UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 E. LAMAR BLVD.
ARLINGTON, TX 76011-4511

February 12, 2014

Mr. Kevin Mulligan
Site 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 05000416/2013005

Dear Mr. Mulligan:

On December 31, 2013, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Grand Gulf Nuclear Station, Unit 1. On January 16, 2014, the NRC inspectors discussed the results of this inspection with you and other members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

NRC inspectors documented four findings of very low safety significance (Green) in this report. All of these findings involved violations of NRC requirements. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2.a of the Enforcement Policy.

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

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, "Public Inspections, Exemptions, Requests for Withholding," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC's Public Document Room or from the Publicly Available Records (PARS) component of the NRC's Agencywide Documents 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/

Don Allen, Branch Chief
Project Branch C
Division of Reactor Projects

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

Enclosure: Inspection Report 05000416/2013005
w/ Attachments: 1) Supplemental Information
2) Request for Additional Information for the Occupational Radiation Safety Inspection

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

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Publicly Avail.	☑Yes ☐ No	Sensitive	☐Yes ☑ No	Sens. Type Initials	DBA

SRI:DRP/C	RI:DRP/C	SPE:DRP/C	C:DRS/EB1	C:DRS/EB2	C:DRS/OB
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C:DRS/PSB1	C:DRS/PSB2	C:DRS/TSB	BC:DRP/C		
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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket:	05000416
License:	NPF-29
Report:	05000416/2013005
Licensee:	Entergy Operations, Inc.
Facility:	Grand Gulf Nuclear Station, Unit 1
Location:	7003 Baldhill Road Port Gibson, MS 39150
Dates:	October 1 through December 31, 2013
Inspectors:	R. Smith, Senior Resident Inspector B. Rice, Resident Inspector G. Apger, Operations Engineer N. Greene, Ph.D., Health Physicist S. Hedger, Operations Engineer L. Ricketson, P.E., Senior Health Physicist D. Strickland, Operations Engineer J. Laughlin, Emergency Preparedness Inspector, NSIR
Approved By:	Don Allen Chief, Project Branch C Division of Reactor Projects

SUMMARY

IR 05000416/2013005; 10/01/2013 – 12/31/2013; Grand Gulf Nuclear Station, Integrated Resident and Regional Report; Refueling and Other Outage Activities; Surveillance Testing; and Radiological Hazard Assessment and Exposure Controls

The inspection activities described in this report were performed between October 1, 2013, and December 31, 2013, by the resident inspectors at the Grand Gulf Nuclear Station, five inspectors from the NRC's Region IV office and one inspector from the NRC's Office of Nuclear Security and Incident Response. Four findings of very low safety significance (Green) are documented in this report. All of these findings involved violations of NRC requirements. The significance of inspection findings is indicated by their color (Green, White, Yellow, or Red), which is determined using Inspection Manual Chapter 0609, "Significance Determination Process." Their cross-cutting aspects are determined using Inspection Manual Chapter 0310, "Components Within the Cross-Cutting Areas." Violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process."

Cornerstone: Barrier Integrity

- Green. The inspectors identified a non-cited violation of Technical Specification 3.4.11 for the failure to comply with the Reactor Coolant System (RCS) Pressure and Temperature Limits Report (PTLR) during plant cold startups. Specifically, the PTLR had a lower limit of zero psig, and the licensee operated the reactor pressure vessel (RPV) below zero psig during the plant start-up that commenced on November 2, 2013. A review of plant data showed that the RPV pressure was maintained below zero psig for approximately 2 hours. The licensee performed an engineering evaluation and determined that the maximum compressive stress experienced by the RPV did not exceed the maximum yield strength of RPV. Immediate corrective action included revising Procedure 03-1-01-1, "Cold Shutdown to Generator Carrying Minimum Load," to ensure the RPV is pressurized prior to opening the main steam isolation valves (MSIVs) and providing training on the procedural changes to all the operating crews. The licensee entered this issue into the corrective action process under Condition Report CR-GGN-2013-07021.

  The failure to comply with the RCS Pressure and Temperature Limits Report specified in Technical Specification 3.4.11 was a performance deficiency. The performance deficiency was determined to be more than minor, and therefore a finding, because it was associated with the human performance attribute of the Barrier Integrity Cornerstone and had the potential to adversely affect the associated cornerstone objective of providing reasonable assurance that a physical design barrier (reactor coolant system) protects the public from radionuclide release caused by accidents or events. Specifically, without NRC review and approval of revised pressure and temperature limits that include operating the RPV below zero psig, the inspectors did not have reasonable assurance the RPV would not be adversely affected. Using NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," June 19, 2012, the inspectors determined that the issue

affected the Barrier Integrity Cornerstone. Using NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process for Findings At-Power," June 19, 2012, Exhibit 3, the inspectors determined that since this finding involved the reactor coolant system boundary, a detailed risk evaluation was required. The Senior Reactor Analyst reviewed the finding and determined that a detailed risk evaluation was not required. The licensee performed an engineering evaluation and concluded that there was no impact to the reactor vessel. As a result, the Senior Reactor Analyst concluded that there was no change in risk due to the performance deficiency. The inspectors determined that since the procedural steps to perform Attachments VIII and X concurrently had been in place since 1994, this was a latent issue; therefore no cross-cutting aspect was assigned (Section 1R20).

- Green. The inspectors reviewed a self-revealing, non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," for the failure to provide an adequate procedure for a safety related activity. On December 17, 2013, while performing Surveillance Procedure 06-IC-1E31-Q-1016-02, "RCIC Steam Supply Pressure Low Functional Test," Revision 111, the reactor core isolation cooling (RCIC) system became inoperable due to the procedure being incorrectly revised. Furthermore, the procedure error resulted in the containment isolation capability for RCIC being lost for approximately 1 hour. As an immediate corrective action, the licensee restored the breakers regaining isolation capability, and reopened the RCIC inboard isolation valve, thus restoring RCIC to operable status. The licensee entered this issue into the corrective action process under Condition Reports CR-GGN-2013-07720, CR-GGN-2013-07733, and CR-GGN-2013-07374.

  The failure to have an adequate procedure for the reactor core isolation cooling steam supply pressure low functional test is a performance deficiency. The performance deficiency was more than minor and therefore a finding because it was associated with the procedure quality 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. This performance deficiency was also associated with the procedural quality attribute of the Barrier Integrity Cornerstone and adversely affected the cornerstones objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Using NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," June 19, 2012, the inspectors determined the issue affected the Barrier Integrity Cornerstone. The inspectors used Inspection Manual Chapter 0609, Appendix H, "Containment Integrity Significance Determination Process," May 6, 2004, and determined the finding was a type B finding at full power. Using Table 6.1, "Phase 1 Screening-Type B Findings at Power," the inspectors concluded that since this issue involved containment isolation valves in a BWR Mark III containment, a Phase 2 analysis was necessary. Using Table 6.2, "Phase 2 Risk Significance – Type B Findings at Full Power," the inspectors concluded that the risk significance was very low (Green) because the exposure time was less than 3 days. Furthermore, the inspectors determined that this issue affected the Mitigating System Cornerstone. Using NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process for Findings At-Power", June 19, 2012, Exhibit 2, the inspectors determined that since the finding represented a loss

of system and/or function, a detailed risk evaluation was required. The inspectors utilized the Grand Gulf Standardized Plant Analysis Risk model to determine the change in core damage frequency (CDF) due to the loss of safety function. The inspectors assigned the RCIC system a failure probability of 1.00 for a conservative duration of 1 hour. The resulting change in CDF was 1.9E-9/year, thus the finding was of very low safety significance (Green). The Senior Risk Analyst reviewed the inspectors' evaluation and verified the conclusions to be correct. The apparent cause of this finding was that the licensee failed to effectively utilize human error prevention techniques. Therefore, the finding had a cross-cutting aspect in the area of human performance, work practices because the licensee did not perform adequate self and peer checking while performing an activity affecting quality [H.4(a)] (Section 1R22).

Cornerstone: Occupational Radiation Safety

- Green. The inspectors reviewed a self-revealing, non-cited violation of Technical Specification 5.7.1, resulting from an individual entering a high radiation area without the required radiation monitoring device. This issue was entered into the licensee's corrective action program as Condition Report CR-GGN-2012-04112. As a corrective action, the radiation protection manager coached the individual on the need for proper dosimetry devices in high radiation areas.

  The entry into a high radiation area without all required radiation monitoring devices was a performance deficiency and was a violation of Technical Specification 5.7.1. The performance deficiency was more than minor because it was associated with the Occupational Radiation Safety Cornerstone attribute of program and process (exposure control) and adversely affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation because it removed a barrier intended to prevent the worker from receiving unexpected dose. Using Inspection Manual Chapter 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," dated August 19, 2008, the inspectors determined the violation had very low safety significance because: (1) it was not an as low as is reasonably achievable (ALARA) finding, (2) there was no overexposure, (3) there was no substantial potential for an overexposure, and (4) the ability to assess dose was not compromised. This violation had a cross-cutting aspect in the human performance area, associated with the work practices component, because the worker and crew members did not use human error prevention techniques, such as self and peer checking [H.4(a)] (Section 2RS1).

- Green. The inspectors reviewed a self-revealing, non-cited violation of 10 CFR 20.1501(a) for failure to survey, which resulted in a worker entering an unposted high radiation area. This issue was entered into the licensee's corrective action program as Condition Reports CR-GGN-2012-08436 and CR-GGN-2012-09225. As corrective actions, the licensee coached radiation protection personnel on exhibiting a questioning attitude, walked down all affected areas; verified correct postings were used, and surveyed for any other unanticipated dose rate alarms.

The failure to survey and determine radiation levels was a performance deficiency. The significance of the performance deficiency was more than minor because it was associated with the Occupational Radiation Safety Cornerstone attribute of program and process (exposure control) and adversely affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation because the failure exposed a pipefitter to higher than anticipated radiation dose rates. The inspectors used Manual Chapter 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," dated August 19, 2008, to determine the significance of the violation. The violation had very low safety significance because: (1) it was not an as low as is reasonably achievable (ALARA) finding, (2) there was no overexposure, (3) there was no substantial potential for an overexposure, and (4) the ability to assess dose was not compromised. This violation had a cross-cutting aspect in the human performance area, associated with the work control component, because licensee personnel failed to appropriately plan a work activity by not incorporating risk insights, job site conditions, including environmental conditions, which may impact human system interface and radiological safety, and the need for planned contingencies or compensatory actions, such as surveying and up-posting affected areas after a power ascension [H.3(a)] (Section 2RS1).

PLANT STATUS

The Grand Gulf Nuclear Station began the inspection period at 100 percent power. On October 4, 2013, the operators commenced an unplanned shutdown due to the neutral bushing on main transformer A exhibiting high temperatures. The licensee determined the cause of the issue and returned to 100 percent power on October 20, 2013.

On November 1, 2013, the operators commenced an unplanned shutdown due to a hydraulic leak on the A flow control valve located inside the drywell. The licensee determined the cause of the issue and returned to 100 percent power on November 8, 2013.

