



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION IV
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ARLINGTON, TX 76011-4511

February 9, 2018

Mr. Eric Larson
Site Vice President
Entergy Operations, Inc.
Grand Gulf Nuclear Station
P.O. Box 756
Port Gibson, MS 39150

SUBJECT: GRAND GULF NUCLEAR STATION – NRC INTEGRATED INSPECTION
REPORT 05000416/2017004 AND INDEPENDENT SPENT FUEL STORAGE
INSTALLATION INSPECTION REPORT 07200050/2017001

Dear Mr. Larson:

On December 31, 2017, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Grand Gulf Nuclear Station. On January 10, 2018, the NRC inspectors discussed the results of this inspection with you and other members of your staff. The results of this inspection are documented in the enclosed report.

The NRC inspectors did not identify any finding or violation of more than minor significance.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA G.Miller for/

Jason Kozal, Branch Chief
Project Branch C
Division of Reactor Projects

Docket No. 50-416 and 72-050
License No. NPF-29

Enclosure:
Inspection Report 05000416/2017004 and
07200050/2017001
w/ Attachment: Supplemental Information

GRAND GULF NUCLEAR STATION – NRC INTEGRATED INSPECTION
 REPORT 05000416/2017004 AND INDEPENDENT SPENT FUEL STORAGE INSTALLATION
 INSPECTION REPORT 07200050/2017001 – February 9, 2018

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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket: 05000416 and 07200050
License: NPF-29
Report: 05000416/2017004 and 07200050/2017001
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, 2017
Inspectors: M. Young, Senior Resident Inspector
N. Day, Resident Inspector
B. Correll, Reactor Inspector
S. Hedger, Emergency Preparedness Inspector
E. Love, Senior Inspector, DSFM NMSS
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C. Speer, Resident Inspector
C. Stott, Reactor Inspector
F. Thomas, Resident Inspector
Approved By: Jason Kozal
Chief, Project Branch C
Division of Reactor Projects

Enclosure

SUMMARY

IR 05000416/2017004 and 07200050/2017001; 10/01/2017 – 12/31/2017; Grand Gulf Nuclear Station; Integrated Inspection Report.

The inspection activities described in this report were performed between October 1 and December 31, 2017, by the resident inspectors at Grand Gulf Nuclear Station, inspectors from the NRC's Region IV office, and other NRC offices. The significance of inspection findings is indicated by their color (i.e., Green, greater than Green, White, Yellow, or Red), determined using Inspection Manual Chapter 0609, "Significance Determination Process," dated April 29, 2015. Their cross-cutting aspects are determined using Inspection Manual Chapter 0310, "Aspects within the Cross-Cutting Areas," dated December 4, 2014. Violations of NRC requirements are dispositioned in accordance with the NRC Enforcement Policy. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," dated July 2016.

No findings were identified.

PLANT STATUS

On October 1, 2017, operations personnel were commencing a restart from a forced outage.

On October 18, 2017, operations personnel increased power to 100 percent following the forced outage.

On November 16, 2017, operations personnel performed a plant shutdown to repair a degrading reactor recirculation pump B seal assembly, and entered Mode 4 on November 17, 2017.

On November 24, 2017, operations personnel performed a startup; however, due to an issue with neutron monitoring instrumentation, operations personnel transitioned to perform a plant shutdown, and entered Mode 4 on November 25, 2017.

On December 1, 2017, operations personnel performed a startup from a forced outage; however, due to drywell cooler issues, operations personnel transitioned to perform a plant shutdown and entered Mode 4 on December 6, 2017.

On December 10, 2017, operations personnel commenced a restart from a forced outage.

On December 16, 2017, at approximately 68 percent power, operations personnel reduced power to approximately 50 percent power due to a reduction in plant service water system capability. On December 18, 2017, operations personnel further reduced power to 23 percent, due to vibrational concerns in the reactor recirculation system.

On December 21, 2017, operations personnel commenced power ascension after restoration of the plant service water system capability.

On December 31, 2017, Grand Gulf Nuclear Station was at approximately 90 percent power.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

Readiness for Seasonal Extreme Weather Conditions

a. Inspection Scope

On December 13, 2017, the inspectors completed an inspection of the station's readiness for seasonal extreme weather conditions. The inspectors reviewed the licensee's adverse weather procedures for cold weather protection and evaluated the licensee's implementation of these procedures. The inspectors verified that prior to cold weather, the licensee had corrected weather-related equipment deficiencies identified during the implementation of the cold weather protection procedure.

The inspectors selected four risk-significant systems that were required to be protected from cold weather:

- Standby service water pumphouse A and B and standby service water valve nest Room A and B
- Firewater pumphouse
- Condensate storage tank area
- Water treatment building (contains plant air compressors)

The inspectors reviewed the licensee's procedures and design information to ensure the systems would remain functional when challenged by cold weather. The inspectors verified that operator actions described in the licensee's procedures were adequate to maintain readiness of these systems. The inspectors walked down portions of these systems to verify the physical condition of these systems were prepared for seasonal cold weather.

These activities constituted one sample of readiness for seasonal adverse weather, as defined in Inspection Procedure 71111.01.

