Fuel Status: Fueled	December 10, 2012 10:56 am
	Shutdown Condition 1, Mode: 4, State: Cold S/D, Fuel Status: Fueled	December 10, 2012 3:45 pm
	Shutdown Condition 1, Mode: 4, State: Cold S/D, Fuel Status: Fueled	December 10, 2012 7:50 pm
	Shutdown Condition 1, Mode: 4, State: Cold S/D, Fuel Status: Fueled	December 11, 2012 7:20 pm
	Shutdown Condition 1, Mode: 4, State: Cold S/D, Fuel Status: Fueled	December 12, 2012 8:07 pm
	Shutdown Condition 1, Mode: 4, State: Cold S/D, Fuel Status: Fueled	December 12, 2012 10 pm
	Shutdown Condition 1, Mode: 4, State: Cold S/D, Fuel Status: Fueled	December 13, 2012 1:02 am
	Shutdown Condition 1, Mode: 4, State: Cold S/D, Fuel Status: Fueled	December 13, 2012 1:35 am

CONDITION REPORTS

CR-GGN-2012-11938

WORK ORDERS

WO 282280	WO 00134296	WO 278119
WO 324956	WO 52342882	WO 52353819
WO 0322617		

ENGINEERING CHANGES

EC No. 39577	EC No. 41383

Section 1R15: Operability Evaluations

PROCEDURE

NUMBER	TITLE	REVISION
EN-OP-104	Operability Determination Process: CR-GGN-2012-12133	6

OTHER DOCUMENTS

NUMBER	TITLE	DATE
460000286	Limitorque Valve Controls	July 16, 2007
	ASM Handbook, Volume 13A – Corrosion: Fundamentals, Testing, and Protection	2003
	Structural Analysis and design of Process Equipment, 2nd Edition	1989
	Eddie Current Test Data for Div II Emergency Diesel Generator Jacket Water Heat Exchanger	November 1, 2012
	NRC Regulatory Guide 1.9	March 2007
	NRC Regulatory Guide 1.32	February 1977

DRAWINGS

NUMBER	TITLE	REVISION
E-1111-013	P75 Stand-by Diesel Generator SYS DIV II Train B Start Circuit	16
E-1111-012	P75 Stand-by Diesel Generator SYS DIV II Train A Start and Stop Circuit	13

DRAWINGS

NUMBER	TITLE	REVISION
Figure 1	Boundary and Support Systems of Emergency Diesel Generator Systems	4

CALCULATIONS

NUMBER	TITLE	REVISION / DATE
MC-Q1P75-98030	Standby Diesel Jacket Water Operating Parameters	1

CONDITION REPORTS

CR-GGN-2012-12060	CR-GGN-2012-12133	CR-GGN-2012-11755

ENGINEERING CHANGES

EC No. 40834	EC No. 40821	EC No. 40897

Section 1R19: Post-Maintenance Testing

PROCEDURES

NUMBER	TITLE	REVISION
07-S-23-P75-2	Diesel Generator DIV I and DIV II Functional Check Overspeed Trip Switch and Emergency Stop Switch	2
06-OP-1P41-Q-005	Standby Service Water Loop B Valve and Pump Operability Test	122
06-OP-1E12-Q-0006	LPCI/RHR Subsystem B MOV Functional Test	111
06-OP-1E12-M-0002	LPCI/RHR Subsystem B Monthly Functional Test	113
06-OP-1E12-Q-0024	LPCI/RHR Subsystem B Quarterly Functional Test	118
06-0P-1P41-M-0005	SSW Loop B Operability Check	112
06-OP-1P75-M-0002, Attachment	Standby Diesel Generator 12 Functional Test	131

Section 1R19: Post-Maintenance Testing

PROCEDURES

NUMBER	TITLE	REVISION
II		
06-OP-1P75-M-0002, Attachment I	Standby Diesel Generator 12 Functional Test	131
04-1-03-P75-1	Div 2 Diesel Generator Unexcited Run	7

OTHER DOCUMENTS

NUMBER	TITLE	DATE
	Open Documents on LCO's for Diesel Generator 12	November 5, 2012
	Analysis for Static Test of Gate and Globe Valves, Valve 1P41F016B	
	MOV Torque Switch Setpoint Methodology Set Point Calculations, Valve No. 1P41F016B	
	MOV Torque Switch Setpoint Methodology Set Point Calculations, Valve No. 1E12F006B	
	Preliminary Vibration Data on SSW B	
41329	Stator Winding Test Report, Grand Gulf SSW Pump	
GNRO-2012-00007	Reply to Notice of Violation EA-2012-015	February 13, 2012
TR-110392	Eddy Current Testing of Service Water Heat Exchangers for Engineers Guideline	February 1999
	ASM Handbook, Vol. 13A-Corrosion: Fundamentals, Testing, Protection	2003

WORK ORDERS

WO 00121405 01	WO 00282241 01	WO 00314300 01
WO 00319437 01	WO 00318398 01	WO 00320182 02
WO 52421359 01	WO 00272998 01	WO 00272998 04
WO 00082560 04	WO 00082560 01	WO 00082560 03
WO 00082560 08	WO 00332736 01	