On November 21, 2013, the operators reduced power to 45 percent due to high differential pressure across the circulating water filter screens. The licensee determined the cause of the issue and returned to 100 percent power on November 22, 2013.

On December 19, 2013, the operators reduced power to 78 percent for a control rod pattern adjustment and to take chemistry samples. The operators returned the plant to 100 percent power on December 20, 2013.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R04 Equipment Alignment (71111.04)

Partial Walkdown

a. Inspection Scope

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

- October 22, 2013, control room air conditioning/standby fresh air system A while control room air condition/standby fresh air system B was inoperable for maintenance
- November 20, 2013, standby diesel generator 11 while standby diesel generator 12 was inoperable for maintenance

The inspectors reviewed the licensee's procedures and system design information to determine the correct lineup for the systems. They visually verified that critical portions of the trains were correctly aligned for the existing plant configuration.

These activities constituted two partial system walk-down samples, as defined in Inspection Procedure 71111.04.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

Quarterly Inspection

a. Inspection Scope

The inspectors evaluated the licensee's fire protection program for operational status and material condition. The inspectors focused their inspection on four plant areas important to safety:

- October 16, 2013, standby service water pump house B and associated valve room (2M110 and 2M112)
- October 16, 2013, standby service water pump house A and associated valve room (1M110 and 1M112)
- November 19, 2013, residual heat removal pump A room (1A103 and 1A203)
- December 2, 2013, diesel generator breezeway (1D301)

For each area, the inspectors evaluated the fire plan against defined hazards and defense-in-depth features in the licensee's fire protection program. The inspectors evaluated control of transient combustibles and ignition sources, fire detection and suppression systems, manual firefighting equipment and capability, passive fire protection features, and compensatory measures for degraded conditions.

These activities constituted four quarterly inspection samples, as defined in Inspection Procedure 71111.05.

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

On October 28, 2013, the inspectors completed an inspection of the station's ability to mitigate flooding due to internal causes. After reviewing the licensee's flooding analysis, the inspectors chose three plant areas containing risk-significant structures, systems, and components that were susceptible to flooding:

- High pressure core spray pump room
- Low pressure core spray pump room

- Residual heat removal C pump room

The inspectors reviewed plant design features and licensee procedures for coping with internal flooding. The inspectors walked down the selected areas to inspect the design features, including the material condition of seals, drains, and flood barriers. The inspectors evaluated whether operator actions credited for flood mitigation could be successfully accomplished.

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

b. Findings

No findings were identified.

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

.1 Review of Licensed Operator Requalification

a. Inspection Scope

On October 17, 2013, the inspectors observed simulator training for an operating crew. The inspectors assessed the performance of the operators and the evaluators' critique of their performance. The inspectors also assessed the modeling and performance of the simulator during the requalification activities.

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 Review of Licensed Operator Performance

a. Inspection Scope

On October 4, 2013, 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 a plant shutdown as a result of the main transformer B neutral bushing overheating. The inspectors observed the operators' performance of the following activities:

- They observed the pre-job brief for infrequently performed test and evolution prior to the plant shutdown due to the overheating condition on the main transformer A neutral bushing.

- They observed the operators inserting a manual scram from approximately 25 percent power, and they observed the control room supervisor entering the emergency operating procedures due to reactor water level decreasing below 11.4 inches.

- They observed the operators placing feedwater into startup level control and maintain reactor water level between 11.4 inches and 53.5 inches.

- They observed the operators controlling reactor pressure using bypass valves and main stream line drains between 800 to 1060 psig.

- They observed the operators shutdown balance of plant equipment such as condensate pumps, condensate booster pumps, heater drain pumps, and one of the reactor feedwater pump turbines. They also secured hydrogen cooling to the main generator and opened the main disconnects for the main generator.

- They observed the operators commencing a reactor cool-down after a high pressure walk-down of the drywell/containment was completed.

In addition, the inspectors assessed the operators' adherence to plant procedures, including conduct of operations procedure and other operations department policies.

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

b. Findings

No findings were identified.

.3 Biennial Inspection

a. Inspection Scope

The licensed operator requalification program involves two training cycles that are conducted over a 2-year period. In the first cycle, the annual cycle, the operators are administered an operating test consisting of job performance measures and simulator scenarios. In the second part of the training cycle, the biennial cycle, operators are administered an operating test and a comprehensive written examination. The examiners observed the associated training cycles during this inspection period.

To assess the performance effectiveness of the licensed operator requalification program, the inspectors conducted personnel interviews, reviewed both the operating tests and written examinations, and observed ongoing operating test activities.

The inspectors interviewed six licensee personnel from the training staff to determine their understanding of the policies and practices for administering requalification examinations. The inspectors also reviewed operator performance on the written

examinations and operating tests. These reviews included observations of portions of the operating tests by the inspectors. The operating tests observed included five job performance measures and two scenarios that were used in the current biennial requalification cycle. These observations allowed the inspectors to assess the licensee's effectiveness in conducting the operating test to ensure operator mastery of the training program content. The inspectors also reviewed medical records of six licensed operators for conformance to license conditions and the licensee's system for tracking qualifications and records of license reactivation for five operators.

The results of these examinations were reviewed to determine the effectiveness of the licensee's appraisal of operator performance and to determine if feedback of performance analyses into the requalification training program was being accomplished. The inspectors interviewed members of the training department and reviewed minutes of training review group meetings to assess the responsiveness of the licensed operator requalification program to incorporate the lessons learned from both plant and industry events. Examination results were also assessed to determine if they were consistent with the guidance contained in NUREG 1021, "Operator Licensing Examination Standards for Power Reactors", Revision 9, Supplement 1, and NRC Manual Chapter 0609, Appendix I, "Licensed Operator Requalification Significance Determination Process."

In addition to the above, the inspectors reviewed examination security measures, simulator fidelity, and existing logs of simulator deficiencies.

On September 27, 2013, the licensee informed the lead inspectors of the results of the written examinations and operating tests for the Licensed Operator Requalification Program. The inspectors compared these results to NRC Inspection Manual Chapter 0609, Appendix I, "Licensed Operator Requalification Significance Determination Process," values and determined that there were no findings based on these results and because all of the individuals that failed the applicable portions of their examinations and/or operating tests were remediated, retested, and passed their retake examinations prior to returning to shift.

These activities constitute completion of one inspection sample of the biennial licensed operator requalification program, as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed several instances of degraded performance of the below listed safety-related structures, systems, and components (SSCs):

- October 31, 2013, high pressure core spray (E22), excessive unavailability during scheduled maintenance outages

- November 18, 2013, plant air system (P51), due to several failures of the station air compressor, resulting in the system being placed in a(1) status and the site's recovery actions to restore the system to a(2) status

The inspectors reviewed the extent of condition of possible common cause SSC failures and evaluated the adequacy of the licensee's corrective actions. The inspectors reviewed the licensee's work practices to evaluate whether these may have played a role in the degradation of the SSCs. The inspectors assessed the licensee's characterization of the degradation in accordance with 10 CFR 50.65 (the Maintenance Rule), and verified that the licensee was appropriately tracking degraded performance and conditions in accordance with the Maintenance Rule.

These activities constituted completion of two maintenance effectiveness samples, as defined in Inspection Procedure 71111.12.

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors reviewed three risk assessments performed by the licensee prior to changes in plant configuration and the risk management actions taken by the licensee in response to elevated risk:

- From October 4 through October 13, 2013, during a plant shutdown that was required due to an overheated main transformer A neutral bushing, which resulted in the site entering yellow risk for decay heat removal and reactivity control during various times of the shutdown.

- From November 1 through November 4, 2013, during a plant shutdown that was required due to a leak on the hydraulic control unit for the A flow control valve, which resulted in the site entering yellow risk for decay heat removal and reactivity control during various times of the shutdown.

- From December 4 through December 9, 2013, during a division 3 allowed outage time that resulted in the site being in high yellow risk condition with the division 3 diesel generator being nonfunctional during the outage.

These activities constitute completion of three maintenance risk assessments inspection samples, as defined in Inspection Procedure 71111.13.

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed two operability determinations that the licensee performed for degraded or nonconforming structures, systems, or components (SSCs):

- October 29, 2013, operability determination of reactor core isolation coolant pump differential pressure out of tolerance, CR-GGN-2013-06197
- November 7, 2013, operability determination of control room air conditioning B freon leak, CR-GGN-2013-06718

The inspectors reviewed the timeliness and technical adequacy of the licensee's evaluations. Where the licensee determined the degraded SSC to be operable, the inspectors verified that the licensee's compensatory measures were appropriate to provide reasonable assurance of operability. The inspectors verified that the licensee had considered the effect of other degraded conditions on the operability of the degraded SSC.

These activities constitute completion of two operability and functionality review samples, as defined in Inspection Procedure 71111.15.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed four post-maintenance testing activities that affected risk-significant structures, systems, or components (SSCs):

- October 6, 2013, source range monitor E after maintenance
- December 4, 2013, standby service water C pump following maintenance
- December 5, 2013, high pressure core spray pump and valves following maintenance
- December 9, 2013, division 3 diesel generator following maintenance

The inspectors reviewed licensing- and design-basis documents for the SSCs and the maintenance and post-maintenance test procedures. The inspectors observed the performance of the post-maintenance tests to verify that the licensee performed the tests in accordance with approved procedures, satisfied the established acceptance criteria, and restored the operability of the affected SSCs.

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

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities (71111.20)

a. Inspection Scope

During the station's forced outages that concluded on October 20, 2013, and November 8, 2013, the inspectors evaluated the licensee's outage activities. The inspectors verified that the licensee considered risk in developing and implementing the outage plan, appropriately managed personnel fatigue, and developed mitigation strategies for losses of key safety functions. This verification included the following:

- Review of the licensee's outage plan prior to the outage
- Monitoring of shut-down and cool-down activities
- Verification that the licensee maintained defense-in-depth during outage activities
- Monitoring of heat-up and startup activities

These activities constitute completion of one outage activities sample, as defined in Inspection Procedure 71111.20.

b. Findings

Introduction. The inspectors identified a Green non-cited violation of Technical Specification 3.4.11 for the failure to comply with the Reactor Coolant System (RCS) Pressure and Temperature Limits Report (PTLR) during plant cold startups. Specifically, on and before November 2, 2013, the licensee operated the plant with the reactor pressure vessel (RPV) below the minimum pressure value of zero psig, due to the main steam isolation valves being open while the mechanical vacuum pumps were running to draw a vacuum on the main condenser.