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

Partial Walk-Down

a. Inspection Scope

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

- November 2, 2017, standby diesel generator B starting air system, due to recent inspections to determine extent of condition (cracks on intake air system)
- November 7, 2017, residual heat removal (RHR) subsystem A and B, following RHR pump A replacement

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 systems 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 six plant areas important to safety:

- October 23, 2017, Areas 1T307 and 1T309, main feedwater pump rooms
- November 7, 2017, Areas 1A103 and 1A203, RHR A pump room and pipe penetration room
- November 7, 2017, Areas 1A105, 1A106, and 1A205, RHR B pump room, RHR B heat exchanger room, and RHR B pipe penetration room
- November 7, 2017, Area WTB-02, water treatment building
- November 7, 2017, Area CWPH-01, circulating pump house
- November 7, 2017, Area FWPH-01, firewater pump house

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 six 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 November 30, 2017, 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 two plant areas containing risk-significant structures, systems, and components that were susceptible to flooding:

- RHR A pump room
- Reactor core isolation cooling 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 constituted completion of two flood protection measures samples, 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 November 30, 2017, 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 constituted 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

The inspectors observed the performance of on-shift licensed operators in the plant's main control room. The inspectors observed the operators' performance of the following activities:

- October 19, 2017, Division 1 standby diesel generator fast start surveillance activities
- November 15 and November 16, 2017, shutdown activities due to a leak on the recirculation pump B seal
- November 23, 2017, reactor startup activities
- November 24, 2017, reactor startup activities

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

These activities constituted completion of four quarterly licensed operator performance samples, as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed two instances of degraded performance or condition of safety-significant structures, systems, and components (SSCs):

- November 2, 2017, Division 1 standby diesel generator, with emphasis on an identified crack on the intake plenum
- November 25, 2017, reactor protection system - instantaneous spike on intermediate range monitor (IRM) Channels A, C, and D, resulting in half SCRAM condition

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.

.2 Quality Control

a. Inspection Scope

On November 21, 2017, the inspectors reviewed the licensee's quality control activities through a review of whether quality control verifications were properly specified in accordance with the licensee's Quality Assurance Program, and were implemented as specified, during work associated with the replacement of safety related equipment area temperature (NUS) switches.

These activities constituted completion of one quality control sample, 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 one risk assessment performed by the licensee prior to changes in plant configuration and the risk management actions taken by the licensee in response to elevated risk:

- November 17, 2017, risk assessment for maintenance on the recirculation system pump B which was an operation with potential to drain the vessel

The inspectors verified that this risk assessment was performed timely and in accordance with the requirements of 10 CFR 50.65 (the Maintenance Rule) and plant procedures. The inspectors reviewed the accuracy and completeness of the licensee's risk assessment and verified that the licensee implemented appropriate risk management actions based on the results of the assessment.

The inspectors also observed portions of one emergent work activity that had the potential to cause an initiating event or to affect the functional capability of mitigating systems.

- October 27, 2017, the loss of the 115 kV (Port Gibson to Engineered Safety Feature transformer 12) offsite supply line

The inspectors verified that the licensee appropriately developed and followed a work plan for these activities. The inspectors verified that the licensee took precautions to minimize the impact of the work activities on unaffected SSCs.

These activities constituted completion of two maintenance risk assessments and emergent work control 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 three operability determinations that the licensee performed for degraded or nonconforming SSCs:

- October 3, 2017, operability of the high pressure core spray jockey pump due to indication of high vibrations as identified in Grand Gulf Nuclear Station Condition Report CR-GGN-2017-09935
- November 9, 2017, operability of the Division 1 standby diesel generator due to issue identified in Grand Gulf Nuclear Station Condition Report CR-GGN-2017-10566

- December 21, 2017, operability of the Division 3 GE Magnablast breakers due to issue identified in Grand Gulf Nuclear Station Condition Report CR-GGN-2017-10963

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 constituted completion of three operability 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 two post-maintenance testing activities that affected risk-significant SSCs:

- November 7, 2017, the high pressure core spray jockey pump following pump replacement
- November 7, 2017, the Division 3 emergency diesel generator following a scheduled maintenance outage

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 constituted completion of two 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 occurred from:

- November 16 to November 24, 2017;
- November 25 to December 1, 2017;
- December 6 to December 10, 2017;

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 and verification of the licensee's fatigue management activities
- Monitoring of shut-down and cool-down activities
- Verification that the licensee maintained defense-in-depth during outage activities
- Observation and review of operations with a potential for draining the reactor vessel (BWR)
- Monitoring of heat-up and startup activities

These activities constituted completion of three outage activities samples, as defined in Inspection Procedure 71111.20.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed one risk-significant surveillance test and reviewed test results to verify that this test adequately demonstrated that the SSCs were capable of performing their safety functions:

Reactor coolant system leak detection test:

- November 15, 2017, drywell unidentified and identified leakage detection surveillance

The inspectors verified that this test met technical specification requirements, that the licensee performed the test in accordance with its procedure, and that the results of the test satisfied appropriate acceptance criteria.

These activities constituted completion of one surveillance testing inspection sample, as defined in Inspection Procedure 71111.22.

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06)

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors observed an emergency preparedness drill on October 25, 2017, to verify the adequacy and capability of the licensee's assessment of drill performance. The inspectors reviewed the drill scenario, observed the drill from the technical support center, operations support center and simulator, and attended the post-drill critique. The inspectors verified that the licensee's emergency classifications, off-site notifications, and protective action recommendations were appropriate and timely. The inspectors verified that any emergency preparedness weaknesses were appropriately identified by the licensee in the post-drill critique and entered into the corrective action program for resolution.

These activities constituted completion of one emergency preparedness drill observation sample, as defined in Inspection Procedure 71114.06.

b. Findings

No findings were identified.

.2 Training Evolution Observation

a. Inspection Scope

On November 30, 2017, the inspectors observed simulator-based licensed operator requalification training that included implementation of the licensee's emergency plan. The inspectors verified that the licensee's emergency classifications, off-site notifications, and protective action recommendations were appropriate and timely. The inspectors verified that any emergency preparedness weaknesses were appropriately identified by the evaluators and entered into the corrective action program for resolution.

These activities constituted completion of one training observation sample, as defined in Inspection Procedure 71114.06.

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 Reactor Coolant System Specific Activity (BI01)

a. Inspection Scope

The inspectors reviewed the licensee's reactor coolant system chemistry sample analyses for the period of October 1, 2016, through September 30, 2017, 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 7, to determine the accuracy of the reported data.

