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

July 30, 2015

Mr. Michael R. Chisum
Site Vice President
Entergy Operations, Inc.
17265 River Road
Killona, LA 70057-0751

SUBJECT: WATERFORD STEAM ELECTRIC STATION, UNIT 3 – NRC INTEGRATED INSPECTION REPORT 05000382/2015002

Dear Mr. Chisum:

On June 30, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Waterford Steam Electric Station, Unit 3. On July 7, 2015, 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 two findings of very low safety significance (Green) in this report. Both 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 NRC 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 inspectors at the Waterford Steam Electric Station, Unit 3.

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 inspectors at the Waterford Steam Electric Station, Unit 3.

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/

Geoffrey Miller, Chief
Projects Branch D
Division of Reactor Projects

Docket No. 50-382
License No. NPF-38

Enclosure:
Inspection Report 05000382/2015002
w/ Attachment: Supplemental Information

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Letter to Michael R. Chisum from Geoffrey Miller, dated July 30, 2015

SUBJECT: WATERFORD STEAM ELECTRIC STATION, UNIT 3 – NRC INTEGRATED INSPECTION REPORT 05000382/2015002

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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket:	05000382
License:	NPF-38
Report:	05000382/2015002
Licensee:	Entergy Operations, Inc.
Facility:	Waterford Steam Electric Station, Unit 3
Location:	17265 River Road Killona, LA 70057
Dates:	April 1 through June 30, 2015
Inspectors:	F. Ramírez, Senior Resident Inspector C. Speer, Resident Inspector T. Sullivan, Acting Resident Inspector B. Hagar, Senior Project Engineer, Branch D P. J. Elkmann, Senior Emergency Preparedness Inspector C. Young, Senior Project Engineer G. L. Guerra, CHP, Emergency Preparedness Inspector C. Steely, Operations Engineer E. Uribe, Reactor Inspector
Approved By:	Geoffrey Miller Chief, Project Branch D Division of Reactor Projects

SUMMARY

IR 05000382/2015002; 04/01/2015 – 06/30/2015; Waterford Steam Electric Station, Unit 3; Adverse Weather Protection, Problem Identification and Resolution.

The inspection activities described in this report were performed between April 1 and June 30, 2015, by the resident inspectors at the Waterford Steam Electric Station, Unit 3, and inspectors from the NRC's Region IV office. Two findings of very low safety significance (Green) are documented in this report. 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, "Aspects within the Cross-Cutting Areas." 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."

Cornerstone: Initiating Events

- Green. The inspectors identified a non-cited violation of Technical Specification 6.8.1.a and Regulatory Guide 1.33, Revision 2, Appendix A, for the licensee's failure to follow procedure OP-901-521, "Severe Weather and Flooding," Revision 313. Specifically, on April 24, 2015, the licensee failed to assess and control potential tornado-borne missile hazards on-site as required by the procedure. The licensee entered this condition into their corrective action program as condition report CR-WF3-2015-02556. The licensee restored compliance by securing the identified hazards.

  This finding was more than minor because it was associated with the protection against external factors attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, in the event of a tornado at the site, the loose items could have become missiles with the potential to initiate a loss of off-site power adversely impacting safety-related equipment and personnel. The inspectors performed the initial significance determination for the finding using NRC Inspection Manual Chapter 0609, Appendix A, Exhibit 4, "External Event Screening Questions," dated June 12, 2012. The finding required a detailed evaluation because it had the potential to degrade at least one train of a system that supports a risk significant system or function. Therefore, a senior reactor analyst performed a bounding detailed risk evaluation. The analyst determined that the finding was of very low safety significance (Green). The bounding change to the core damage frequency was less than 1.1E-7/year. The finding was not significant with respect to the large early release frequency. The dominant core damage sequences included tornado induced losses of off-site power, and random and common cause diesel generator failures. The ability to recover the diesel generators helped to minimize the significance of the event. The finding has a Resolution cross-cutting aspect in the area of Problem Identification and Resolution, because the licensee did not take effective corrective actions to address issues in a timely manner commensurate with their safety significance. Specifically, the licensee did not take effective corrective actions to address the issue after the inspectors identified it during previous tornado watches in 2013 and 2014 [P.3] (Section 1R01).

Cornerstone: Mitigating Systems

- 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 licensee's failure to follow procedure PMC-002-007, "Maintenance and Construction Painting," while performing work on emergency diesel generator A. Specifically, while conducting painting activities in the emergency diesel generator cubicle between June 2014 and October 2014, the licensee failed to ensure that painting activities would not have an adverse impact on the moving parts and surfaces of the emergency diesel generator. Consequently, emergency diesel generator A failed to operate properly during a surveillance test on March 2, 2015. Immediate corrective actions included replacing the cylinder 7R fuel injector and fuel injection pump. The licensee restored emergency diesel generator A to operable status on March 4, 2015. The licensee entered this issue into their corrective action program as CR-WF3-2015-02626.