CONDITION REPORTS

CR-GGN-2012-11949 CR-GGN-2012-

Section 1R20: Refueling and Other Outage Activities

PROCEDURES

NUMBER	TITLE	REVISION
PO 19-01	Shutdown Operations Protection Plan: December 17, 2012	13
07-S-12-150	General Electric AM 4.16 KV Breaker Overhaul Instruction	0
07-S-12-61	Inspection of GE Magne Blast Circuit Breakers	3
07-S-12-61	Inspection of GE Magne Blast Circuit Breakers	4
07-S-12-150	General Electric AM 4.16 KV Breaker Overhaul Instruction	1

DRAWINGS

NUMBER	TITLE	REVISION
E-1188-018	Schematic Diagram, HPCS Power supply System Breaker No.1	11
E-1009	One Line Meter & Relay Diagram 4.16KV E.S.F. System Bus 17AC	9

OTHER DOCUMENTS

NUMBER	TITLE	REVISION / DATE
GG19-013	December Startup Power Profile	
GG19-014	December Startup Power Profile	
	PO-19-01 Critical Path	December 9, 2012
	PO-19-01 Critical Path	December 10, 2012

OTHER DOCUMENTS

NUMBER	TITLE	REVISION / DATE
	PO-19-01 Critical Path	December 11, 2012
	PO-19-01 Critical Path	December 12, 2012
	GGNS PO-19-01 Planned Outage Daily Update	December 10, 2012
	GGNS PO-19-01 Planned Outage Daily Update	December 11, 2012
	GGNS PO-19-01 Planned Outage Daily Update	December 12, 2012
	GGNS PO-19-01 Planned Outage Daily Update	December 13, 2012
	LT-Apparent Cause Evaluation Report: Failure of the Division III Diesel Generator's Output Breaker to Close	June 27, 2012
GEK-7320F	Instruction, Magne Blast Circuit Breaker Types AM-4.16-350-2C, AM-4.16-350-2H	F
PM Basis Template	EN-Switchgear-Medium Voltage-1KV to 7KV	3
	ACE Report CR-GGN-2012-07922 dated 06-27-2012	
1000011	Guidance on Overhaul of Magne-Blast Circuit Breakers	December 2000

CONDITION REPORTS

CR-GGN-2012-07922 CR-GGN-2012-07935

Section 1R22: Surveillance Testing

PROCEDURE

NUMBER	TITLE	REVISION
06-EL-1B21-Q-0001	ADS Timers Functional Test and Calibration	102

Section 1R22: Surveillance Testing

PROCEDURE

NUMBER	TITLE	REVISION
06-IC-1C71-Q-2003	Turbine Control Valve Fast Closure (RPS/EOC RPT) Functional Test	104

WORK ORDERS

WO 52439342 01	WO 52439341 01	WO 52439340 01

Section 1EP6: Drill Evaluation

PROCEDURES

NUMBER	TITLE	REVISION
10-S-01-1	Activation of the Emergency Plan	121

OTHER DOCUMENTS

NUMBER	TITLE	DATE
	Emergency Notification Form, Message Number 1	October 16, 2012
	GGNS-EP Group Drill, Emergency Facility Log	October 16, 2012
Attachment 2	Objectives/Evaluation Criteria, Performance Indicators	
Attachment 3	PCRS Items, Lessons Learned	
	Repair and Corrective Actions-Admin Status Board	October 16, 2012
	GGNS 2012 EP Drill (Blue Team)	October 16, 2012

CONDITION REPORTS

CR-GGN-2012-11584	CR-GGN-2012-11599	CR-GGN-2012-11601
CR-GGN-2012-11602	CR-GGN-2012-11623	CR-GGN-2012-11625
CR-GGN-2012-11626	CR-GGN-2012-11627	CR-GGN-2012-11630
CR-GGN-2012-11631	CR-GGN-2012-11632	CR-GGN-2012-11657
CR-GGN-2012-11658	CR-GGN-2012-11661	CR-GGN-2012-11683

Section 2RS02: Occupational ALARA Planning and Controls

PROCEDURES

NUMBER	TITLE	REVISION
EN-CY-112	BWR Shutdown and Startup Chemistry	0
EN-FAP-OU-100	Refueling Outage Preparation & Milestones	2
EN-MA-101	Conduct of Maintenance	3
EN-DC-115	Engineering Change Process	13
EN-RP-100	Radiation Worker Expectations	7
EN-RP-101	Access Control for Radiologically Controlled Areas	6
EN-RP-102	Radiological Control	3
EN-RP-108	Radiological Posting	11
EN-RP-110	ALARA Program	7
EN-RP-143	Source Control	9
EN-RP-151	Radiological Diving	2
EN-RP-201	Dosimetry Administration	3
EN-RP-202	Personnel Monitoring	8
EN-RP-204	Special Monitoring Requirements	6
EN-RP-503	Selection, Issue and Use of Respiratory Protection	5

AUDITS, SELF-ASSESSMENTS, AND SURVEILLANCES

NUMBER	TITLE	DATE
QA 14/15-2011	GGNS 2011 RP-RW Audit Report Final	November 30, 2011