Description. On November 12, 2013, the inspectors identified a concern that the licensee operated the plant in a manner that did not meet the PTLR for non-nuclear heat-up, as specified in Technical Specification 3.4.11. Specifically, the PTLR had a lower limit of zero psig, and the licensee operated the RPV below zero psig during the plant start-up that commenced on November 2, 2013. A review of plant data showed that the RPV reached -8.5 psig at its lowest pressure, with the RPV being below zero psig for approximately 2 hours. The licensee initiated Condition Report CR-GGN-2013-07021 to

document the inspectors' concern. The resulting engineering evaluation determined that the maximum compressive stress experienced by the RPV was 135.6 psi, which was much less than the maximum yield strength of 63,000 psi. The inspectors found that the plant configuration that resulted in the RPV being at a vacuum was allowed by Procedure 03-1-01-1, "Cold Shutdown to Generator Carrying Minimum Load." Specifically, this procedure allowed Attachment VIII, "Reactor Startup/Hot Shutdown," and Attachment X, "Establishing Condenser Vacuum," to be performed concurrently. The inspectors also noted that the procedure recognized the possibility of the RPV coming under a vacuum because it provided precautions and limitations on operating with the RPV below zero psig. The inspectors performed a historical review of the procedure and determined that this had been a long standing practice by the licensee, in that the procedural step allowing the performance of Sections VIII and X concurrently had been in place since 1994.

Immediate corrective action included revising Procedure 03-1-01-1, "Cold Shutdown to Generator Carrying Minimum Load," to ensure the RPV is pressurized prior to opening the main steam isolation valves (MSIVs) and providing training on the procedural changes to all the operating crews.

Analysis. The inspectors determined that the failure to comply with the RCS Pressure and Temperature Limits Report specified in Technical Specification 3.4.11 was a performance deficiency. The performance deficiency was determined to be more than minor, and therefore a finding, because it was associated with the human performance attribute of the Barrier Integrity Cornerstone and had the potential to adversely affect the associated cornerstone objective of providing reasonable assurance that a physical design barrier (reactor coolant system) protects the public from radionuclide release caused by accidents or events. Specifically, without NRC review and approval of revised pressure and temperature limits that include operating the RPV below zero psig, the inspectors did not have reasonable assurance the RPV would not be adversely affected. Using NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," June 19, 2012, the inspectors determined that the issue affected the Barrier Integrity Cornerstone. Using NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process for Findings At-Power," June 19, 2012, Exhibit 3, the inspectors determined that since this finding involved the reactor coolant system boundary, a detailed risk evaluation was required. The Senior Risk Analyst reviewed the finding and determined that a detailed risk evaluation was not required. The licensee performed an engineering evaluation and concluded that there was no impact to the reactor vessel. As a result, the Senior Risk Analyst concluded that there was no change in risk due to the performance deficiency. The inspectors determined that since the procedural steps to perform Attachments VIII and X concurrently had been in place since 1994, this was a latent issue; therefore no cross-cutting aspect was assigned.

Enforcement. Technical Specification 3.4.11 requires that RPV pressure and temperatures be maintained within the limits specified in the Pressure and Temperature Limits Report. Contrary to this requirement, on and before November 2, 2013, during plant start-up, the licensee did not maintain the RPV pressure and temperature within the limits specified in the PTLR. Specifically, the licensee operated the plant such that

the pressure in the RPV was below the lower pressure limit of zero psig for approximately 2 hours. As an immediate corrective action, the licensee revised their start-up procedure to ensure the RPV is pressurized prior to opening the MSIVs. This violation is being treated as a non-cited violation (NCV), consistent with Section 2.3.2.a 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 Condition Report CR-GGN-2013-07021 to address recurrence. (NCV 05000416/2013005-01, "Failure to Comply with Technical Specification 3.4.11")

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed three risk-significant surveillance tests and reviewed test results to verify that these tests adequately demonstrated that the structures, systems, and components (SSCs) were capable of performing their safety functions:

In-service tests:

- October 29, 2013, reactor core isolation coolant quarterly pump operability test

Other surveillance tests:

- October 16, 2013, reactor coolant chemistry sample
- December 18, 2013, reactor core isolation coolant steam supply functional test

The inspectors verified that these tests met technical specification requirements, that the licensee performed the tests in accordance with their procedures, and that the results of the test satisfied appropriate acceptance criteria. The inspectors verified that the licensee restored the operability of the affected SSCs following testing.

These activities constitute completion of three surveillance testing inspection samples, as defined in Inspection Procedure 71111.22.

b. Findings

Introduction. The inspectors reviewed a Green, self-revealing, non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," for the failure to provide an adequate procedure for a safety related activity. Specifically, the reactor core isolation cooling (RCIC) steam supply pressure low functional test procedure contained an error that resulted in the loss of primary containment isolation capability and the RCIC system being inoperable.

Description. On December 17, 2013, while performing Surveillance Procedure 06-IC-1E31-Q-1016-02, "RCIC Steam Supply Pressure Low Functional Test," Revision 111, the RCIC steam supply inboard isolation Valve E51-F063 closed, resulting in the RCIC system becoming inoperable. The surveillance was halted, and the RCIC system was restored to operable status within 20 minutes by re-opening

Valve E51-F063. Furthermore, the containment isolation capability for RCIC was lost for approximately 1 hour. This was due to the surveillance procedure incorrectly directing operators to open the breaker to the steam line warm-up bypass Valve E51-F076 and erroneously opening the supply breaker for the RCIC steam supply outboard isolation Valve E51-F064 instead of opening the supply breaker for the steam supply inboard isolation Valve E51-F063. Having the breakers to Valves E51-F064 and E51-F076 in the open position rendered them inoperable and resulted in a loss of containment isolation capability. The licensee restored isolation capability by closing both supply breakers to the two isolation valves.

During their review of the surveillance procedure, the licensee determined that during the most recent revision on November 6, 2013, a 'copy/paste' error was introduced into Step 5.10 of Attachment II. The hardware modification instructions directed the crew to open Breaker 52-153129 (Valve E51-F064), which is a division 1 valve. The instructions should have directed the crew to open Breaker 52-163134 (Valve E51-F063), which is a division 2 valve. Performance of the procedure as written caused a division 1 breaker to be opened while the division 2 surveillance was being performed.

The licensee entered this issue into the corrective action process under Condition Reports CR-GGN-2013-07720, CR-GGN-2013-07733, and CR-GGN-2013-07374. As an immediate corrective action, the licensee restored the breakers to Valves E51-F064 and E51-F076, regaining isolation capability, and reopened the RCIC inboard isolation Valve E51-F063, restoring RCIC to operable status.

Analysis. The failure to have an adequate procedure for the reactor core isolation cooling steam supply pressure low functional test is a performance deficiency. The performance deficiency was determined to be more than minor and therefore a finding because it was associated with the procedure quality 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. This performance deficiency was also associated with the procedural quality attribute of the Barrier Integrity Cornerstone and adversely affected the cornerstones objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Using NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," June 19, 2012, the inspectors determined the issue affected the Barrier Integrity Cornerstone. The inspectors used Inspection Manual Chapter 0609, Appendix H, "Containment Integrity Significance Determination Process," May 6, 2004, and determined the finding was a type B finding at full power. Using Table 6.1, "Phase 1 Screening-Type B Findings at Power," the inspectors concluded that since this issue involved containment isolation valves in a BWR Mark III containment, a Phase 2 analysis was necessary. Using Table 6.2, "Phase 2 Risk Significance – Type B Findings at Full Power," the inspectors concluded that the risk significance was very low or Green because the exposure time was less than 3 days. Furthermore, the inspectors determined that this issue affected the Mitigating System Cornerstone. Using NRC Inspection Manual Chapter 0609, Appendix A, "The Significance Determination Process for Findings At-Power", June 19, 2012, Exhibit 2, the inspectors determined that since the finding represented a loss of system and/or function, a detailed risk evaluation was

required. The inspectors utilized the Grand Gulf Standardized Plant Analysis Risk model to determine the change in core damage frequency (CDF) due to the loss of safety function. The inspectors assigned the RCIC system a failure probability of 1.00 for a conservative duration of 1 hour. The resulting change in CDF was 1.9E-9/year, thus the finding was of very low safety significance (Green). The Senior Risk Analyst reviewed the inspectors' evaluation and verified the conclusions to be correct. The apparent cause of this finding was that the licensee failed to effectively utilize human error prevention techniques. Therefore, the finding had a cross-cutting aspect in the area of human performance, work practices because the licensee did not perform adequate self- and peer-checking while performing an activity affecting quality [H.4(a)].

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," states, in part, activities affecting quality shall be prescribed by documented procedures, of a type appropriate to the circumstances and shall be accomplished in accordance with these procedures. Contrary to the above, the licensee failed to assure that activities affecting quality were prescribed by documented procedures of a type appropriate to the circumstances. Specifically, Procedure 06-IC-1E31-Q-1016-02, "RCIC Steam Supply Pressure Low Functional Test," Revision 111, contained a 'copy/paste' error in Step 5.10 of Attachment II. On December 17, 2013, the procedural error resulted in the licensee inadvertently losing containment isolation capability and causing RCIC to become inoperable. As an immediate corrective action, the licensee restored RCIC to operable status and restored containment isolation capability. This violation is being treated as a non-cited violation (NCV), consistent with Section 2.3.2.a 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 Condition Reports CR-GGN-2013-07720, CR-GGN-2013-07733, and CR-GGN-2013-07374 to address recurrence. (NCV 05000416/2013005-02, "Failure to Provide Adequate Procedures Results in Loss of Safety Function")

Cornerstone: Emergency Preparedness

1EP4 Emergency Action Level and Emergency Plan Changes (IP 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 ML13326A978 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 Part 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.

2. RADIATION SAFETY

Cornerstones: Public Radiation Safety and Occupational Radiation Safety

2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01)

a. Inspection Scope

The inspectors assessed the licensee's performance in assessing the radiological hazards in the workplace associated with licensed activities. The inspectors assessed the licensee's implementation of appropriate radiation monitoring and exposure control measures for both individual and collective exposures. The inspectors walked down various portions of the plant and performed independent radiation dose rate measurements. The inspectors interviewed the radiation protection manager, radiation protection supervisors, and radiation workers. The inspectors reviewed licensee performance in the following areas:

- The hazard assessment program, including a review of the licensee's evaluations of changes in plant operations and radiological surveys to detect dose rates, airborne radioactivity, and surface contamination levels

- Instructions and notices to workers, including labeling or marking containers of radioactive material, radiation work permits, actions for electronic dosimeter alarms, and changes to radiological conditions

- Programs and processes for control of sealed sources and release of potentially contaminated material from the radiologically controlled area, including survey performance, instrument sensitivity, release criteria, procedural guidance, and sealed source accountability

- Radiological hazards control and work coverage, including the adequacy of surveys, radiation protection job coverage and contamination controls, the use of electronic dosimeters in high noise areas, dosimetry placement, airborne radioactivity monitoring, controls for highly activated or contaminated materials (non-fuel) stored within spent fuel and other storage pools, and posting and physical controls for high radiation areas and very high radiation areas

- Radiation worker and radiation protection technician performance with respect to radiation protection work requirements

- Audits, self-assessments, and corrective action documents related to radiological hazard assessment and exposure controls since the last inspection

These activities constitute completion of one sample of radiological hazard assessment and exposure controls, as defined in Inspection Procedure 71124.01.

b. Findings

1. Entry Into A High Radiation Area Without A Required Radiation Monitoring Device

Introduction. The inspectors reviewed a self-revealing, Green, non-cited violation of Technical Specification 5.7.1, resulting from an individual entering a high radiation area without a required radiation monitoring device.