  This finding was more than minor because it was associated with the human performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee conducted painting on and around the emergency diesel generator in such a manner that paint was inadvertently deposited and remained in a location which caused the cylinder 7R fuel metering rod to jam at the full-fuel position, which ultimately caused emergency diesel generator A to fail its surveillance test on March 2, 2015, and be declared inoperable. Using NRC Inspection Manual Chapter 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined that this finding was of very low safety significance (Green) because it did not represent a design or qualification deficiency, did not represent a loss of safety function for a single train for greater than its technical specification allowed outage time, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a Field Presence cross-cutting aspect in the area of Human Performance in that the licensee failed to provide adequate supervisory and management oversight of work activities to ensure deviations from standards and expectations were corrected promptly. [H.2] (Section 4OA2).

PLANT STATUS

The Waterford Steam Electric Station, Unit 3, began the inspection period at 100 percent power. On April 17, 2015, the licensee lowered power to 70 percent due to a level switch failure on the low pressure feedwater heater 5C. Following repairs, the licensee raised power to 100 percent on April 20, 2015. On June 3, 2015, the control room operators manually tripped the reactor due to the automatic isolation of feedwater heater 2C and subsequent trip of main feedwater pump A. Following repairs to the feedwater heater 2C normal level control valve, the licensee restarted the reactor on June 6, 2015, and achieved 100 percent power on June 8, 2015. The licensee shutdown the reactor on June 23, 2015, to address a steam leak on an isolation valve that was downstream of a main feedwater regulating valve. The licensee restarted the reactor on June 24, 2015, and achieved 100 percent power on June 25, 2015. The unit maintained 100 percent power for the remainder of the inspection period.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Summer Readiness for Off-site and Alternate AC Power Systems

a. Inspection Scope

On May 29, 2015, the inspectors completed an inspection of the station's off-site and alternate-ac power systems. The inspectors inspected the material condition of these systems, including transformers and other switchyard equipment to verify that plant features and procedures were appropriate for operation and continued availability of off-site and alternate-ac power systems. The inspectors reviewed outstanding work orders and open condition reports for these systems. The inspectors walked down the switchyard to observe the material condition of equipment providing off-site power sources.

The inspectors verified that the licensee's procedures included appropriate measures to monitor and maintain availability and reliability of the off-site and alternate-ac power systems.

This activity constituted one sample of summer readiness of off-site and alternate-ac power systems, as defined in Inspection Procedure 71111.01.

b. Findings

No findings were identified.

.2 Readiness for Impending Adverse Weather Conditions

a. Inspection Scope

On April 24, 2015, the inspectors completed an inspection of the station's readiness for impending adverse weather conditions. The inspectors reviewed plant design features, the licensee's procedures to respond to tornadoes and high winds, and the licensee's implementation of these procedures. The inspectors evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant.

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

b. Findings

Introduction. The inspectors identified a Green, non-cited violation of Technical Specification 6.8.1.a and Regulatory Guide 1.33, Revision 2, Appendix A, for the licensee's failure to follow procedure OP-901-521, "Severe Weather and Flooding," Revision 313. Specifically, on April 24, 2015, the licensee failed to assess and control potential tornado-borne missile hazards on-site as required by the procedure.

Description. On April 24, 2015, a tornado watch was issued for the area surrounding the Waterford Unit 3 site. Operations personnel directed maintenance personnel to tour the area surrounding the site and to secure or store any loose items that could become tornado-generated missile hazards in accordance with off-normal procedure OP-901-521, "Severe Weather and Flooding," Revision 313.

The inspectors reviewed the requirements of procedure OP-901-521 and procedure EN-FAP-EP-010, "Severe Weather Response," which is referenced by procedure OP-901-521 for examples of potential tornado-generated missiles to secure. The inspectors toured the plant site during the tornado watch to verify the licensee's implementation of procedural requirements to ensure potential tornado-borne missile hazards were appropriately identified and secured. The inspectors identified multiple examples of loose material that were not properly secured. Several of the items identified directly corresponded to examples given in procedure EN-FAP-EP-010 of loose items to secure during a tornado watch. Examples of loose materials included improperly secured scaffolding and trash bins, loose wood, and general debris in the vicinity of the transformer yard and the switchyard. The inspectors identified loose materials both before and after licensee personnel had inspected the area to identify loose materials. In the event of a tornado, the loose items had the potential to become missile hazards with the potential to initiate a loss of off-site power or adversely impact safety-related equipment or site personnel. Following the site tours, the inspectors notified operations personnel of the concerns and the licensee took action to correct them.