CONDITION REPORTS

CR-GGN-2012-00109	CR-GGN-2012-00640	CR-GGN-2012-00971
CR-GGN-2012-01210	CR-GGN-2012-01212	CR-GGN-2012-01215
CR-GGN-2012-01656	CR-GGN-2012-01750	CR-GGN-2012-01977

CR-GGN-2012-04288	CR-GGN-2012-04504	CR-GGN-2012-04762
CR-GGN-2012-04944	CR-GGN-2012-05211	CR-GGN-2012-05239
CR-GGN-2012-05746	CR-GGN-2012-05807	CR-GGN-2012-06716
CR-GGN-2012-09064	CR-GGN-2012-12396	CR-GGN-2012-12400
CR-GGN-2012-01303	CR-GGN-2012-01514	CR-GGN-2012-09011
CR-GGN-2012-04830	CR-GGN-2012-04903	CR-GGN-2012-12401
CR-GGN-2012-00977	CR-GGN-2012-01133	CR-GGN-2012-09061
CR-GGN-2012-05320	CR-GGN-2012-05523	CR-GGN-2012-12405

RADIATION EXPOSURE PERMITS-ALARA POST-JOB REVIEWS

NUMBER	TITLE	REVISION
RWP-1086	Fuel Pool Cooling & Cleanup Modification	8
RWP-1402	Refuel Floor High Water	2
RWP-1403	Reactor Assembly/Disassembly	5
RWP-1406	Dryer/Separator Replacement	16
RWP-1505	Scaffold	2
RWP-1508	Under Vessel Activities	4
RWP-1511	General Drywell Maintenance	3
RWP-1516	In-Service Inspection	4

OTHER DOCUMENTS

NUMBER	TITLE	DATE
	5-Year Exposure Reduction Plan 2012-2016	
	Grand Gulf Refuel Outage18 Report	
	Temporary Shielding Request 08-2	
	Temporary Shielding Request 12-47	
	Temporary Shielding Request 12-50	
	Refuel Outage18 Detailed Water Plan	

OTHER DOCUMENTS

NUMBER	TITLE	DATE
Survey GG-1203-3444	185' Auxiliary South Side Elevation	March 27, 2012
Survey GG-1202-1383	208' Containment Auxiliary Platform	February 28, 2012
Survey GG-1202-1329	208' Containment Refuel Bridge	February 27, 2012

Section 2RS04: Occupational Dose Assessment (71124.04)

PROCEDURES

NUMBER	TITLE	REVISION
EN-RP-201	Dosimetry Administration	3
EN-RP-202	Personnel Monitoring	8
EN-RP-204	Special Monitoring Requirements	6
EN-RP-206	Dosimeter of Legal Record	7
EN-RP-503	Selection, Issue and Use of Respiratory Protection	5

AUDITS, SELF-ASSESSMENTS, AND SURVEILLANCES

NUMBER	TITLE	DATE
QA 14/15-2011	GGNS 2011 RP-RW Audit Report Final	November 30, 2011

OTHER DOCUMENTS

NUMBER	TITLE	DATE
11-02	ANI Information Bulletin: Neutron Monitoring	July 2012
	Dosimeter of Legal Record	November 26, 2012

CONDITION REPORT

CR-GGN-2012-01949	CR-GGN-2012-01960	CR-GGN-2012-02250
CR-GGN-2012-03738	CR-GGN-2012-4404	CR-GGN-2012-04524

CR-GGN-2012-06766	CR-GGN-2012-6700	CR-GGN-2012-4844
CR-GGN-2012-02727	CR-GGN-2012-03475	

Section 4OA1: Performance Indicator Verification

PROCEDURE

NUMBER	TITLE	REVISION
EN-LI-114	Performance Indicator Process	6

OTHER DOCUMENTS

NUMBER	TITLE	DATE
	NRC Performance Indicator Technique/Data Sheet, Heat Removal (RCIC/EFW/AFW)	4th Quarter 2011
	NRC Performance Indicator Technique/Data Sheet	1st Quarter 2012
	NRC Performance Indicator Technique/Data Sheet	2nd Quarter 2012
	NRC Performance Indicator Technique/Data Sheet	3rd Quarter 2012
	NRC Resident Questions about E51-RCIC MSPI Data	4th Quarter 2011-3rd Quarter 2012
	Surveillance Tests for RCIC/E51 System	
	NRC Performance Indicator Technique/Data Sheet, Residual Heat Removal (RHR)	4th Quarter 2011
	NRC Performance Indicator Technique/Data Sheet	1st Quarter 2012
	NRC Performance Indicator Technique/Data Sheet	2nd Quarter 2012
	NRC Performance Indicator Technique/Data Sheet	3rd Quarter 2012
	NRC Resident Questions about E12- Residual Heat Removal	4th Quarter 2011-3rd Quarter 2012
	Residual Heat Removal	4th Quarter 2011