Description. On March 21, 2012, an individual entered the drywell as part of a crew to install rigging beams for valve work. However, the individual had left his/her electronic alarming dosimeter on a bench in the dressing area. The crew did not have continuous coverage by a radiation protection technician. Subsequently, the crew's supervisor checked on the crew and was alerted to a problem when he found the electronic alarming dosimeter where the crew member had left it. The supervisor contacted the crew and instructed the crew members to check to ensure they had their electronic alarming dosimeters. The crew member who had left the dosimeter exited the drywell. Licensee representatives estimated the individual was in the drywell for approximately 20 minutes. The drywell was controlled as a high radiation area because it contained dose rates greater than 100 millirem per hour, according to the licensee's radiation survey records. As corrective action, the radiation protection manager coached the individual on the need for proper dosimetry devices in high radiation areas. The licensee representative reviewed the circumstances and concluded the occurrence resulted from a lack of both self and peer checking to ensure all crew members had electronic alarming dosimeters.

Analysis. The entry into a high radiation area without required radiation monitoring devices was a performance deficiency and was a violation of Technical Specification 5.7.1. The performance deficiency was more than minor because it was associated with the Occupational Radiation Safety Cornerstone attribute of program and process (exposure control) and adversely affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation because it removed a barrier intended to prevent the worker from receiving unexpected dose. Using Inspection Manual Chapter 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," dated August 19, 2008, the inspectors determined the violation had very low safety significance because: (1) it was not an as low as is reasonably achievable (ALARA) finding, (2) there was no overexposure, (3) there was no substantial potential for an overexposure, and (4) the ability to assess dose was not compromised. The violation was self-revealing because the licensee was alerted to the problem when the electronic alarming dosimeter was observed on the bench and not as a result of the licensee representatives' deliberate and focused observation during the course of the activity. This violation had a cross-cutting aspect in the human

performance area, associated with the work practices component, because the worker and crew members did not use human error prevention techniques, such as self and peer checking [H.4(a)].

Enforcement. Technical Specification 5.7.1 requires, in part, that any individual permitted to enter a high radiation area, as defined in 10 CFR Part 20, shall be provided with or accompanied by one or more of the following:

a. A radiation monitoring device that continuously indicates the radiation dose rate in the area.

b. A radiation monitoring device that continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate levels in the area have been established and personnel are aware of them.

c. An individual qualified in radiation protection procedures with a radiation dose rate monitoring device, who is responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by the radiation protection supervision in the radiation work permit (RWP).

Contrary to the above, on March 21, 2012, a licensee worker entered the drywell, a high radiation area, using none of the specified methods. Specifically, the individual had intended to use a radiation monitoring device that continuously indicated the radiation dose in the area and alarmed when a preset integrated dose was received. However, the individual left the device in the dressing area and entered the drywell. As corrective action, the radiation protection manager coached the individual on the need for proper dosimetry devices in high radiation areas. Because this violation was of very low safety significance and was entered into the licensee's corrective action program as Condition Report CR-GGN-2012-04112, this violation was being treated as a non-cited violation, consistent with Section 2.3.2.a of the Enforcement Policy.
(NCV 05000416/2013005-03, "Entry Into A High Radiation Area Without A Required Radiation Monitoring Device")

2. Failure To Survey Resulting in Personnel Entry To A High Radiation Area

Introduction. The inspectors reviewed a self-revealing, Green, non-cited violation of 10 CFR 20.1501(a) for failure to survey, which resulted in a worker entering an unposted high radiation area.

Description. On June 20, 2012, a pipefitter received an unanticipated electronic alarming dosimeter dose rate alarm when he entered a high radiation area on the 166-foot elevation of the turbine bioshield while performing a walk down on the A sensing line area. The pipefitter was briefed by a radiation protection lead technician just prior to entering the turbine bioshield area using Survey GG-1206-0708. This

survey showed a maximum general area dose rate of 40 millirem per hour at 30 cm. The pipefitter entered the area using Task 1 of RWP 20121004, “Maintenance Personnel – General Maintenance Activities and Support Work,” Revision 02, which had a dose alarm setpoint of 10 millirem and a dose rate alarm setpoint of 100 millirem per hour. The RWP did not allow entry into a high radiation area, defined as an area with dose rates greater than 100 millirem per hour at 30 cm. The unanticipated dose rate alarm received by the pipefitter revealed that he had entered an area with dose rates of at least 117 millirem per hour.

As a follow-up to the dose rate alarm received, the licensee performed a survey in the area that the pipefitter entered and found the actual dose rates to be significantly higher than those briefed. Survey GG-1206-0712, dated June 20, 2012, showed the maximum general area dose rates were 140 millirem per hour at 30 cm from the source of the radiation. This confirmed the area should have been posted as a high radiation area instead of a radiation area. Radiation protection personnel promptly posted the 166-foot turbine bioshield area as a high radiation area.

When the inspectors asked why the dose rates were much higher than those anticipated and briefed to the pipefitter, they were told the radiological conditions changed, and the radiation protection lead technician failed to take appropriate actions following these changes and did not inform the pipefitter, as expected. The change in radiological conditions was a result of a change in reactor power. Specifically, shortly after the pipefitter entered the 166-foot elevation of the turbine building, operations personnel contacted the radiation protection lead technician and informed him that reactor power was increasing from 22 percent to 35 percent. The radiation protection lead technician assumed that this would not result in a significant change in radiological conditions. He inappropriately assumed the maximum general area dose rate would be directly proportional to increase in power or approximately 64 millirem per hour. However, this was not accurate for the power increase.

The radiation protection lead technician had not experienced plant power level changes in over two years, and thus, he did not adequately plan work activities to take proper actions and inform workers of changes in jobsite radiological conditions. The licensee determined that there was no written planning standard on when to up-post areas during power ascensions; although, there was an expectation that steam affected areas be up-posted to high radiation areas when recirculation pumps were shifted to fast speed, as during a power increase. Therefore, incorrect assumptions due to poor planning, a lack of a written planning standard, and a failure to stop work and re-survey affected areas after the power change resulted in a failure to post a high radiation area and exposed the pipefitter to higher than anticipated dose rates.

This occurrence was documented in Condition Reports CR-GGN-2012-08436 and CR-GGN-2012-09225. As immediate corrective actions, the licensee coached the radiation protection lead technician on exhibiting a questioning attitude, walked down all affected areas, verified correct postings were used, and surveyed for any other unanticipated dose rate alarms. Longer term corrective actions included the development of a written standard for actions to be taken when operations personnel notify radiation protection personnel of plant status changes and for up-posting steam affected areas and neutron areas of the plant during power ascension.

Analysis. The failure to survey and determine radiation levels was a performance deficiency. The significance of the performance deficiency was more than minor because it was associated with the Occupational Radiation Safety Cornerstone attribute of program and process (exposure control) and adversely affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation because the failure exposed a pipefitter to higher than anticipated radiation dose rates. The inspectors used Manual Chapter 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," dated August 19, 2008, to determine the significance of the violation. The violation had very low safety significance because: (1) it was not an as low as is reasonably achievable finding, (2) there was no overexposure, (3) there was no substantial potential for an overexposure, and (4) the ability to assess dose was not compromised. The violation was self-revealing because the licensee was alerted to the problem when the pipefitter received an electronic alarming dosimeter dose rate alarm and not as a result of the licensee representatives' deliberate and focused observations during the course of the activity. The violation has a cross-cutting aspect in the human performance area, associated with the work control component, because licensee personnel failed to appropriately plan a work activity by not incorporating risk insights, job site conditions, including environmental conditions which may impact human system interface and radiological safety, and the need for planned contingencies or compensatory actions, such as surveying and up posting affected areas after a power ascension [H.3(a)].

Enforcement. Title 10 CFR 20.1501(a) requires, in part, that each licensee make or cause to be made surveys that may be necessary for the licensee to comply with the regulations in 10 CFR Part 20 and that are reasonable under the circumstances to evaluate the extent of radiation levels, and the potential radiological hazards that could be present. Pursuant to 10 CFR 20.1003, a survey means an evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal, or presence of radioactive material or other sources of radiation. Contrary to the above, on June 20, 2012, the licensee failed to make or cause to be made surveys that were necessary for the licensee to comply with 10 CFR 20.1902(b), which specifies requirements for posting high radiation areas. Specifically, licensee representatives did not survey to evaluate radiation levels on the 166-foot elevation of the turbine building when reactor power ascended. As a result, a pipefitter entered an unposted high radiation area and was exposed to higher than anticipated general area dose rates. As corrective actions, the licensee coached radiation protection personnel on exhibiting a questioning attitude, walked down all affected areas, verified correct postings were used, and investigated for any other unanticipated dose rate alarms. Because this violation was of very low safety significance and was entered into the licensee's corrective action program as Condition Reports CR-GGN-2012-08436 and CR-GGN-2012-09225, it was treated as a non-cited violation, consistent with Section 2.3.2.a of the NRC Enforcement Policy. (NCV 05000416/2013005-04, "Failure to Survey Resulting in Personnel Entry to a High Radiation Area")

2RS2 Occupational ALARA Planning and Controls (71124.02)

a. Inspection Scope

The inspectors assessed licensee performance with respect to maintaining occupational individual and collective radiation exposures as low as is reasonably achievable (ALARA). During the inspection, the inspectors interviewed licensee personnel and reviewed licensee performance in the following areas:

- 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

These activities constitute completion of one sample of occupational ALARA planning and controls, as defined in Inspection Procedure 71124.02.

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 Security

4OA1 Performance Indicator Verification (71151)

.1 Mitigating System Performance Index: Emergency AC Power Systems (MS06), High Pressure Injection System (MS07), Heat Removal System (MS08), Residual Heat Removal Systems (MS09), and Cooling Water Systems (MS10)

a. Inspection Scope

The inspectors reviewed the licensee's mitigating system performance index data for the period of October 2012 through September 2013 to verify the accuracy and completeness of the reported data. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, to determine the accuracy of the reported data.

These activities constitute verification of five mitigating system performance indicators: emergency ac power systems, high pressure injection system, heat removal system, residual heat removal systems and cooling water systems, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.2 Occupational Exposure Control Effectiveness (OR01)

a. Inspection Scope

The inspectors reviewed corrective action program records for unplanned exposures or losses of radiological control over locked high radiation areas and very high radiation areas during the period of January 1, 2012, to September 30, 2013. The inspectors reviewed a sample of radiologically controlled area exit transactions showing exposures greater than 100 millirem. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, to determine the accuracy of the reported data.

These activities constituted verification of the occupational exposure control effectiveness performance indicator, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.3 Radiological Effluent Technical Specifications (RETS)/Offsite Dose Calculation Manual (ODCM) Radiological Effluent Occurrences (PR01)

a. Inspection Scope

The inspectors reviewed corrective action program records for liquid or gaseous effluent releases that occurred between January 1, 2012, and September 30, 2013, and were reported to the NRC to verify the performance indicator data. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, to determine the accuracy of the reported data.