These activities constituted verification of the reactor coolant system specific activity performance indicator, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.2 Reactor Coolant System Identified Leakage (BI02)

a. Inspection Scope

The inspectors reviewed the licensee's records of reactor coolant system total leakage for the period October 1, 2016, through September 30, 2017, to verify the accuracy and completeness of the reported data. The inspectors observed the performance of Procedure 06-OP-1000-D-0001, "Daily Operating Logs," Revision 149, on November 15, 2017. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data.

These activities constituted verification of the reactor coolant system leakage performance indicator, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.3 Drill/Exercise Performance (EP01)

a. Inspection Scope

The inspector reviewed the licensee's evaluated exercises, emergency plan implementations, and selected drill and training evolutions that occurred between October 2016, and September 2017, to verify the accuracy of the licensee's data for

classification, notification, and protective action recommendation (PAR) opportunities. The inspector reviewed a sample of the licensee's completed classifications, notifications, and PARs to verify their timeliness and accuracy. The inspector used Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data. The specific documents reviewed are described in the attachment to this report.

These activities constituted verification of the drill/exercise performance indicator, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.4 Emergency Response Organization Drill Participation (EP02)

a. Inspection Scope

The inspector reviewed the licensee's records for participation in drill and training evolutions between October 2016, and September 2017, to verify the accuracy of the licensee's data for drill participation opportunities. The inspector verified that all members of the licensee's emergency response organization (ERO) in the identified key positions had been counted in the reported performance indicator data. The inspector reviewed the licensee's basis for reporting the percentage of ERO members who participated in a drill. The inspector reviewed drill attendance records and verified a sample of those reported as participating. The inspector used Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data. The specific documents reviewed are described in the attachment to this report.

These activities constituted verification of the emergency response organization drill participation performance indicator, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.5 Alert and Notification System Reliability (EP03)

a. Inspection Scope

The inspector reviewed the licensee's records of alert and notification system tests conducted between October 2016, and September 2017, to verify the accuracy of the licensee's data for siren system testing opportunities. The inspector reviewed procedural guidance on assessing alert and notification system opportunities and the results of periodic alert and notification system operability tests. The inspector used Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data. The specific documents reviewed are described in the attachment to this report.

These activities constituted verification of the alert and notification system reliability performance indicator, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

40A2 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 reviewed the licensee's corrective action program, performance indicators, system health reports, planned technical specification required surveillances, backlog list (included in the plan of the day report) of near late surveillance requirements, and other documentation to identify trends that might indicate the existence of a more significant safety issue. The inspectors verified that the licensee was taking corrective actions to address identified adverse trends.

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

b. Observations and Assessments

The inspectors noted the Grand Gulf Nuclear Station has had a rise in the backlog of surveillance activities required for technical specification equipment. As of December 11, 2017, Grand Gulf Nuclear Station had 126 past due surveillances (past due, in grace), whereas the other eight Entergy operating sites have a combined total of 189. The inspectors focused on the missed surveillances relating to:

- Turbine bypass stop and control valve (went late October 2, 2017, CR-GGN-2017-10234)
- Average power range monitor, Channel 3, functional test (went late October 7, 2017, CR-GGN-2017-10105)

- Reactor core isolation cooling (RCIC) turbine exhaust diaphragm high pressure calibration Channel F (Did not perform on Channel F due to procedure change, CR-GGN-2017-07232)
- Division 2 drywell purge supply initial vacuum relief valve (failed testing during Division 1 week, CR-GGN-2017-10756)

The inspectors noted that there were examples involving the performance of multidivisional work at the same time, which ultimately required the station to declare multiple divisions of equipment out of service in accordance with Technical Specifications when equipment failed testing. The inspectors noted that the planned schedule of activities was not rigorously followed due to a variety of issues. These issues included unplanned equipment failures, competing priorities, and changes in procedures compounded with human performance errors. The inspectors discussed the examples with the station surveillance coordinator and production manager, including planned corrective actions. The station does have corrective actions in place to improve the scheduling of future surveillances based on using an electronic database and program (PRIMAVERA) and creating a more descriptive performance indicator for past due surveillance test procedures for tracking, trending, and scheduling purposes. However, the inspectors noted that the surveillance requirement frequency grace period for the RCIC quarterly pump surveillance was exceeded on December 12, 2017, before performing the surveillance requirement, which is indicative of Grand Gulf Nuclear Station still having issues in this area. An issue involving generator seal oil trouble, CR-GGN-2017-12266, was prioritized over the completion of the RCIC surveillance on or before the late date.

c. Findings

No findings were identified.

.3 Annual Follow-up of Selected Issues

a. Inspection Scope

The inspectors selected one issue for an in-depth follow-up:

On August 27, 2017, Grand Gulf Nuclear Station declared residual heat removal (RHR) pump A (1E12C002A) inoperable due to a failure to meet the applicable technical specification surveillance test requirement. RHR pump A did not develop the required differential pressure at the flow rate as described in the licensee's procedures. As a result, RHR pump A was declared inoperable to perform its safety-related function to provide low pressure core injection during an accident scenario. The safety-related function for the plant was not lost since RHR pumps B and C were both still operable during this time. This failure followed a previous September 26, 2016, failure of the RHR pump A to develop sufficient differential pressure during a technical specification surveillance test.

On November 8, 2017, the inspectors completed a focused baseline inspection review of the events as documented in the licensee's critical decision document dated September 29, 2017, and an equipment apparent cause evaluation dated January 9, 2017. These documents assessed the condition of the RHR pump A after each respective failure to meet the technical specification surveillance test requirement.

The inspectors assessed the licensee's problem identification threshold, the proposed apparent causes for the failures of RHR pump A, and the resolution of the identified problems. The inspectors verified that the actions proposed by the licensee have been implemented and that RHR pump A is operable after pump replacement.

These activities constituted completion of one annual follow-up sample, as defined in Inspection Procedure 71152.

b. Findings

No findings were identified.