OTHER DOCUMENTS

NUMBER	TITLE	DATE
	NRC Performance Indicator Technique/Data Sheet, High Pressure Injection (HPCS/HPCI/HPI/HPSI/FCI/HPI)	4th Quarter 2011
	NRC Performance Indicator Technique/Data Sheet, High Pressure Injection (HPCS/HPCI/HPI/HPSI/FCI/HPI)	1st Quarter 2012
	NRC Performance Indicator Technique/Data Sheet, High Pressure Injection (HPCS/HPCI/HPI/HPSI/FCI/HPI)	2nd Quarter 2012
	NRC Performance Indicator Technique/Data Sheet, High Pressure Injection (HPCS/HPCI/HPI/HPSI/FCI/HPI)	3rd Quarter 2012
	NRC Performance Indicator Technique/Data Sheet, Emergency AC Power (EDG)	4th Quarter 2011
	NRC Performance Indicator Technique/Data Sheet, Emergency AC Power (EDG)	1st Quarter 2012
	NRC Performance Indicator Technique/Data Sheet, Emergency AC Power (EDG)	2nd Quarter 2012
	NRC Performance Indicator Technique/Data Sheet, Emergency AC Power (EDG)	3rd Quarter 2012
	NRC Resident Questions about Division I and II Standby Diesel Generators	4th Quarter 2011-3rd Quarter 2012
	NRC Resident Questions about E22 High Pressure Core Spray	4th Quarter 2011-3rd Quarter 2012
	NRC Performance Indicator Technique/Data Sheet, Cooling Water Support	4th Quarter 2011
	NRC Performance Indicator Technique/Data Sheet, Cooling Water Support	1st Quarter 2012
	NRC Performance Indicator Technique/Data Sheet, Cooling Water Support	2nd Quarter 2012
	NRC Performance Indicator Technique/Data Sheet, Cooling Water Support	3rd Quarter 2012
	Operations Surveillances for Stand-by Service Water P41 System	

Section 4OA2: Identification and Resolution of Problems

PROCEDURES

NUMBER	TITLE	REVISION/ DATE
04-1-01-P44-1	Plant Service Water/Radial Well System	99
05-1-02-III-12	Off-Normal Event Procedure	0
EN-WM-100	Work Request Generation, Screening, and Classification	8
EN-FAP-OP-009	Tagging Performance Indicator Program	2
EN-LI-121	Entergy Trending Process	12
EN-WM-101	On-Line Work Management Process	9
EN-OP-117, Attachment 9.5	Operator Aggregate Assessment of Plant Deficiencies	April 2012
EN-OP-117	Operations Assessments	4
EN-FAP-OP-006	Operator Aggregate Impact Index Performance Indicator	0
EN-OP-117, Attachment 9.5	Operator Aggregate Assessment of Plant Deficiencies	November 2012
07-S-12-61	Inspection of GE MagnaBlast Circuit Breakers	110

OTHER DOCUMENTS

NUMBER	TITLE	DATE
	Standing Orders	October 14, 2012
	Operator Compensatory Actions	October 2012
	ODMIs In Effect	November 14, 2012
	List of Inputs to Operation Aggregate Index	October 2012
	Tagouts Older than 90 days Report	August 19, 2012
	Caution Tagouts Older than 90 days Report	August 19, 2012
	Items Affecting Operations Aggregate Index	March 1, 2012
	Remaining Open Actions For Open GGN Crs with Operability Code: OPERABLE DNC	April 17, 2012

OTHER DOCUMENTS

NUMBER	TITLE	DATE
	GGNS Quarterly Trend Report 1st and 2nd Quarter 2012	October 3, 2012
	Open ODMI Actions	March 2012
	Remaining Open Actions For Open GGN Crs with Operability Code: OPERABLE-COMP MEAS	April 17, 2012
	Grand Gulf Operator Aggregate Impact Index	November 2011
	Grand Gulf Operator Aggregate Impact Index	December 2011
	Grand Gulf Operator Aggregate Impact Index	January 2012
	Grand Gulf Operator Aggregate Impact Index	February 2012
	Grand Gulf Operator Aggregate Impact Index	March 2012
	Grand Gulf Operator Aggregate Impact Index	April 2012
	Grand Gulf Operator Aggregate Impact Index	May 2012
	Grand Gulf Operator Aggregate Impact Index	June 2012
	Grand Gulf Operator Aggregate Impact Index	July 2012
	Grand Gulf Operator Aggregate Impact Index	August 2012
	Grand Gulf Operator Aggregate Impact Index	September 2012
	Grand Gulf Operator Aggregate Impact Index	October 2012
	Grand Gulf Operator Aggregate Impact Index	November 2012
	Grand Gulf Operator Burdens (OB)	November 2011
	Grand Gulf Operator Burdens (OB)	December 2011
	Grand Gulf Operator Burdens (OB)	January 2012
	Grand Gulf Operator Burdens (OB)	February 2012