These activities constituted verification of the radiological effluent technical specifications (RETS)/offsite dose calculation manual (ODCM) radiological effluent occurrences performance indicator, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152)

.1 Routine Review

a. Inspection Scope

Throughout the inspection period, the inspectors performed daily reviews of items entered into the licensee's corrective action program and periodically attended the licensee's condition report screening meetings. The inspectors verified that licensee personnel were identifying problems at an appropriate threshold and entering these problems into the corrective action program for resolution. The inspectors verified that the licensee developed and implemented corrective actions commensurate with the significance of the problems identified. The inspectors also reviewed the licensee's problem identification and resolution activities during the performance of the other inspection activities documented in this report.

b. Findings

No findings were identified.

.2 Semiannual 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 4OA2.1, above, licensee trending efforts, and licensee human performance results. The inspectors nominally considered the 6-month period of June 17, 2013, through December 17, 2013, 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 focused their inspection on Condition Report CR-GGN-2013-05794 because it documented an apparent cause evaluation (ACE) the licensee performed to evaluate the cause of the reactor protection system (RPS) B motor-generator set (MG Set) output breaker trip. The trip of the output breaker resulted in an unintended half scram and half isolation due to the loss of the RPS Bus B. The ACE determined that the cause of the output breaker trip was an overcurrent condition that occurred when the RPS MG Set motor shorted to ground. The inspectors found that the licensee had developed a corrective action plan to address the issue.

These activities constitute completion of one semiannual trend review sample, as defined in Inspection Procedure 71152.

b. Findings

No findings were identified.

.3 Annual Follow-up of Selected Issues

a. Inspection Scope

The inspectors selected two issues for an in-depth follow-up:

- On October 16, 2013, the inspector reviewed Condition Report CR-GGN-2013-06422, which addressed the condition that the plant was operating with an offgas inleakage that was much higher than the design value described in the final safety analysis report as updated. The inspectors performed a detailed historical review of the offgas system and determined that although elevated offgas inleakage has been a long-standing issue, the licensee's corrective actions were appropriate in that the necessary assessments and evaluations were performed to verify that operating with elevated offgas inleakage did not result in offgas release exceeding any limits set forth in 10 CFR Part 50, Appendix I, 10 CFR Part 20, plant technical specifications, and the offsite dose calculation manual. Furthermore, the inspectors verified the licensee performed appropriate 10 CFR 50.59 screens and determined that operating with elevated offgas inleakage did not require commission approval.

The inspectors assessed the licensee's problem identification threshold, cause analyses, extent of condition reviews, and compensatory actions. The inspectors verified that the licensee appropriately prioritized the planned corrective actions and that these actions were adequate to correct the condition.

- On December 3, 2013, the inspectors conducted an in-depth review of operator workarounds. 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. They also evaluated the potential for improper operation of the system, for negative impacts on multiple systems, and for negative impact on the operators' ability to respond to plant transients or accidents. 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, was entering them into their corrective action program, and was proposing or implementing appropriate and timely corrective actions. 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. 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 two annual follow-up samples, which included one operator work-around sample, as defined in Inspection Procedure 71152.

b. Findings

No findings were identified.

4OA3 Follow-up of Events and Notices of Enforcement Discretion (71153)

Plant Downpower to 45 Percent due to Foreign Material Fouling of the Circulating Pump A Suction

a. Inspection Scope

On November 21, 2013, at approximately 2:47 p.m., the plant down powered to approximately 45 percent rated thermal power due to the circulating water pump A exhibiting high differential pressure on the suction screen and increased vibration readings. The licensee elected to remove the pump from service after an inability to withdraw the suction screens for the pump due to the high differential pressure. After securing the pump, the licensee withdrew the screens and sent divers into the suction basin to exam the pump impeller for damage, no damage was found. They attributed

the increased fouling to high winds in the area blowing leaves into the cooling tower basin. They cleaned the screens and returned to full power operation the next day. Inspectors responded to the control room and observed the licensee perform downpower activities. The licensee placed compensatory actions in place to monitor circulating water differential pressure for both pumps and to perform cleaning activities if differential pressure reached two inches water pressure. The long term corrective actions are being evaluated by the licensee. 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.

4OA6 Meetings, Including Exit

Exit Meeting Summary

The inspectors debriefed Mr. K. Mulligan, Site Vice President of Operations, and other members of the licensee staff of the results of the licensed operator requalification program inspection on August 22, 2013. The results of the inspection were telephonically exited with Mr. J. Giles, Training Manager, and other members of the licensee staff on October 9, 2013. The licensee representatives acknowledged the issues presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On October 24, 2013, the inspectors presented the radiation safety inspection results to Mr. J. Miller, General Manager Plant Operations, and other members of the licensee staff. The licensee acknowledged the issues presented. The licensee confirmed that any proprietary information reviewed by the inspectors had been returned or destroyed.

On January 16, 2014, the inspectors presented the inspection results to, Mr. K. 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.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

C. Beschett, Manager, Nuclear Oversight
M. Bacon, Superintendent, Simulator and Training Support
R. Benson, Radiological Supervisor, Radiation Protection
C. Brooks, Specialist, Licensing
R. Collins, Superintendent, Operations Training (Requalification Program)
J. Dorsey, Security Manager
H. Farris, Assistant Operations Manager
J. Gerard, Manager, Operations
J. Giles, Training Manager
J. Miller, General Manager Plant Operations
R. Miller, Manager, Radiation Protection
K. Mulligan, Site Vice President
M. Rasch, Superintendent, Operations Training (Initial Licensing)
F. Rosser, Supervisor, Radiation Protection
J. Seiter, Acting Manager, Licensing
R. Sylvan, Supervisor, Radiation Protection
T. Thornton, Manager, Design Engineering
S. Ward, Senior Licensing Specialist
D. Wiles, Director, Engineering
E. G. Wright, Supervisor, Radiation Protection

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000416-005-01	NCV	Failure to comply with Technical Specification 3.4.11 (Section 1R20)
05000416-005-02	NCV	Failure to Provide Adequate Procedures Results in Loss of Safety Function (Section 1R22)
05000416-005-03	NCV	Entry Into A High Radiation Area Without A Required Radiation Monitoring Device (Section 2RS1)
05000416-005-04	NCV	Failure To Survey Resulting in Personnel Entry To A High Radiation Area (Section 2RS1)

LIST OF DOCUMENTS REVIEWED

Section 1R04: Equipment Alignment

Procedures

Number	Title	Revision
04-S-01-Z51-1	Control Room HVAC System	56
04-1-01-P75-1	Standby Diesel Generator System	101
04-1-01-P75-1, Attachment IIA	Standby Diesel Generator System	101
04-1-01-P75-1, Attachment IV	Standby Diesel Generator System	101

Section 1R05: Fire Protection

Procedures

Number	Title	Revision
Fire Pre-Plan SSW-01	SSW Pump House and Valve Room 1M110 and 1M112	1
GG UFSAR	9A.5.64 Fire Area 64	
Fire Pre-Plan SSW-02	SSW Pump House and Valve Room 2M110 and 2M112	1
GG UFSAR	9A.5.65 Fire Area 65	
Fire Pre-Plan A-02	RHR A Pump Room 1A103, RHR A Heat Exch Room 1A102, RHR A Heat Exch Room 1A202, RHR A Pipe Penetration Room 1A203	2
05-S-02-V-1	Off-Normal Event Procedure, Response to Fires	0
Fire Pre-Plan DG-01	Fresh Air Corridor, 1D301, Area 12, Elevation 133	4

Other Documents

Number	Title	Revision / Date
Scaffolding Request No: RF-12-5305	Scaffolding Evaluation Request	August 14, 2012

Other Documents

Number	Title	Revision / Date
MC-Q1X77-96023, Supplement 1	Determine Maximum Allowable Outside Air Temperature With the Diesel Generator Building Outside Air Fans on High Speed and the Breezeway Banners in Place	0
MC-Q1X77-96023	Evaluate Diesel Generator Building Breezeway Airflows	0

Condition Reports

CR-GGN-2013-06527 CR-GGN-2013-02399

Section 1R06: Flood Protection Measures

Procedures

Number	Title	Revision
07-1-24-T10-1	Periodic Leak Check of Airtight Door Sealing Surfaces	5

Other Documents

Number	Title	Date
460000483	Instruction Manual for Watertight Doors at GGNS	August 5, 1977

Work Orders

WO 52306120 01 WO 52381057 01 WO 52398409 01

Section 1R11: Licensed Operator Requalification Program and Licensed Operator Performance

Procedures

Number	Title	Revision
EN-TQ-202	Simulator Configuration Control	8
EN-TQ-114	Licensed Operator Requalification Training Program Description	8

Procedures

Number	Title	Revision
EN-TQ-217	Examination Security	3
EN-TQ-201-4	SAT – Implementation Phase	4
14-S-02-20	Preparing, Conducting, and Review of Simulator Evaluations	9
14-S-02-21	Preparers Guide for Simulator Evaluation Scenarios	8
02-S-01-39	Maintaining Watchstanding Proficiency	6
EN-TQ-210	Conduct of Simulator Training	7
EN-NS-112	Medical Program	11
05-1-02-III-003	Reduction in Recirculation System Flow	112

Condition Reports

CR-GGN-2009-04336	CR-GGN-2012-01707	CR-GGN-2012-01842
CR-GGN-2012-05260	CR-GGN-2012-05756	CR-GGN-2012-06105
CR-GGN-2012-11839	CR-GGN-2012-13015	CR-GGN-2013-00426
CR-GGN-2013-05139	CR-GGN-2013-05149	CR-GGN-2013-05935
CR-GGN-2013-06377	CR-GGN-2013-05672	CR-GGN-2013-00999
CR-GGN-2012-06902	CR-GGN-2012-01838	

Simulator Discrepancy Reports

07-0110	09-0114	10-0054	11-0044
12-0216	12-0287	12-0445	12-0468
12-0613	12-0656	12-0657	13-0038
13-0039	13-0040	13-0041	13-0042
13-0043	13-0071	13-0075	13-0090
13-115			

Other Documents

Number	Title	Revision / Date
TQF-202-SBT	Scenario Based Testing Checklist	0
SST02	ANSI 3.5 Simulator Steady State Test #2, 69% Core Thermal Power	May 24, 2013
SST03	ANSI 3.5 Simulator Steady State Test #3, 51% Core Thermal Power	May 24, 2013
GJPM-OPS-E1204	Start Suppression Pool Cooling	2
GJPM-OPS-P7523	Start and Parallel Diesel Generator 11 to Bus 15AA	0
GJPM-OPS-P4271	Rotate CCW Pumps	2
GJPM-OPS-C11206	Control Rod Operability Surveillance: Four Rods Drift	3
GJPM-OPS-E2216	Raise Suppression Pool Level Using HPCS	0
GJPM-OPS-E2215	Raise Suppression Pool Level Using RCIC/HPCS	3
GJPM-OPS-B3313	Reset Recirc FCV Runback	2
GJPM-OPS-C11016	CRD Pump Rotation	2
GJPM-OPS-C7101	RPS Motor Generator Startup	2
GJPM-OPS-P7505	Placing the Diesel-Driven Air Compressor in Service	3
GJPM-OPS-EAL06	Fire w/ Electrical Failures	4
GJPM-OPS-B3310	Returning a Recirc Loop to Services at Low Power	5
GJPM-OPS-C7104	Transfer RPS B to Normal Power Source and RPS A to Alternate Power Source	0
GJPM-OPS-E5102	RCIC Manual Startup	7
GJPM-OPS-B3303	Reactor Recirc System Startup	5