40A5 Other Activities

Operation of an Independent Spent Fuel Storage Facility at Operating Plants (60855.1)

a. Inspection Scope

A routine independent spent fuel storage installation (ISFSI) inspection was conducted at the Grand Gulf Nuclear Station (GGNS) ISFSI on November 27-30, 2017, by an NRC Region IV Division of Nuclear Material Safety inspector and a Division of Spent Fuel Management inspector from NRC Headquarters. The inspectors observed spent fuel assemblies being processed for dry cask storage in the Holtec International (Holtec) Model MPC-68M multi-purpose canister (MPC) and reviewed the licensee's fuel loading and heavy load procedures associated with their current dry cask loading campaign. The inspectors performed a review of the spent fuel assembly characteristics that had been selected for placement into dry cask storage in the MPCs for the current campaign, to verify that the licensee was loading fuel in accordance with the Holtec Certificate of Compliance (CoC) 1014 technical specification (TS) approved contents. The inspectors reviewed documents which included completed copies of Entergy Procedure EN-DC-215, "Fuel Selection for Holtec Dry Cask Storage," Revision 8, for each MPC being loaded. The procedure included MPC-68M loading maps and other key spent fuel assembly qualification information, including decay heat (kW), cooling time (years), average initial U-235 enrichment (%), and nuclear fuel utilization data (MWd/MTU) on a per assembly basis.

During the NRC inspection, dry cask storage operations at GGNS were proceeding smoothly. GGNS had not experienced any problems loading fuel into the newer Holtec MPC-68M canister design. All of the fuel loading operations and MPC processing equipment were observed to be operating well. The processing equipment included the automated welding machine and forced helium dehydration equipment. NRC inspectors were on hand to observe the welding of the initial, root, and intermediate pass of the MPC-68M lid to shell weld for canister number four of the six canister loading campaigns. The NRC inspectors also observed the liquid dye penetrant testing (PT) of those welds. Following the final weld pass and the hydro pressure testing of the MPC,

the final PT of the lid to shell weld was performed. All of the PT tests passed satisfactorily before the licensee continued welding or further processing of the MPC.

Prior to final drying of the fuel contents, excess water in the MPC was removed and returned to the spent fuel pool. Forced helium dehydration (FHD), a proprietary Holtec method of drying the spent fuel contents of an MPC, ensured that the spent fuel assemblies were sufficiently dry for long term storage. After FHD operations were completed, the MPC was backfilled with ultra-pure helium to provide an inert environment with acceptable heat transfer characteristics to allow for the spent fuel to cool while in long-term storage. The drying and helium backfill provide an inert environment that inhibits corrosion of the spent fuel and associated components. The NRC inspectors observed the successful helium leak test of MPC number four and the welding and PT exam of the MPC final closure rings.

The MPC was downloaded into the Holtec HI-STORM over-pack on the fourth day of the NRC inspection. A vertical cask transporter moved the loaded HI-STORM onto the GGNS ISFSI pad, presumably on day-five. The NRC ISFSI inspectors were not present for that evolution. There were two NRC resident inspectors at the site who were available if a problem had occurred.

The GGNS ISFSI is located approximately 900 feet northeast of the GGNS reactor building. The ISFSI pad is a 196 foot by 61 foot concrete pad designed to hold a 4 by 12 (48) array of Holtec HI-STORM 100 storage casks. However, GGNS administratively limits the pad to 44 storage casks. The last space in each row is being left empty for temporary storage during cask movement operations. The NRC inspectors verified the radiological conditions of the GGNS ISFSI through a review of recent site radiological surveys and a walk-down of the ISFSI pad with radiation survey instrumentation. The ISFSI pad was clear of vegetative growth and there were no unexpected combustible or flammable items present on the pad. Some operational items were stored in a metal container on one corner of the ISFSI pad. None of those items presented a fire hazard. The ISFSI was appropriately posted as a radioactive materials area (RMA) with an exclusion area boundary established with stanchions and a yellow and magenta chain around the loaded casks. The ISFSI pad contained 31 loaded HI-STORM 100 casks. The HI-STORM casks were observed to be in good condition. The concrete of the ISFSI pad was also observed to be in good physical condition. ISFSI fence line, pad boundary, and selected HI-STORM inlet vent radiation levels were verified by an NRC inspector using a sodium-iodide (NaI) scintillation type radiation detector calibrated to estimate gamma exposure rates in micro-roentgens per hour ($\mu\text{R}/\text{h}$). The NRC inspector used a Ludlum Model-19 (NRC #015546, calibration due October 2018) detector. The measurements taken by the NRC inspector confirmed the measurements recorded on the most recent ISFSI survey. General ISFSI area radiation levels were 100 – 480 $\mu\text{R}/\text{h}$ outside of the posted exclusion area boundary. As expected, the highest radiation levels were found in close proximity to the HI-STORM inlet vents. A group of randomly selected HI-STORM inlet screens measured from 1 to 2.2 mR/h.

The licensee provided the NRC inspectors with area monitoring program records for thermoluminescent dosimeters (TLDs) placed along the northern side of the outer fence surrounding the ISFSI pad. Those monitoring results show that for 2016 and 2017 an individual situated at or near the ISFSI north exclusion fence would experience a maximum occupational dose of about 70 mrem per year. This was below the 10 CFR 20.1502(a)(1) regulatory limit of 500 mrem per year for unmonitored workers.

As a result, site workers need not be monitored for occupational dose for work activities performed near to, but outside of the ISFSI exclusion fence. The radiation protection program requires that all persons accessing the ISFSI to make an official radiologically controlled area entry, which requires personnel dosimetry and an electronic dosimeter for real-time dose monitoring.