OTHER DOCUMENTS

NUMBER	TITLE	DATE
	Grand Gulf Operator Burdens (OB)	March 2012
	Grand Gulf Operator Burdens (OB)	April 2012
	Grand Gulf Operator Burdens (OB)	May 2012
	Grand Gulf Operator Burdens (OB)	June 2012
	Grand Gulf Operator Burdens (OB)	July 2012
	Grand Gulf Operator Burdens (OB)	August 2012
	Grand Gulf Operator Burdens (OB)	September 2012
	Grand Gulf Operator Burdens (OB)	October 2012
	Grand Gulf Operator Burdens (OB)	November 2012
	Grand Gulf Operator Workarounds (OWA)	November 2011
	Grand Gulf Operator Workarounds (OWA)	December 2011
	Grand Gulf Operator Workarounds (OWA)	January 2012
	Grand Gulf Operator Workarounds (OWA)	February 2012
	Grand Gulf Operator Workarounds (OWA)	March 2012
	Grand Gulf Operator Workarounds (OWA)	April 2012
	Grand Gulf Operator Workarounds (OWA)	May 2012
	Grand Gulf Operator Workarounds (OWA)	June 2012
	Grand Gulf Operator Workarounds (OWA)	July 2012

OTHER DOCUMENTS

NUMBER	TITLE	DATE
	Grand Gulf Operator Workarounds (OWA)	August 2012
	Grand Gulf Operator Workarounds (OWA)	September 2012
	Grand Gulf Operator Workarounds (OWA)	October 2012
	Grand Gulf Operator Workarounds (OWA)	November 2012
	Grand Gulf Control Room Deficiencies	November 2011
	Grand Gulf Control Room Deficiencies	December 2011
	Grand Gulf Control Room Deficiencies	January 2012
	Grand Gulf Control Room Deficiencies	February 2012
	Grand Gulf Control Room Deficiencies	March 2012
	Grand Gulf Control Room Deficiencies	April 2012
	Grand Gulf Control Room Deficiencies	May 2012
	Grand Gulf Control Room Deficiencies	June 2012
	Grand Gulf Control Room Deficiencies	July 2012
	Grand Gulf Control Room Deficiencies	August 2012
	Grand Gulf Control Room Deficiencies	September 2012
	Grand Gulf Control Room Deficiencies	October 2012
	Grand Gulf Control Room Deficiencies	November 2012

OTHER DOCUMENTS

NUMBER	TITLE	DATE
	Grand Gulf Control Room Alarm (CRA)	November 2011
	Grand Gulf Control Room Alarm (CRA)	December 2011
	Grand Gulf Control Room Alarm (CRA)	January 2012
	Grand Gulf Control Room Alarm (CRA)	February 2012
	Grand Gulf Control Room Alarm (CRA)	March 2012
	Grand Gulf Control Room Alarm (CRA)	April 2012
	Grand Gulf Control Room Alarm (CRA)	May 2012
	Grand Gulf Control Room Alarm (CRA)	June 2012
	Grand Gulf Control Room Alarm (CRA)	July 2012
	Grand Gulf Control Room Alarm (CRA)	August 2012
	Grand Gulf Control Room Alarm (CRA)	September 2012
	Grand Gulf Control Room Alarm (CRA)	October 2012
	Grand Gulf Control Room Alarm (CRA)	November 2012
	Grand Gulf Caution Tags > 90 days	November 2011-November 2012
	Grand Gulf Tagouts > 90 days	November 2011-November 2012

CONDITION REPORTS

CR-GGN-2012-08881	CR-GGN-2012-10487	CR-GGN-2012-10890
CR-GGN-2012-09914	CR-GGN-2012-10502	CR-GGN-2012-10910
CR-GGN-2012-09941	CR-GGN-2012-10503	CR-GGN-2012-10911
CR-GGN-2012-09942	CR-GGN-2012-10504	CR-GGN-2012-10919
CR-GGN-2012-10032	CR-GGN-2012-10505	CR-GGN-2012-10920
CR-GGN-2012-10033	CR-GGN-2012-10506	CR-GGN-2012-11071
CR-GGN-2012-10037	CR-GGN-2012-10508	CR-GGN-2012-11114
CR-GGN-2012-10071	CR-GGN-2012-10509	CR-GGN-2012-11115
CR-GGN-2012-10102	CR-GGN-2012-10510	CR-GGN-2012-11151
CR-GGN-2012-10108	CR-GGN-2012-10511	CR-GGN-2012-11504
CR-GGN-2012-10143	CR-GGN-2012-10512	CR-GGN-2012-11506
CR-GGN-2012-10217	CR-GGN-2012-10513	CR-GGN-2012-11564
CR-GGN-2012-10224	CR-GGN-2012-10514	CR-GGN-2012-11568
CR-GGN-2012-10228	CR-GGN-2012-10515	CR-GGN-2012-11615
CR-GGN-2012-10237	CR-GGN-2012-10530	CR-GGN-2012-11665
CR-GGN-2012-10247	CR-GGN-2012-10531	CR-GGN-2012-11668
CR-GGN-2012-10253	CR-GGN-2012-10532	CR-GGN-2012-11669
CR-GGN-2012-10287	CR-GGN-2012-10533	CR-GGN-2012-11673
CR-GGN-2012-10306	CR-GGN-2012-10578	CR-GGN-2012-11674
CR-GGN-2012-10311	CR-GGN-2012-10598	CR-GGN-2012-11675
CR-GGN-2012-10313	CR-GGN-2012-10599	CR-GGN-2012-11676
CR-GGN-2012-10412	CR-GGN-2012-10610	CR-GGN-2012-11794
CR-GGN-2012-10431	CR-GGN-2012-10611	CR-GGN-2012-11819
CR-GGN-2012-10436	CR-GGN-2012-10612	CR-GGN-2012-11830
CR-GGN-2012-10438	CR-GGN-2012-10615	CR-GGN-2012-11832
CR-GGN-2012-10443	CR-GGN-2012-10622	CR-GGN-2012-11874
CR-GGN-2012-10450	CR-GGN-2012-10635	CR-GGN-2012-11943
CR-GGN-2012-10451	CR-GGN-2012-10636	CR-GGN-2012-11944
CR-GGN-2012-10463	CR-GGN-2012-10666	CR-GGN-2012-11961