Other Documents

Number	Title	Revision / Date
GJPM-OPS-E22103	Operating HPCS in the Test Return Mode (Faulted)	3
GJPM-OPS-B3304	Reactor Recirc System Startup	5
GJPM-OPS-B3317	Shifting Reactor Recirc Pumps to Slow Speed	1
GJPM-OPS-B3306	Shifting Reactor Recirc Pumps to Fast Speed	7
GJPM-OPS-E5105	Start RCIC for RPV Pressure Control	3
GJPM-OPS-B3315	Shifting Reactor Recirc Pumps to Fast Speed	4
GJPM-OPS-E5104	RCIC Manual Startup - Normal	4
GJPM-OPS-P4202	Align CCW to FPCCU Heat Exchanger A	1
GJPM-OPS-E22104	Performing HPCS Quarterly Functional Test	0
GJPM-OPS-C110181	Rotating Operating CRD Pumps	3
GJPM-OPS-P8104	Start and Parallel D/G 13 with Offsite – Local	2
GJPM-OPS-C6101	Startup RHR in Suppression Pool Cooling form the Remote Shutdown Panels	4
GJPM-OPS-EAL10	Emergency Event Classification, Security Threat	3
GJPM-OPS-EOP26B	Align Fire Water to LPCS per EP Attachment 26	2
GSMS-LOR-AEX23	ESF Transformer 11 Trip/15BA1 Trip/Unisolable Steam Leaks in the Auxiliary Building Steam Tunnel and RCIC Room Requiring Emergency Depressurization	10
GSMS-LOR-AEX18	16BB3 Trip/Fuel Failure/EHC Leak/LOCA	12
GSMS-LOR-AEX04	16BB3 Trip/Inadvertent Recirculation Pump Downshift/Small Break LOCA with Degraded Electrical Sources	10
GSMS-LOR-AEX24	15BA2 Trip/RFPT Trip/Turbine Building Feedwater Line Break/ATWS	11

Other Documents

Number	Title	Revision / Date
GGNS-TT-02	Simulator Transient Test, Simultaneous Trip of All Feedwater Pumps, Transient Test B2.2.1(2)	6
GGNS-TT-06	Simulator Transient Test, Main Turbine Trip from Maximum Power Level Which Does Not Result in Immediate Reactor Scram, Transient Test B2.2.1(6)	6
GGNS-TT-09	Simulator Transient Test, DBA Main Steam Line Break with Loss of Off-Site Power, Transient Test B2.2.1(9)	5
GGNS-TT-01	Simulator Transient Test, Manual Scram, Transient Test B2.2.1(1)	7
TQF-114-EXMPAK	Biennial/Annual Exam Review Form	3
TQF-114-AOEJPM	Annual Operating Exam JPM Quality Checklist	4
TQF-114-AOESIM	Annual Operating Exam Simulator Scenario Set Quality Checklist	5
GGNS-TT-03	Simulator Transient Test, Simultaneous Closure of all Main Steam Isolation Valves, Transient Test B2.2.1 (3)	3
GSMS-LOR-AEX13	Jet Pump Failure/Recirculation Pump Trip/ATWS with PSP Exceeded	12
GSMS-LOR-AEX29	16BB3 Trip/Recirculation Pump A Shaft Shear/Thermal Hydraulic Instability/Feedwater System Rupture in the Drywell/LOCA/Reactor Water Level Restoration Using Recovered Systems	11
GSMS-LOR-AEX26	RPS MG Set Trip/Bus 15AA Lockout/ Feedwater Line Rupture in the Drywell/ LOCA/RPV Level Restoration Using SSW B	13
GSMS-LOR-AEX01	“C” Level Instrument Failure/FW Heater 6A Tube Leak/FW Line Rupture in Drywell	9
GSMS-LOR-AEX17	Offgas Post-Treatment Radiation Monitor Downscale/Loss of Condenser Vacuum/LOCA with Steam Cooling Required	17

Other Documents

Number	Title	Revision / Date
GSMS-LOR-AEX20	Main Transformer Trouble/ESF 11 Trip/Main Turbine Trip/ATWS without Bypass Valves	10
GSMS-LOR-AEX22	Spurious HPCS System Initiation/ESF Transformer 21 Lockout/LOCA/ATWS with PSP Exceeded	10
GSMS-LOR-AEX19	15BA2 Trip/CRD Pump Trip/Main Turbine Trip/ATWS/Suppression Pool Leak	12
GSMS-LOR-AEX21	Drifting, Stuck Control Rod/RFPT Trip/Drywell Feedwater Line Break/ATWS	10
GGNS-TT-04	Simulator Transient Test, Simultaneous Trip of All Recirculation Pumps, Transient Test B2.2.1(4)	5
GGNS-TT-05	Simulator Transient Test, Single Recirculation Pump Trip, Transient Test B2.2.1(5)	6
GGNS-TT-07	Simulator Transient Test, Maximum Rate Power Ramp 100-75-100%, Transient Test B2.2.1(7)	7
GGNS-TT-10	Simulator Transient Test, MSIV Closure with Stuck Open Safety Relief Valve, Transient Test B2.2.1(10)	5
	LT-Apparent Cause Evaluation Report, NRC Operating Exam Failures, CR-GGN-2013-00999, Event Date: February 6, 2013	March 8, 2013
	2013 Annual Operating Test and Biennial Written Exam Results	September 27, 2013

Section 1R12: Maintenance Effectiveness

Procedures

Number	Title	Revision
EN-DC-203	Maintenance Rule Program	1
EN-DC-205	Maintenance Rule Monitoring	4
EN-DC-206	Maintenance Rule (a)(1) Process	2

Section 1R12: Maintenance Effectiveness

Procedures

Number	Title	Revision
EN-DC-204	Maintenance Rule Scope and Basis	2

Other Documents

Number	Title	Date
	Shutdown Condition 1, Time to 200°F, 0.15 Hours	November 2, 2013 1:40 a.m.
	Shutdown Condition 1, Time to 200°F, 0.2 Hours	November 2, 2013 1:33 p.m.
	Shutdown Condition 1, Time to 200°F, 0.2 Hours	November 2, 2013 6:25 p.m.
	Shutdown Condition 1, Time to 200°F, 0.3 Hours	October 6, 2013 5:35 a.m.
	System Health Report: GGNS, Unit 1, E22-High Pressure Core Spray	November 18, 2013
CA-299	(a)(1) Evaluation and Action Plan (CR-GGN-2011-00070)	
	Expert Panel Meeting Minutes	December 5, 2012
	(a)(1) Evaluation and Action Plan for the P51 System	
	Plan of Action PAD B High Flow Alarm Condition, CR-GGN-2012-11805	April 18, 2014
	Plant Air Work Orders for the Week of September 10, 2013	
Attachment 9.1	Failure Mode Analysis, CR-GGN-2013-7038, Plant Air Compressor A Tripped due to a hard fault, causing Bus 16 Under Voltage	November 12, 2013
	System Health Report, P51/P53 Plant and Instrument Air System	November 21, 2013

Condition Reports

CR-GGN-2013-00849	CR-GGN-2013-03233	CR-GGN-2013-05133
CR-GGN-2013-01730	CR-GGN-2013-03421	CR-GGN-2013-05475
CR-GGN-2013-01868	CR-GGN-2013-03866	CR-GGN-2013-05979
CR-GGN-2013-02517	CR-GGN-2013-03931	CR-GGN-2013-05997
CR-GGN-2013-02533	CR-GGN-2013-04367	CR-GGN-2013-06025
CR-GGN-2013-02534	CR-GGN-2013-04388	CR-GGN-2013-06725
CR-GGN-2013-02547	CR-GGN-2013-05106	CR-GGN-2012-10152
CR-GGN-2011-08451	CR-GGN-2012-10184	CR-GGN-2013-02751
CR-GGN-2011-08524	CR-GGN-2012-10189	CR-GGN-2013-03440
CR-GGN-2011-08914	CR-GGN-2012-10356	CR-GGN-2013-04359
CR-GGN-2012-00005	CR-GGN-2012-10358	CR-GGN-2013-04428
CR-GGN-2012-00013	CR-GGN-2012-10375	CR-GGN-2013-04715
CR-GGN-2012-00059	CR-GGN-2012-10474	CR-GGN-2013-05032
CR-GGN-2012-00063	CR-GGN-2012-10543	CR-GGN-2013-05153
CR-GGN-2012-00073	CR-GGN-2012-10968	CR-GGN-2013-05166
CR-GGN-2012-00100	CR-GGN-2012-10982	CR-GGN-2013-05196
CR-GGN-2012-00150	CR-GGN-2012-11043	CR-GGN-2013-05209
CR-GGN-2012-01181	CR-GGN-2012-11098	CR-GGN-2013-05255
CR-GGN-2012-01563	CR-GGN-2012-11165	CR-GGN-2013-05256
CR-GGN-2012-05067	CR-GGN-2012-11774	CR-GGN-2013-05289
CR-GGN-2012-05215	CR-GGN-2012-11805	CR-GGN-2013-05290
CR-GGN-2012-06019	CR-GGN-2012-11815	CR-GGN-2013-05315
CR-GGN-2012-06690	CR-GGN-2012-11816	CR-GGN-2013-05799
CR-GGN-2012-08593	CR-GGN-2012-11859	CR-GGN-2013-06092
CR-GGN-2012-08812	CR-GGN-2012-12124	CR-GGN-2013-06425
CR-GGN-2012-09005	CR-GGN-2012-12600	CR-GGN-2013-06449

Condition Reports

CR-GGN-2012-09131	CR-GGN-2013-01429	CR-GGN-2013-06508
CR-GGN-2012-09337	CR-GGN-2013-01430	CR-GGN-2013-06564
CR-GGN-2012-09345	CR-GGN-2013-01734	CR-GGN-2013-06565
CR-GGN-2012-09364	CR-GGN-2013-02043	CR-GGN-2013-06624
CR-GGN-2012-09442	CR-GGN-2013-02221	CR-GGN-2013-06625
CR-GGN-2012-09575	CR-GGN-2013-02262	CR-GGN-2013-06702
CR-GGN-2012-09828	CR-GGN-2013-02303	CR-GGN-2013-06906
CR-GGN-2012-09830	CR-GGN-2013-02457	CR-GGN-2013-07029
CR-GGN-2012-10028	CR-GGN-2013-02459	CR-GGN-2013-07038
CR-GGN-2012-10099	CR-GGN-2013-02608	CR-GGN-2013-02611
CR-GGN-2011-08720	CR-GGN-2011-09340	CR-GGN-2012-07922
CR-GGN-2013-05019	CR-GGN-2012-12937	