The GGNS radiological environmental monitoring program (REMP) performs onsite and offsite monitoring for radioactive effluents (gaseous and liquid), airborne particulates, and direct radiation impacts to the local onsite and offsite environments due to operations at the reactor site. GGNS' REMP has 29 fixed TLD monitoring locations to measure direct radiation impacts. The site boundary TLD monitoring station located in closest proximity to the ISFSI was station M100, located in the northeastern monitoring sector of the reactor site. As required by 10 CFR 72.104(a)(2), the direct radiation from the ISFSI must not exceed 25 mrem per year to any real individual located beyond the owner controlled area. The NRC inspectors reviewed the annual REMP reports for 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16109A273) and 2016 (ADAMS Accession No. ML17117A685). The results for TLD monitoring station M100 were only slightly elevated when compared to the offsite control location, M14. The monitoring results from station M100 for 2015 and 2016 averaged 1.1 mrem per year more than the control location. The 1.1 mrem elevation is likely more due to random fluctuations in background than actual direct influence from the ISFSI at the M100 location. The monitoring results show that the ISFSI had a negligible radiological impact at the site boundary. The requirements of 10 CFR 72.104 are being met at GGNS.

The NRC inspectors reviewed the daily temperature monitoring surveillance records for the randomly selected weeks of January 3, 2015; September 11, 2016; and February 25, 2017, to ensure that the Holtec HI-STORM 100 System CoC 1014 TS 3.1.2 requiring daily temperature surveillance measurements were being achieved by the licensee.

The inspectors requested documents and records related to the maintenance of the spent fuel cask handling crane (CHC) and the annual maintenance of the licensee's special lifting devices. The inspectors reviewed licensee documents that demonstrated the cask handling crane was inspected within the past year in accordance with the requirements of the American Society of Mechanical Engineers (ASME) B30.2, "Overhead and Gantry Cranes," standards, prior to the current dry fuel loading campaign. Records reviewed by NRC included periodic and frequent preventive maintenance testing and electrical testing records for the CHC in use at GGNS. The testing and preventive maintenance records were satisfactory and included functional inspections of the trolley, hoist, sheaves, wire rope, main hook, oil levels, specific electrical parameters, et al.

The annual maintenance required by American National Standards Institute (ANSI) N14.6, "Radioactive Materials - Special Lifting Devices for Shipping Containers Weighing 10,000 Pounds or More," was completed for the following special lifting devices: Holtec HI-TRAC Transfer Cask; HI-TRAC Lift Yoke; and HI-STORM Lift Brackets. The licensee performed specific visual, dimensional, and nondestructive testing on the HI-TRAC Lift Yoke lift pins, strong backs, and lift arms; HI-TRAC Transfer Cask lift trunnion blocks; and HI-STORM Lift Brackets and strong backs. The HI-TRAC is a shielded temporary over-pack used to facilitate the movement of a loaded MPC

between the spent fuel pool and final storage within the HI-STORM over-pack on the ISFSI Pad. The HI-TRAC Lift Yoke is an interfacing device that goes between the cask handling crane main hook and HI-TRAC for lifting an empty or loaded MPC into or out of the spent fuel pool. The HI-STORM Lift Brackets are interfacing devices that are used to connect the vertical cask transporter (VCT) to the HI-STORM over-pack for transportation to the ISFSI. The VCT lifts and transports the loaded HI-STORM from outside the fuel building to the ISFSI pad. All of the aforementioned items had been subjected to visual, dimensional, and nondestructive examination by magnetic particle or liquid dye penetrant in critical areas prior to use in the current loading campaign at GGNS.

An on-site review of the quality assurance (QA) audit and QA surveillance reports related to dry cask storage activities at GGNS was performed by the NRC inspectors. The licensee's QA department issued Quality Assurance Audit Report QA-20-2016-GGNS-1, "Independent Spent Fuel Storage Installation Program," dated September 15, 2016. The audit assessed GGNS' dry cask storage performance in eight areas which included: (1) Licensing Compliance; (2) Design Control; (3) Fuel Selection; (4) Fuel Campaign Activities; (5) Operational Surveillances; (6) Corrective Action; (7) Networking, Benchmarking, and Self-Assessment; and (8) Leadership and Management. The QA audit found GGNS' ISFSI program areas to be "effective with areas of concern." Many of the condition reports (CRs) reviewed by the NRC inspectors were generated as a result of this audit. Notably, the audit resulted in two quality assurance findings (QAFs). In the design control program element, a longstanding issue with the cask handling crane's north load brake resulted in a QAF. That QAF and associated CRs resulted in the north load brake being repaired by site maintenance after several years of "use as is" status. The other QAF was related to the leadership and management program element. Within this program element, the audit identified a number of issues, including missed ISFSI inspections and surveillances, untimely ISFSI records transmittals, 10 CFR 72.212 Evaluation Report discrepancies, et al. The problems that were identified by the audit team were indicative of an overall trend that was characterized "if not arrested, [would challenge] the site's ability to perform inspections in accordance with [its] licensing basis." After careful review of many of the CRs related to the ISFSI audit, NRC inspectors agree with the site's QA findings.

There were no adverse QAFs identified during the 2016 audit of ISFSI programs.

The licensee provided the inspectors with a list of cask handling crane (CHC) and ISFSI related CRs that were initiated since the last NRC inspection of November 2015. If problems were identified during routine ISFSI operations, the licensee documented the problems in the form of a CR which was placed in the licensee's corrective action program (CAP) for disposition. Of the list of CRs provided to NRC, 18 were selected by the NRC inspectors for further review. Many of the CHC and ISFSI related CRs were the result of a 2016 audit of the ISFSI program by GGNS QA staff (see preceding paragraphs). The CHC CRs were primarily related to longstanding problems with the cask handling crane's north load brake. Those issues were all dispositioned prior to the current dry fuel storage campaign. Lack of procedure adherence was a recurring theme of the CRs issued related to ISFSI operations. The CRs reviewed were well documented and properly categorized based on the safety significance of the identified issues. The specified corrective actions were assigned to the licensee's appropriate program office. Based on the types of conditions identified, the licensee's QA program demonstrated excellent insight into the processes, procedures, and equipment used by

the GGNS ISFSI program. No NRC safety concerns were identified related to the CRs selected for additional review during the inspection. Even though no safety concerns were identified, it is important that GGNS look closely at the CRs generated by its internal 2016 QA audit and improve the performance of its ISFSI program before performance degrades further.