CONDITION REPORTS

CR-GGN-2012-10464	CR-GGN-2012-10735	CR-GGN-2012-11979
CR-GGN-2012-10467	CR-GGN-2012-10816	CR-GGN-2012-12165
CR-GGN-2012-10468	CR-GGN-2012-10819	CR-GGN-2012-12166
CR-GGN-2012-10469	CR-GGN-2012-10820	CR-GGN-2012-12215
CR-GGN-2012-10471	CR-GGN-2012-10828	CR-GGN-2012-12218
CR-GGN-2012-10472	CR-GGN-2012-10829	CR-GGN-2012-12236
CR-GGN-2012-10476	CR-GGN-2012-10859	CR-GGN-2012-12332
CR-GGN-2012-10478	CR-GGN-2012-10860	CR-GGN-2012-12336
CR-GGN-2012-10479	CR-GGN-2012-10861	CR-GGN-2012-12344
CR-GGN-2012-10481	CR-GGN-2012-10862	CR-GGN-2012-12345
CR-GGN-2012-10482	CR-GGN-2012-10863	CR-GGN-2012-12380
CR-GGN-2012-10484	CR-GGN-2012-10886	CR-GGN-2012-12381
CR-GGN-2012-10485	CR-GGN-2012-12472	CR-GGN-2012-12457
CR-GGN-2012-10486	CR-GGN-2012-12458	CR-GGN-2012-09693
CR-GGN-2012-09889	CR-GGN-2012-12187	CR-GGN-2012-01486
CR-GGN-2012-08885	CR-GGN-2012-09035	CR-GGN-2012-09111

Section 4OA3: Event Follow-Up

PROCEDURES

NUMBER	TITLE	REVISION
EN-LI-118	Root Cause Evaluation Process	18
05-S-01-EP-1	Emergency/Severe Accident Procedure Support Documents	27
06-RE-1C51-O-0001	Local Power Range Monitor Calibration	112
17-S-02-40	Bypassing and Unbypassing LRPMs	116
04-1-01-C51-1	Neutron Monitoring	28
04-1-02-1H13-P680-5A-C9	LPRM DNSC	206

Section 4OA3: Event Follow-Up

PROCEDURES

NUMBER	TITLE	REVISION
07-S-33-C51-2	LPRM Detector Removal/Installation	112
07-S-33-C51-2	LPRM Detector Removal/Installation	113
03-1-01-1	Cold Shutdown to Generator Carrying Minimum Load	154
06-RE-1C51-O-0001	Local Power Range Monitor Calibration	112
06-RE-1C51-W-0001	APRM Gain Adjustment	106
01-S-06-26	Post-Trip Analysis, Scram # 126, December 31, 2012	20
02-S-01-27	Operation's Philosophy	49
01-S-06-5	Event Notification Worksheet EN #48637	110

OTHER DOCUMENTS

NUMBER	TITLE	REVISION / DATE
00160640	Action Request Identification	October 22, 2012
	CA 34 for CR-GGN-2012-1842	
	CA 35 for CR-GGN-2012-1842	
	CA 43 for CR-GGN-2012-1842	
GNRO-2012-00013	GGNS LER 2012-001-00 Surveillance Test Procedure Inadequate to meet the Requirements of Technical Specifications	March 13, 2012
GNRO-2012-00028	GGNS LER 2012-002-00 Manual Reactor Scram Due to a Steam Supply Motor Operated Valve Failure that Resulted in the Inability to Maintain Reactor Water Level	April 19, 2012