Work Orders

WO 329658-01	WO 329658-02	WO 52468963-01	WO 52468963-02	WO 52468963-03
WO 325211-01	WO 355465-01	WO 355465-02	WO 355465-03	WO 355465-04

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

Number	Title	Revision
01-S-18-6	Risk Assessment of Maintenance Activities	12
02-S-01-17	Control of Limiting Conditions for Operations	126
06-OP-1R20-W-0001	Plant AC and DC Electrical Power Distribution	109

Other Documents

Number	Title	Revision / Date
	Shutdown Operations Protection Plan, FO 19-04	14

Other Documents

Number	Title	Revision / Date
13-0020	Standing Order	November 27, 2013
GGNS PACA and Div3AOT	Entergy PRA White Paper: Temporary Air Compressor for PAC A during Division 3 AOT	November 26, 2013
LCOTR No.: 1-TS-13-0291	HPCS, SSW C, Div 3 Diesel Generator, Div 3 Battery Bank	175

Section 1R15: Operability Determinations and Functionality Assessments

Procedures

Number	Title	Revision
06-OP-1E51-Q-0003	RCIC System Quarterly Pump Operability Verification	135
06-OP-1E51-Q-0003	RCIC System Quarterly Pump Operability Verification	104

Calculations

Number	Title	Revision
3.6.22-Q	Mississippi Power and Light Company Grand Gulf Nuclear Station Units 1 and 2	0
MC-QSZ51-87072	Control Room A/C Unit	0
MC-Q1Z51-87206	Maximum Stress Conditions in the Shaft of Motor QSZ51B002B (Ref. DMR 119-87)	0

Other Documents

Number	Title	Revision
ASME OM-2012	Inservice Testing of Pumps in Light-Water Reactor Nuclear Power Plants-Pre-2000 Plants, ISTB-3100 Preservice Testing	
GGNS-92-0002	The Evaluation of Safety Related Electrical Equipment In Various Rooms With Elevated Post LOCA Temperatures	2
GGNS-SDC-Z51	Control Room HV AC System	2

Other Documents

Number	Title	Revision
460000535	Operations and Maintenance Manual for Control Room Air Conditioning Units	
NESE 757	Installation, Operation, and Maintenance Instructions for Control Room Air Conditioning Units QSZ51B003A-A and QSZ51B003B-B	1
ER NO.: 97/0874	Primary System: E51, Component: 1E51C001	0
ER NO.: 97/0962	Primary System: E51, Component: E51C002	0
ASME OM-1987 87	Inservice Testing of Pumps in Light-Water Reactor Power Plants	

Condition Reports

CR-GGN-2012-13125	CR-GGN-2013-06197	CR-GGN-2013-06718
CR-GGN-2008-02657	CR-GGN-2011-05012	

Engineering Changes

EC# 0000006039

Section 1R19: Post-Maintenance Testing

Procedures

Number	Title	Revision
06-OP-1C51-V-001, Attachment I	SRM Channel Functional Test	110
06-OP-1C51-V-0001, Attachment II	SRM Channel Functional Test	110
06-OP-1E22-Q-0002	HPCS Quarterly Valve Test	110
06-OP-1P41-Q-0006	HPCS Service Water System Valve and Pump Operability Test	114
06-OP-1P81-M-0002, Attachment II	HPCS Diesel Generator 13 Functional Test	127
06-OP-1E22-Q-0005	HPCS Functional Test	121

Procedures

Number	Title	Revision
06-OP-1E22-M-0001	HPCS Monthly Functional Test	106
06-OP-1P81-M-0002, Attachment I	HPCS Diesel Generator 13 Functional Test	127
06-OP-1P81-M-0002, Attachment II	HPCS Diesel Generator 13 Functional Test	127

Other Documents

Number	Title
	MOV Torque Switch Setpoint Methodology Set Point Calculations, Valve No.: 1E22F012

Work Orders

WO 00317521 02	WO 00317521 01	WO 00360486 01	WO 52509641 01	WO 52509642 01
WO 00360351 01	WO 00360351 05	WO 00360800 01	WO 00317907 01	WO 00360223 01
WO 00360541 01	WO 00360870 01			

Section 1R20: Refueling and Other Outage Activities

Procedures

Number	Title	Revision
03-1-01-3, Attachment III	Data Sheet 1 Plant Shutdown Heatup/Cooldown Data Sheets	125
06-OP-1C51-V-0002, Attachment I	IRM Functional Test	108
06-OP-1C51-V-0002, Attachment II	IRM Functional Test	108
03-1-01-3, Attachment III	Plant Shutdown Heatup/Cooldown Data Sheets, October 10-12, 2013	125
03-1-01-1, Data Sheet I	Cold Shutdown to Generator Carrying Minimum Load Heatup/Cooldown Record	161
03-1-01-1	Cold Shutdown to Generator Carrying Minimum Load	162

Other Documents

Number	Title	Date
	Shutdown Condition 1, Time to 200°: 0.15 Hours	October 4, 2013 11:30 p.m.
	Shutdown Condition 1, Time to 200°: 0.3 Hours	October 6, 2013 3:35 a.m.
	Shutdown Condition 1, Time to 200°: 0.4 Hours	October 7, 2013 3:30 a.m.
	Shutdown Condition 1, Time to 200°F, 0.3 Hours	October 7, 2013 4:30 p.m.
	Shutdown Condition 1, Time to 200°F, 0.3 Hours	October 18, 2013 2:45 a.m.
	GGNS FO-19-06-Forced Outage Daily Update 0600 Hours, Day 0 and 18 Hours and 37 Minutes of FO-19-06 Scheduled 128 Hours	October 5, 2013
	GGNS FO-19-06-Forced Outage Daily Update 0600 Hours, Day 1 and 6 Hours and 37 Minutes of FO-19-06 Scheduled 128 Hours	October 6, 2013
	GGNS FO-19-06-Forced Outage Daily Update 1800 Hours, Day 1 and 6 Hours and 37 Minutes of FO-19-06 Scheduled 128 Hours	October 6, 2013
	GGNS FO-19-06-Forced Outage Daily Update 0600 Hours, Day 2 and 17 Hours and 37 Minutes of FO-19-06 Scheduled 128 Hours	October 7, 2013

Condition Reports

CR-GGN-2013-07021 CR-GGN-2013-07617

Section 1R22: Surveillance Testing

Procedures

Number	Title	Revision
06-CH-1B21-O-0002	Reactor Coolant Routine Chemistry	108
06-CH-1B21-W-0008	Reactor Coolant Dose Equivalent Iodine	105
EN-LI-102	Corrective Action Process	22

Procedures

Number	Title	Revision
06-IC-1E31-Q-1016	RCIC Steam Supply Low Pressure Functional Test	110
06-IC-1E31-Q-1016	RCIC Steam Supply Low Pressure Functional Test	111

Other Documents

Number	Title
GFIG-OPS-E5100	RCIC System, Steam Side, Figure 2

Work Orders

WO 52519627 01 WO 00197800 01 WO 52515235 01

Section 1EP4: Emergency Action Level and Emergency Plan Changes

Number	Title	Revision
10-S-01-1	Activation of the Emergency Plan	123

Section 2RS1: Radiological Hazard Assessment and Exposure Controls

Procedures

Number	Title	Revision
EN-RP-100	Radiation Worker Expectations	7
EN-RP-101	Access Control for Radiologically Controlled Areas	7
EN-RP-102	Radiological Control	4
EN-RP-106-01	Radiological Survey Guidelines	0
EN-RP-108	Radiation Protection Posting	13
EN-RP-123	Radiological Controls for Highly Radioactive Objects	1
EN-RP-143	Source Control	9

Condition Reports

CR-GG-2012-04112	CR-GG-2012-01812	CR-GG-2012-06498	CR-GG-2012-07246
CR-GG-2012-05088	CR-GG-2012-05931	CR-GG-2012-05953	CR-GG-2012-05287
CR-GG-2012-08473	CR-GG-2012-08493	CR-GG-2013-04527	CR-GG-2013-04656

Radiation Surveys

Number	Title	Date
GG-1203-2991	147' Drywell	March 24, 2012
GG-1204-1625	147' Drywell	April 16, 2012
GG-1203-3206	147' Drywell	March 25, 2012
GG-1203-0614	161' Drywell	March 4, 2012
GG-1203-0624	100' Drywell	February 19, 2012
GG-1301-0172	166' Turbine Building	January 14, 2013
GG-1301-0203	87' Turbine Building Condenser Bay	January 16, 2013
GG-1301-0177	139' Auxiliary Building	January 15, 2013

Radiation Work Permits

Number	Title	Revision
2013-1300	Drywell Initial Entry	1 and 2
2013-1301	PM's, RT's, Surveillances, Tours, Inspection, and General Maintenance in the Drywell	1
2013-1310	Flow Control Valve 1B33F060A Maintenance	00
2013-1081	Walkdowns in Steam Affected Areas	00

Section 2RS2: Occupational ALARA Planning and Controls

Procedures

Number	Title	Revision
EN-CY-112	BWR Shutdown and Startup Chemistry	0
EN-RP-105	Radiological Work Permits	12
EN-RP-110	ALARA Program	12

Section 2RS2: Occupational ALARA Planning and Controls

Procedures

Number	Title	Revision
EN-RP-110-02	Elemental Cobalt Sampling	0
EN-RP-110-03	Collective Radiation Exposure (CRE) Reduction Guidelines	2
EN-RP-110-05	ALARA Planning and Controls	2
03-1-01-3	Integrated Operating Instruction – Plant Shutdown	125
04-1-01-G33-1	System Operating Instruction – Reactor Water Cleanup	153

Audits, Self-Assessments, and Surveillances

Number	Title	Date
LO-GLO-2012-0056	Pre-NRC Inspection for ALARA Planning and Controls	August 28, 2013
WT-WTGGN-2013-00015	Boiling Water Reactor Owner Group (BWROG) Radiation Protection/ALARA Committee Meeting	September 8, 2013

Radiation Work Permit Packages

Number	Title	Revision
2013-1063	Condenser In-Leakage Investigation	1
2013-1081	Walk Downs in Steam Affected Areas	00
2013-1083	N22 Pre-coat Valve Work	1
2013-1085	RWCU B Pump Room (1A210) Seal Replacement	4
2013-1300	Drywell Entry	2
2013-1301	PMs, RTs, Surveillances, Tours, Inspections, and General Maintenance in the Drywell	3
2013-1307	Replace SRM E Drive Cable / Troubleshoot IRMs	1
2013-1308	Flow Control Valve 1B33F060B Maintenance	1
2013-1310	Flow Control Valve 1B33F060A Maintenance	00

Condition Reports

CR-GGN-2012-08436	CR-GGN-2012-09225	CR-GGN-2013-00365	CR-GGN-2013-02038
CR-GGN-2013-04059	CR-GGN-2013-04439	CR-GGN-2013-05006	CR-GGN-2013-05295
CR-GGN-2013-06361	CR-GGN-2013-06411	CR-GGN-2013-06454	CR-GGN-2013-06520