The licensee's most current 10 CFR 72.212 Evaluation Report was reviewed to verify that any changes implemented by the site were described and evaluated against the current Holtec HI-STORM 100 Amendment requirements. The licensee was using Revision 11 for the GGNS 10 CFR 72.212 Evaluation Report at the time of the inspection, dated September 3, 2017. The current revision updated the site's 10 CFR 72.212 Evaluation Report for the adoption of the Holtec HI-STORM CoC Amendment 9, Revision 1, and Final Safety Analysis Report (FSAR), Revision 13, in order to use the Holtec MPC-68M version of the multi-purpose canister during its current dry fuel storage campaign. The associated 10 CFR 72.48 screenings for the 10 CFR 72.212 Evaluation Report update were reviewed. The screenings were determined to have been adequate and the changes to the 10 CFR 72.212 Evaluation Report were found to be still bounded by the applicable design bases.

The licensee's 10 CFR 72.48 screenings and evaluations for ISFSI program changes since the last NRC ISFSI inspection were reviewed to determine compliance with regulatory requirements. The majority of the 10 CFR 72.48 screenings were associated with ISFSI procedure updates. GGNS had performed approximately six procedure changes in support of its dry fuel storage program since the last NRC inspection. Those changes were evaluated using Entergy Fleet Procedures EN-LI-100, "Process Applicability Determination," Revision 21, and Procedure EN-LI-112, "10 CFR 72.48 Evaluations," Revision 12. However, no full 10 CFR 72.48 safety evaluations were required for any of the changes that had been performed. The licensee had not performed any 10 CFR 50.59 screenings or safety evaluations for the fuel building cask handling crane since the last inspection. The 10 CFR 72.48 screenings that were reviewed by the NRC inspectors were determined to have been adequately evaluated.

The inspectors observed that the licensee had met the licensing requirements for all of the documents and activities reviewed associated with the dry cask storage activities at GGNS.

b. Findings

No findings were identified.

40A6 Meetings, Including Exit

Exit Meeting Summary

On November 29, 2017, the inspector discussed the results of the onsite inspection of the licensee's emergency preparedness program to Mr. J. Seiter, Emergency Preparedness Manager, and other members of the licensee staff. On December 21, 2017, the final results were communicated to Mr. E. Larson, Site Vice President, 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 November 30, 2017, the NRC presented the results of the ISFSI inspection to Mr. E. Larson, Site Vice President, and other members of the licensee staff. Licensee personnel acknowledged the information presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered propriety. No propriety information was identified.

On January 10, 2018, the inspectors presented the inspection results to Mr. E. Larson, Site Vice President, 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.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

M. Campbell, Senior Manager, Entergy (River Bend) Dry Fuel Storage
J. Clements, Radiation Protection
D. Ellis, Specialist, Regulatory Assurance
E. Larson, Site Vice President
D. Neve, Manager, Regulatory Assurance
E. Riggs, Senior Project Manager, Dry Fuel Storage
J. Seiter, Manager, Emergency Preparedness

Other Contacts

G. Mclemore, Site Specialist, Technological Hazards Branch, FEMA Region IV
N. Williams, Chairperson, Radiological Assistance Committee, FEMA Region VI

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
03-1-03-A30-1	Cold Weather Protection	023

Work Orders

52746352

Section 1R04: Equipment Alignment

Drawings

<u>Number</u>	<u>Title</u>	<u>Revision</u>
M-1070B	Standby Diesel Generator System	039
M-1085B	Residual Heat Removal System	063

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
04-1-01-E12-1 SU	Residual Heat Removal System	147
04-1-01-P75-1	Standby Diesel Generator System	106

Section 1R05: Fire Protection

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision</u>
A-02	Fire Preplan RHR A Pump Room 1A103, Heat Exch Room 1A102, Heat Exch Room 1A202, Pipe Penetration Room 1A203	002
A-04	Fire Preplan RHR B Pump Room 1A105, Heat Exch Room 1A106, Heat Exch Room 1A206, Pipe Penetration Room 1A205	002
CWPH-01	Fire Preplan for Circ Water Pump House, 133' Elevation	000
FWPH-01	Fire Preplan for Fire Water Pump House and Storage Tank, 133' Elevation	001
MC-QSP64-86058	Fire Calculation for Fire Loads	064
TB1-03	Fire Preplan for 133' Elevation of the Turbine Building	002
WTB-02	Fire Preplan for Water Treatment Building, 133' Elevation and Mezzanine	000

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
05-S-02-V-1	Response to Fires Off-Normal Event Procedure	005

Condition Reports (CR-GGN-)

2017-05148	2017-05150	2017-09110	2017-10466
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Section 1R06: Flood Protection Measures

Calculations

<u>Number</u>	<u>Title</u>	<u>Revision</u>
M195.0-01	Compartment Flooding Calculations	002
M195.0-41	Auxiliary Building Compartment Flood Levels	000

Miscellaneous Documents

<u>Title</u>	<u>Date</u>
UFSAR Section 3C.4.2	2016-00

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

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
02-S-01-27	Operations Philosophy	075
03-1-01-2	Power Operations	170
03-1-01-3	Plant Shutdown	130
06-OP-1P75-R-0003	Standby Diesel Generator 11: Functional Test	129
EN-OP-115	Conduct of Operations	022
EN-OP-200	Plant Transient Response Rules	004
GSMS-LOR-00247	Bypass Valve Inop / 6A Feedwater Heater Tube Leak / Loss of Feedwater Heating / LOCA / EP-2A Loss of Level Indication	004
GSMS-LOR-00295	Reactor Pressure Control Malfunctions ONEP	000