OTHER DOCUMENTS

NUMBER	TITLE	REVISION / DATE
GNRO-2012-00048	GGNS LER 2012-003-00 Actuation Due to Division III Bus Undervoltage following a Lightening Strike	May 29, 2012
GNRO-2012-00069	GGNS LER 2012-004-00 Weld Defect Indication Found in Residual Heat Removal System to Reactor Pressure Vessel Boundary Nozzle	June 27, 2012
GNRO-2012-00084	GGNS LER 2012-005-00 Average Power Range Monitors Inoperable in Excess of Technical Specifications Allowances in Mode 2	August 13, 2012
GNRO-2012-00090	Special Report 2012-006-00 Special Nuclear Inventory Discrepancy	August 23, 2012
	Root Cause Evaluation Report, Inability to Maintain Reactor Water Lever, CR-GGN-2012-1842	July 11, 2012
	Apparent Cause Evaluation Report PRNM Issues During RF18 Power Ascension, CR-GGN-2012-8224	1
GNRO-2012/00108	GGNS LER 2012-007-00 Standby Service Water System Administratively Inoperable For A Period Longer Than Allowed By Technical Specifications	September 14, 2012
	Core Operating Limits Report	LBDCR 12034
22A3739AE	Neutron Monitoring System	6
SDC-C71	Reactor Protection System	0
SDC-C51	Neutron Monitoring System	0
Chapter 7	GG UFSAR	Chapter 7
	GG Technical Specifications and Bases	
SCN No: 96/0001	Standard/Specific Change Notice	December 30, 2003
DRN No: 04-1210	SDC-C51 Neutron Monitoring System	0

OTHER DOCUMENTS

NUMBER	TITLE	REVISION / DATE
DRN No: 05-1185	SDC-C71	0
	Forced Outage Worklist	December 18, 2012

CONDITION REPORTS

CR-GGN-2012-07669	CR-GGN-2012-11950	CR-GGN-2007-03818
CR-GGN-2011-00099	CR-GGN-2009-06249	CR-GGN-2012-04887
CR-GGN-2012-06386	CR-GGN-2012-08224	CR-GGN-2012-11950
CR-GGN-2012-08258	CR-GGN-2012-08224	CR-GGN-2012-08349
CR-GGN-2012-08351	CR-GGN-2013-00177	CR-GGN-2013-00178

ENGINEERING CHANGES

EC No. 19461 EC No. 21999

Section 4OA7: Licensee-Identified Violations

CONDITION REPORTS

CR-GGNS-2012-09405

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PROCEDURES

NUMBER	TITLE	REVISION / DATE
07-S-14-310	Inspection of Mechanical Seals on Doors	10
EN-DC-170	Fukushima Near Term Task Force Recommendation 2.3 Flooding Walkdown Procedure	0
GGNS-CS-12-0002	Flooding Walkdown Submittal Report for Resolution of Fukushima Near-Term Task Force Recommendation 2.3: Flooding	0

EN-DC-168	Fukushima Near-Term Task Force Recommendation 2.3 Seismic Walk-down Procedure	0
05-1-02-VI-2	Hurricanes, Tornados, and Severe Weather	119
05-1-02-VI-1	Off-Normal Event Procedure Flooding	109
EN-EP-302	Severe Weather Response	0

DRAWINGS

NUMBER	TITLE	REVISION / DATE
07-S-14-310	Inspection of Mechanical Seals on Doors	10
J-0133G	Installation detail-Seismic and Non Seismic Tubing Run-STDBY. Diesel Generator	3
J-0157T	Area Temp. Element	6
J-135B-002	Standby Service Water Pump House A and B Temperature	5
J-1512	Standby Service Water Pump House Basin A	8
J-1512- U2-C	Standby Service Water Pump House Basin A	A
J-KA1512	Standby Service Water Pump House Basin A	A
M-1026	Diesel Generator Building, Unit 1	15
M-1106A	D. Gen., ECCS., ESF. ELEC. SWGR., SSW. & CIRC. WTR. PP. HSE. VENT. SYS. – Unit 1	12
9645-J-561.0-Q1C61N403A-1.1-0010	Thermo Electric Drawing 27620	

OTHER

NUMBER	TITLE	REVISION / DATE
	Endorsement of Nuclear Energy Institute 12-07, “Guidelines for Performing Verification Walkdowns of Plant Flood Protection Features”	May 31, 2012
WP1	Yard Inside PA (North)	0
WP2	Yard Inside PA (South)	0
WP 3	Yard Outside PA (North)	0
WP4	Yard Outside PA (South)	0

OTHER

NUMBER	TITLE	REVISION / DATE
AWC-041	DG, El. 133', Room 1D308,DSL	
AWC-050	SSW, El. 133', Room 2M112, SSW	
SWEL1-084	H22P401, STBY DG Engine Control Panel	
SWEL1-068	Y47N005B, Temperature Element (SSW Pump House B Space)	
SWEL	SWEL Excel Sheet	September 17, 2012
	US Army Corp of Engineers: Sandbagging Techniques	2004
ER-GG-2004-0272-000	Acceptance of corrosion of conduit and electric boxes (CR-GGN-2004-02612)	July 1, 2004
	PMP Site Drainage Modifications	1
GGNS-CS-12-00003	GGNS Flooding Walkdown Submittal Report for Resolution of Fukushima Near-Term Task Force Recommendation 2.3: Flooding	0
GGNS-CS-12-00002	GGNS Flooding Walkdown Submittal Report for Resolution of Fukushima Near-Term Task Force Recommendation 2.3: Seismic	0
GGNS-CS-12-00004	GGNS Flooding Walkdown Submittal Report for Resolution of Fukushima Near-Term Task Force Recommendation 2.3: Flooding	0