Radiation Surveys

Number	Title	Date
GG-1206-0630	166' Turbine Bioshield	June 8, 2012
GG-1206-0716	166' Turbine Center Section	June 20, 2012
GG-1212-0360	166' Turbine Center Section – N11F304B found leaking at seal	December 15, 2012
GG-1301-0000	87' TB Condenser Bay Westside – Walkdown for Leaks	January 1, 2013
GG-1310-0108	Subpile and Carousel – Shielding for SRM Cable Work	October 5, 2013
GG-1310-0201	RWCU B Pump Room – 119' Aux Building	October 9, 2013

Other Documents

Number	Title	Date
LO-GLO-2012-0056	Pre-NRC Inspections for ALARA Planning and Controls	August 28, 2013
WT-WTGGN-2013-00015	Boling Water Reactor Owner Group (BWROG) Radiation Protection/ALARA Committee Meeting	September 8, 2013

Section 4OA1: Performance Indicator Verification

Procedures

Number	Title	Revision
17-S-06-25, Attachment IV	E12 Residual Heat Removal A Train	102
17-S-06-25, Attachment IV	E51 Reactor Core Isolation Cooling	102
17-S-06-25, Attachment IV	E22 High Pressure Core Spray	102

Procedures

Number	Title	Revision
01-S-18-6	Risk Assessment of Maintenance Activities	12

Other Documents

Title	Date
Reliability Data Edit for MSPI Residual Heat Removal System	October 2012-September 2013
Reliability Data Edit for MSPI Heat Removal System	October 2012-September 2013
Reliability Data Edit for MSPI High Pressure Injection System	October 2012-September 2013
Reliability Data Edit for MSPI Emergency AC Power System	October 2012-September 2013
Reliability Data Edit for MSPI Heat Removal System	November 2012
Residual Heat Removal (RHR/E12) System Exclusion of Accrued Unavailability Time	
CDE Unit Performance for MSPI	October 2012
CDE Unit Performance for MSPI	November 2012
CDE Unit Performance for MSPI	December 2012
CDE Unit Performance for MSPI	January 2013
CDE Unit Performance for MSPI	February 2013
CDE Unit Performance for MSPI	March 2013
CDE Unit Performance for MSPI	April 2013
CDE Unit Performance for MSPI	May 2013
CDE Unit Performance for MSPI	June 2013
CDE Unit Performance for MSPI	July 2013
CDE Unit Performance for MSPI	August 2013
CDE Unit Performance for MSPI	September 2013
Reliability Data Edit for MSPI Cooling Water System 1	October 2012
Reliability Data Edit for MSPI Emergency AC Power System	October 2012

Condition Report

CR-GGN-2013-06720

Section 4OA2: Problem Identification and Resolution

Procedures

Number	Title	Revision
EN-LI-100	Process Applicability Determination	12
EN-LI-101	10 CFR 50.59 Review Program	3
EN-FAP-OP-006	Operator Aggregate Impact Index Performance Indicator	0
02-S-01-25, Attachment II	Deficient Equipment Identification, CI Tag Log	18
02-S-01-25, Attachment III	Annunciator Status Checksheet, Panel 680	17
02-S-01-25, Attachment III	Annunciator Status Checksheet, Panel 870	17
02-S-01-25, Attachment II	Deficient Equipment Identification, CI Tag Log	16
02-S-01-25, Attachment III	Annunciator Status Checksheet, Panel P601-18A	17
02-S-01-25, Attachment III	Annunciator Status Checksheet, Panel 854	17
07-S-12-40	General Cleaning and Inspection of Rotating Electrical Equipment	2
EN-DC-153	Preventive Maintenance Component Classification	9
EN-DC-324	Preventive Maintenance Program	11
EN-DC-335	PM Basis Template	5

Calculations

Number	Title	Revision
MC-N1N61-02006	Offgas Inputs for XC-Q1G17-97001	0
XC-Q1G17-97001	Routine Radioactive Releases in Liquid and Gaseous Effluents	1

Other Documents

Number	Title	Revision / Date
NEDO-21143-0	Radiological Accident Evaluation-The CONAC03 Code	December 1981
ER-GG-2003-0300-000	1N64N010/1N64N061-Offgas Flow Element Replacement	0
	Daily Plant Status Report, Grand Gulf	December 2, 2013
	Daily Plant Status Report, Operator Aggregate Index	December 3, 2013
	GGNS CRO Turnover Activities	October 22, 2013
	Daily Plant Status Report, Grand Gulf	November 26, 2013
	Daily Plant Status Report, Operator Aggregate Index	November 14, 2013
	Daily Plant Status Report, Grand Gulf	November 20, 2013
Passport 10 Report	1N21L658B Turn Gear Alarm Sealed and Secured, WO 00297556	November 20, 2013
Passport 10 Report	POB XFMR 24 Trouble, WO 00301216	November 20, 2013
Passport 10 Report	1H13P829 Red Cabinet Failure Light Remained On, WO 00321794	November 20, 2013
Passport 10 Report	1P33R061A: IMPL EC 26195-Delete/Abandon Cond Tube Sheet Leak, WO 00334217	November 20, 2013
Passport 10 Report	1B211L622B RX DIV 1 ISOL SYS OOSVC Came in and Cleared, WO 00352558	November 20, 2013
Passport 10 Report	Received Alarm Received “TURB BCU CAB FAIL” (P680-9A-E2)	November 20, 2013
Passport 10 Report	1D17L600 OG-Pretreat RAD HI Comes in Alarm Spuriously, WO 00365771	November 20, 2013
Passport 10 Report	1N31N022 Fault Occurred During Test Cal Switch, WO 00324619	November 20, 2013

Other Documents

Number	Title	Revision / Date
Passport 10 Report	1E31R608: Replace Chart Recorder Per ECN-43075, WO 00344822	November 20, 2013
Passport 10 Report	1N32M609 MSCV Test SW 'A' Stop Valve Indication Out, WO 00355969	November 20, 2013
NIMM111-Task Nuclear Detail	SP47R603 Control Room HMI Does Not Show Accurate Information, WO 00365291 01	November 20, 2013
NIMM111-Task Nuclear Detail	TB Filter Moisture High Annunciator Will Not Clear, WO 00365923 01	November 20, 2013
NIMM111-Task Nuclear Detail	1N32M609 MSCV TEST SW 'A' Stop Valve Open Indication Out, WO 00355969 01	November 20, 2013
NIMM111-Task Nuclear Detail	1N64F441 Valve Has Dual Indication, WO 00357747 01	November 20, 2013
NIMM111-Task Nuclear Detail	Drywell Air Cooler Drain Flow Recorder 1E31R609, WO 00365673 01	November 20, 2013
	Control Room Log for Additional Monitoring Actions and Frequency: Compensatory Action 12-198	
NUREG / CR-4939 BNL / NUREG-52031	Volume 1: Performance Evaluation and Maintenance Practices	November 1987
IEE Std 432-1992	IEE Guide for Insulation Maintenance for Rotating Electric Machinery (5 hp to less than 10,000 hp)	
IEE Electrical Insulation Magazine	Estimation of Lifetime Expectancies of Motors	May/June 1992 Vol. 8, No. 3
DRN No. 05-1185	Update Tech Spec References with Corrected Improved Tech Spec Numbers and TRM Sections	0

Condition Reports

CR-GGN-2013-06422	CR-GGN-2001-01037	CR-GGN-2002-02191
CR-GGN-2004-03991	CR-GGN-2007-02281	CR-GGN-2009-06445
CR-GGN-2010-01747	CR-GGN-2013-07594	CR-GGN-2013-07630
CR-GGN-2013-04983	CR-GGN-2013-05816	CR-GGN-2013-01267
CR-GGN-2013-06387	CR-GGN-2013-04778	CR-GGN-2013-06600

Condition Reports

CR-GGN-2013-04729 CR-GGN-2013-05794 CR-GGN-2013-06942
CR-GGN-2013-07038 CR-HQN-2013-00877

Work Orders

WO 268322 WO 52323390 01

Section 4OA3: Follow-up of Events and Notices of Enforcement Discretion

Condition Reports

CR-GGN-2013-07211

The following items are requested for the
Occupational Radiation Safety Inspection
at Grand Gulf Nuclear Station
(October 21 – 25, 2013)
Integrated Report 2013005

Inspection areas are listed in the attachments below.

Please provide the requested information on or before October 7, 2013.

Please submit this information using the same lettering system as below. For example, all contacts and phone numbers for Inspection Procedure 71124.01 should be in a file/folder titled "1- A," applicable organization charts in file/folder "1- B," etc.

If information is placed on *ims.certrec.com*, please ensure the inspection exit date entered is at least 30 days later than the onsite inspection dates, so the inspectors will have access to the information while writing the report.

In addition to the corrective action document lists provided for each inspection procedure listed below, please provide updated lists of corrective action documents at the entrance meeting. The dates for these lists should range from the end dates of the original lists to the day of the entrance meeting.

If more than one inspection procedure is to be conducted and the information requests appear to be redundant, there is no need to provide duplicate copies. Enter a note explaining in which file the information can be found.

If you have any questions or comments, please contact Larry Ricketson at (817)200-1165 or Larry.Ricketson@nrc.gov.

Currently, the other inspector will be Natasha Greene. She may be contacted at (817)200-1154 or Natasha.Greene@nrc.gov.

PAPERWORK REDUCTION ACT STATEMENT

This letter does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing information collection requirements were approved by the Office of Management and Budget, control number 3150-0011.

1. Radiological Hazard Assessment and Exposure Controls (71124.01)
Date of Last Inspection: March 15, 2012

A. List of contacts (with official title) and telephone numbers for the Radiation Protection Organization Staff and Technicians

B. Applicable organization charts

C. Audits, self-assessments, and LERs written since date of last inspection, related to this inspection area

D. Procedure indexes for the radiation protection procedures

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. Radiation Protection Program Description
2. Radiation Protection Conduct of Operations
3. Personnel Dosimetry Program
4. Posting of Radiological Areas
5. High Radiation Area Controls
6. RCA Access Controls and Radworker Instructions
7. Conduct of Radiological Surveys
8. Radioactive Source Inventory and Control
9. Declared Pregnant Worker Program

F. List of corrective action documents (including corporate and subtiered systems) since date of last inspection

1. Initiated by the radiation protection organization
2. Assigned to the radiation protection organization
3. Identify any CRs that are potentially related to a performance indicator event

NOTE: The lists should indicate the significance level of each issue and the search criteria used. Please provide documents which are "searchable" so that the inspector can perform word searches.

If not covered above, a summary of corrective action documents since date of last inspection involving unmonitored releases, unplanned releases, or releases in which any dose limit or administrative dose limit was exceeded (for Public Radiation Safety Performance Indicator verification in accordance with IP 71151)

G. List of radiologically significant work activities scheduled to be conducted during the inspection period (If the inspection is scheduled during an outage, please also include a list of work activities greater than 1 rem, scheduled during the outage with the dose estimate for the work activity.)

H. List of active radiation work permits

I. Radioactive source inventory list

2. Occupational ALARA Planning and Controls (71124.02)
Date of Last Inspection: November 16, 2012

A. List of contacts (with official title) 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