Section 1R12: Maintenance Effectiveness

Drawings

<u>Number</u>	<u>Title</u>	<u>Revision</u>
851E905	Wide Range Monitor (Mean Square Voltage)	
E-1171-009	C51 Start-Up Range Neutron Mon [Monitoring] System IRM [Intermediate Range Monitor] Channel A&E	008
E-1171-015	C51 Start-Up Range Neutron Mon [Monitoring] System Remote Indicators, Channel A, B, E, F, Unit	001
E-1173-015	C71 Reactor Protection System Channel "A" Sensor Relays	021
J-1270-002	RCIC Isolation Logic	001
E-1137-005	Leak Detection System Valve Logic	007
E-1185-034	RCIC Logic System A and B	011

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision/Date</u>
DCP 85/4060	Stiffening of Division I and II Standby Diesel Engine Intercooler Adapters	000
EC 75015	Neutron Monitoring System Trip Inputs to RPS	000

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision/Date</u>
ER-GG-2003-0126-000	Diesel Generator Turbocharger Intercooler Inlet Adapter Turning Vane Cracking	000
ER-GG-2004-0230-00-01-02	RCIC Leak Deterection Temperature Switch	July 18, 2007

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EN-DC-203	Maintenance Rule Program	004
EN-DC-204	Maintenance Rule Scope and Basis	004
EN-DC-205	Maintenance Rule Monitoring	006
EN-DC-206	Maintenance Rule (A)(1) Process	003
02-S-01-28	Standby Diesel Generator 11 Functional Test	005
06-OP-1E22-Q-0005	HPCS Quarterly Survillance Test	125

Condition Reports (CR-GGN-)

2009-02089	2016-00387	2016-01067	2016-02254	2016-04820
2016-05551	2016-05604	2016-05623	2016-05639	2016-07443
2016-08633	2017-00186	2017-00938	2017-01194	2017-03371
2017-03576	2017-03585	2017-03648	2017-03667	2017-03785
2017-05660	2017-07448	2017-08534	2017-08782	2017-08843
2017-09116	2017-10118	2017-10524	2017-10527	2017-10566
2017-10567	2017-10568	2017-10571	2017-10573	2017-10575
2017-10576	2017-10583	2017-10590	2017-10612	2017-10659
2017-10670	2017-10711	2017-10779	2017-10788	2017-10799
2017-10826	2017-10844	2017-10869	2017-10903	2017-10929
2017-11513	2017-11526	2017-11582	2017-11717	2017-11733
2017-11753	2017-11755	2017-12227	2017-12305	2017-12308
2017-12314	2017-12322	2017-12328	2017-12383	

Work Orders

487852	50309925	52428355	52486724	52612980
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Work Orders

52622650 52743253 52759062 52773919

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision</u>
PC-Q1111-05001	Calculation of the Handwheel Shaft Torque for Motor Operated Valves 1B33F023A/B, 1B33F067A/B, and 1G33F106	001

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
01-S-18-6	Risk Assessment of Maintenance Activities	019
03-1-01-5	Refueling, Attachment III - Associated with Potential for Draining Vessel	137
EN-OU-108	Shutdown Safety Management Program (SSMP)	008

Condition Reports (CR-GGN-)

2017-11550 2017-11587 2017-11597

Work Orders

00318755

Section 1R15: Operability Determinations and Functionality Assessments

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EN-OP-104	Operability Determination Process	013
EN-OP-104	Operability Determination Process	014
EN-OP-111	Operational Decion-Making Issue (ODMI) Process	014
EN-OP-111	Operational Decion-Making Issue (ODMI) Process	015
EN-OP-112	Night and Standing Orders	002
EN-OP-115	Conduct of Operations	022
EN-OP-115	Conduct of Operations	023

Condition Reports (CR-GGN-)

2017-09935

Work Orders

52657593

Section 1R19: Post-Maintenance Testing

Drawings

<u>Number</u>	<u>Title</u>	<u>Revision</u>
1090318	Pump 3196STi Size 1x1-1/2-6 (Sheets 1 and 2)	002

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Date</u>
EC 74762	Evaluate Goulds Pump Replacement for HPCS Jockey Pump	November 7, 2017
GEXI 2017-00008	Transmittal of HPCS Jockey Pump Impeller O-Ring Recommendations	November 7, 2017

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
06-OP-1E22-Q-0005	HPCS Quarterly Functional Test	125
06-OP-1P81-M-0002	HPCS Diesel Generator Functional Test	101

Section 1R20: Refueling and Other Outage Activities

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EN-OU-108	Shutdown Safety Management Program (SSMP)	008
SOPP	Grand Gulf Nuclear Station Shutdown Operations Protection Plan	021

Condition Reports (CR-GGN-)

2017-09058	2017-09089	2017-11098	2017-11513	2017-11516
2017-11553	2017-11602	2017-11603		

Work Orders

482352

Section 1EP6: Drill Evaluation

Miscellaneous Documents

<u>Title</u>	<u>Date</u>
Green Teram Drill Report	November 25, 2017

Section 4OA1: Performance Indicator Verification

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Date</u>
	REP-10 Design Review Report, Entergy Grand Gulf Nuclear Station, Port Gibson, Mississippi	May 2013
010-0022D	CompuLert CSC-960 Encoder and Software Operation Manual	August 9, 2004
EN-LI-114, Attachment 9.1	Reactor Coolant System Specific Activity – NRC Performance Indicator Technique/Data Sheet	1 st Qtr 2017
EN-LI-114, Attachment 9.1	Reactor Coolant System Specific Activity – NRC Performance Indicator Technique/Data Sheet	2 nd Qtr 2017
EN-LI-114, Attachment 9.1	Reactor Coolant System Specific Activity – NRC Performance Indicator Technique/Data Sheet	3 rd Qtr 2017
EN-LI-114, Attachment 9.1	Reactor Coolant System Specific Activity – NRC Performance Indicator Technique/Data Sheet	4 th Qtr 2016
EN-LI-114, Attachment 9.1	Reactor Coolant System Leakage – NRC Performance Indicator Technique/Data Sheet	1 st Qtr 2017
EN-LI-114, Attachment 9.1	Reactor Coolant System Leakage – NRC Performance Indicator Technique/Data Sheet	2 nd Qtr 2017
EN-LI-114, Attachment 9.1	Reactor Coolant System Leakage – NRC Performance Indicator Technique/Data Sheet	3 rd Qtr 2017
EN-LI-114, Attachment 9.1	Reactor Coolant System Leakage – NRC Performance Indicator Technique/Data Sheet	4 th Qtr 2016