CONDITION REPORTS

CR-GGN-2012-10896	CR-GGN-2012-10894	CR-GGN-2012-10895
CR-GGN-2012-10907	CR-GGN-2012-10897	CR-GGN-2012-11034
CR-GGN-2012-10870	CR-GGN-2012-10872	CR-GGN-2012-10894
CR-GGN-2012-10876	CR-GGN-2012-11007	CR-GGN-2012-11010
CR-GGN-2012-11009	CR-GGN-2012-11008	CR-GGN-2012-10869
CR-GGN-2012-10868	CR-GGN-2012-11126	CR-GGN-2012-11128
CR-GGN-2012-11129	CR-GGN-2012-11130	CR-GGN-2012-11078
CR-GGN-2012-11081	CR-GGN-2012-11084	CR-GGN-2012-11328
CR-GGN-2012-11334	CR-GGN-2012-11335	CR-GGN-2012-11337

CR-GGN-2012-11306	CR-GGN-2012-11307	CR-GGN-2012-11308
CR-GGN-2012-11309	CR-GGN-2012-11455	CR-GGN-2012-11456
CR-GGN-2012-11457	CR-GGN-2012-11458	CR-GGN-2012-11459
CR-GGN-2012-11460	CR-GGN-2012-11461	CR-GGN-2012-11462
CR-GGN-2012-11463	CR-GGN-2012-11464	CR-GGN-2012-11465
CR-GGN-2012-11466	CR-GGN-2012-11467	CR-GGN-2012-11468
CR-GGN02004-02612	CR-GGN-2008-01269	CR-GGN-2008-05146
CR-GGN-2012-10894	CR-GGN-2012-10895	CR-GGN-2012-10896
CR-GGN-2012-10897	CR-GGN-2012-10907	CR-GGN-2012-11034
CR-GGN-2012-10325	CR-GGN-2012-12338	CR-GGN-2012-12331
CR-GGN-2012-12329	CR-GGN-2012-12338	

Attachment 2: Request for Information for ALARA Planning & Controls Inspection

1. **Items needed to support the ALARA Planning & Controls (71124.02) inspection to be conducted by Louis C. Carson II are as follows:**

   Date of Last Inspection: February 18, 2011

   A. List of contacts and telephone numbers for ALARA program personnel

   B. Applicable organization charts

   C. Copies of audits, self-assessments, and LERs, written since date of last inspection, focusing on ALARA

   D. Procedure index for ALARA Program

   E. Please provide specific procedures related to the following areas noted below. Additional Specific Procedures may be requested by number after the inspector reviews the procedure indexes.

      1. ALARA Program
      2. ALARA Committee
      3. Radiation Work Permit Preparation

   F. A summary list of corrective action documents (including corporate and subtiered systems) written since date of last inspection, related to the ALARA program. In addition to ALARA, the summary should also address Radiation Work Permit violations, Electronic Dosimeter Alarms, and RWP Dose Estimates

   NOTE: The lists should indicate the significance level of each issue and the search criteria used. Please provide documents which are "searchable."

   G. List of work activities greater than 1 rem, since date of last inspection.

      Include original dose estimate and actual dose.

   H. Site dose totals and 3-year rolling averages for the past 3 years (based on dose of record)

   I. Outline of source term reduction strategy

   J. A major focus of this inspection will be the results of the power upgrade outage, please provide the following:

      Annual GGNS ALARA Report for 2011

      Last post Refueling-Power- Outage Report

      List of ALARA Package that Exceeded the Original Dose Projections

Provide Written Justifications if Dose were Exceeded by 50% & 5 Person-Rem

2. Occupational Dose Assessment (Inspection Procedure 71124.04) to be reviewed:

Date of Last Inspection: August 18, 2010

A List of contacts and telephone numbers for the following areas:

1 Radiological effluent control

2 Engineered safety feature air cleaning systems

B Applicable organization charts

C Audits, self assessments, surveillances, vendor or NUPIC audits of contractor support, and LERs written since September 2010 related to Occupational Dose Assessment

D Procedure indexes for Occupational Dose Assessment

E Please provide specific procedures related to the following areas. Additional Specific Procedures may be requested after the inspector reviews the procedure indexes.

1. Radiation Protection Program
2. Radiation Protection Conduct of Operations
3. Personnel Dosimetry Program
4. Radiological Posting and Warning Devices
5. Air Sample Analysis
6. Performance of High Exposure Work
7. Declared Pregnant Worker
8. Bioassay Program

F List of corrective action documents (including corporate and subtiered systems) written since September 2010 associated with:

1. NVLAP accreditation
2. Dosimetry (TLD/OSL, etc.) problems
3. Electronic alarming dosimeters
4. Bioassays or internally deposited radionuclides or internal dose

5. Neutron dose

NOTE; The lists should indicate the significance level of each issue and the search criteria used.

G List of positive whole body counts since, September 2010 names redacted if desired

H Part 61 analyses/scaling factors

I The most recent National Voluntary Laboratory Accreditation Program (NVLAP) accreditation report on the licensee or dosimetry vendor, as appropriate

Please provide this information to me by November 1, 2012; thank you in advance. If you have any questions pertaining to the requested information or the upcoming inspection, my office number is (817) 200-1221, or you can reach me by email at Louis.Carson@nrc.gov.