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
01-S-10-3	Emergency Planning Department Responsibilities	023
EN-LI-114	Regulatory Performance Indicator Process	007

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EN-OP-109	Drywell Leakage	002

Condition Reports (CR-GGN-)

2017-04177	2017-11531	2017-11827	2017-11843
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Section 40A2: Problem Identification and Resolution

Miscellaneous Documents

<u>Title</u>	<u>Date</u>
Critical Decision Document – Residual Heat Removal Pump	September 29, 2017

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
06-OP-1E12-Q-0023	LPCI/RHR Subsystem A Quarterly Functional Test	135
EN-LI-102	Corrective Action Program	030
EN-LI-118	Cause Evaluation Process	024

Condition Reports (CR-GGN-)

2009-01729	2012-08225	2016-06798	2017-00569	2017-02676
2017-09061	2017-09241	2017-09322	2017-10234	2017-10271
2017-12446				

Work Orders

483308-01	50287431	52716255-01	52754845	52784351-01
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Section 40A3: Follow-up of Events and Notices of Enforcement Discretion

Work Orders

491184

Section 40A5: Other Activities

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision/Date</u>
10 CFR 72.212 Report	HI-STORM 100 System	010, 011
BOP-MT-17-007	Magnetic Particle Examination	May 13, 2017
BOP-MT-17-009	Magnetic Particle Examination	May 13, 2017
BOP-MT-17-021	Magnetic Particle Examination	June 15, 2017
BOP-PT-17-004	Liquid Penetrant Examination	May 9, 2017
BOP-PT-17-009	Liquid Penetrant Examination	June 15, 2017
CC-N1111- 04011	GGNS ISFSI Soil Structure Interaction Analysis	001
CCR-1021-535	Component Completion Record - MPC-68M	July 14, 2017
CCR-1021-536	Component Completion Record - MPC-68M	July 14, 2017
CCR-1021-537	Component Completion Record - MPC-68M	July 14, 2017
CCR-1021-538	Component Completion Record - MPC-68M	July 14, 2017
CCR-1021-539	Component Completion Record - MPC-68M	July 14, 2017
CCR-1021-540	Component Completion Record - MPC-68M	July 14, 2017
CCR-1024-991	Component Completion Record - HI-STORM 100S	August 11, 2017
CCR-1024-992	Component Completion Record - HI-STORM 100S	August 11, 2017
CCR-1024-993	Component Completion Record - HI-STORM 100S	August 11, 2017
CCR-1024-994	Component Completion Record - HI-STORM 100S	August 11, 2017
CCR-1024-995	Component Completion Record - HI-STORM 100S	August 11, 2017
CCR-1024-996	Component Completion Record - HI-STORM 100S	August 11, 2017
NUPIC Audit 24235	Holtec Manufacturing Division	January 9, 2017
PAD2015-20-S- 01-002	Process Applicability Determination Form	August 20, 2015

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision/Date</u>
PAD2015-20-S-01-003	Process Applicability Determination Form	October 13, 2015
PAD2015-20-S-01-140	Process Applicability Determination Form	August 20, 2015
PAD2015-20-S-03-201	Process Applicability Determination Form	October 14, 2015
PAD2016-20-S-02-001	Process Applicability Determination Form	June 1, 2016
PAD2017-20-S-01-020	Process Applicability Determination Form	May 31, 2017
QA-20-2016-GGNS-1	QUALITY ASSURANCE AUDIT REPORT	September 15, 2016
QS-2017-GGNS-001	Quality Assurance Surveillance Report	January 3, 2017
QS-2017-GGNS-002	Quality Assurance Surveillance Report	January 3, 2017
QS-2017-GGNS-012	Quality Assurance Surveillance Report	May 31, 2017
QS-2017-GGNS-013	Quality Assurance Surveillance Report	May 31, 2017
WT-WTHQN-2015-00085	Entergy Source Activity Report	May 31, 2017
WT-WTHQN-2015-00275	Entergy Source Activity Report	April 12, 2015
WT-WTHQN-2015-00277	Entergy Source Activity Report	April 12, 2015
WT-WTHQN-2015-00605	Entergy Source Activity Report	August 28, 2015
WT-WTHQN-2015-00646	Entergy Source Activity Report	August 28, 2015
WT-WTHQN-2015-00678	Entergy Source Activity Report	October 14, 2015
WT-WTHQN-2016-00201	Entergy Source Activity Report	April 7, 2016
WT-WTHQN-2016-00774	Entergy Source Activity Report	November 18, 2016

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision/Date</u>
WT-WTHQN-2016-00775	Entergy Source Activity Report	November 20, 2016
WT-WTHQN-2016-00776	Entergy Source Activity Report	February 20, 2017
WT-WTHQN-2016-00777	Programmatic Surveillance Report	January 17, 2017

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
01-S-06-50	Control of Fuel Services Operations	009
04-1-01-F1103	Fuel Handling Platform	052
06-OP-1000-D-0001	Daily Operating Logs Data Sheet (multiple)	146
20-S-01-002	DFS Cask Loading	008
20-S-01-003	DFS HI-STORM/HI-TRAC Transport	009
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EN-FAP-OU-108	Fuel Handling Process	005
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Condition Reports (CR-GGN-)

2016-03672	2016-03674	2016-03734	2016-06448	2016-06560
2016-06579	2016-06593	2016-06596	2016-06597	2016-06601
2016-06699	2016-06991	2017-00264	2017-02507	2017-06085
2017-06263	2017-07473			

Work Orders

00385435	00410005	00416275	00422624	00451523
00451524	00451535	52586459	52596595	52621726
52647833	52654176			