The inspectors had previously identified findings related to securing potential tornado-borne missile hazards, as documented in Integrated Inspection Reports 05000382/2013002 and 05000382/2014005 (ADAMS ML13134A345 and ML15044A273, respectively). The inspectors reviewed the corrective actions implemented to address the non-cited violations from these inspection reports, and determined that the licensee did not fully address the issue as previously identified. Although examples of loose material were now included in procedure OP-901-521, the

inspectors noted that the procedure did not include directions for how to secure the material. In addition, while the licensee routinely provided management oversight for securing loose material, they did not explicitly provide oversight for the completion of procedure OP-901-521.

Analysis. The inspectors concluded that the failure to assess and control potential tornado-borne missile hazards as required by licensee procedure OP-901-521, "Severe Weather and Flooding," Revision 313 was a performance deficiency. The inspectors determined that the performance deficiency was reasonably within the licensee's ability to foresee and correct. The inspectors concluded that the performance deficiency was more than minor because it was associated with the protection against external factors attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, in the event of a tornado at the site, the loose items could have become missiles with the potential to initiate a loss of off-site power or adversely impact safety-related equipment or site personnel.

The inspectors used NRC Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," to evaluate the finding for its impact on the Initiating Events cornerstone. The initial screening directed the inspectors to use Appendix A, "The Significance Determination Process for Findings At-Power," to determine the significance of the finding. The inspectors determined that the finding required a detailed evaluation because it would degrade at least one train of a system that supports a risk significant system or function. Therefore, a senior reactor analyst performed a bounding detailed risk evaluation.

Tornado Statistics: The average number of tornados in Louisiana per year was 27 (See http://www.erh.noaa.gov/cae/svrwx/tornadobystate.htm).

The total area used for the state of Louisiana was 51,840 square miles.

Plant Area: For this risk evaluation, the analyst assumed that the Waterford-3 nuclear island and switchyard occupied one square mile of land. This was conservative, in that this equipment of concern (primarily the switchyard) occupied less than one square mile.

The frequency for tornados within this square mile was 27/51,840 = 5E-4/year. A tornado at the site would not necessarily result in a loss of off-site power (because of debris in the switchyard). In most cases, the debris would be unaffected, thrown out of the switchyard, or would only affect one train of off-site power (a less significant event). To account for this conservatism, the analyst reduced the frequency for tornados/debris induced losses of off-site power by one order of magnitude to 5E-5/year.

SPAR Calculations: The analyst used the NRC's Waterford-3 Standardized Plant Analysis Risk (SPAR) model, Revision 8.16, with a truncation limit of E-11, to evaluate this finding. The exposure period was a full year. The analyst solved only the loss of off-site power sequences.

The analyst created a change-set to determine the conditional core damage probability (CCDP) associated with a non-recoverable loss of off-site power. The analyst set all of the off-site power non-recovery events to 1.0. In addition, the analyst set the loss of off-

site power initiating event to 1.0. The emergency diesel generator recovery events were allowed to occur as designed. The CCDP for the event was 2.2E-3.

The bounding delta core damange frequency (ΔCDF) was the tornado frequency multiplied by the CCDP. The ΔCDF was:

ΔCDF = 5E-5/year * 2.2E-3 = 1.1E-7/year

The dominant core damage sequences included tornado induced losses of off-site power, and random and common cause diesel generator failures. The ability to recover the diesel generators helped to minimize the significance of the event. The finding was of very low safety significance (Green).

Large Early Release Frequency (LERF): To address the contribution to the conditional large early release frequency, the analyst used NRC Inspection Manual Chapter 0609, Appendix H, "Containment Integrity Significance Determination Process," dated May 6, 2004. The finding was not significant to LERF because it did not directly affect the steam generator tube rupture or the inter-system loss of coolant accident sequences.

The inspectors concluded that the finding reflected current licensee performance and had a Resolution cross-cutting aspect in the area of Problem Identification and Resolution, because the licensee did not take effective corrective actions to address issues in a timely manner commensurate with their safety significance. Specifically, the licensee did not take effective corrective actions to address the issue after it was identified by the inspectors during previous tornado watches in 2013 and 2014 [P.3].

Enforcement. Technical Specification 6.8.1.a, requires, in part, that procedures shall be established, implemented, and maintained covering "the applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2." Section 6.w of Appendix A to Regulatory Guide 1.33, Revision 2, requires procedures for combatting "Acts of Nature," including tornados. The licensee established procedure OP-901-521, "Severe Weather and Flooding," Revision 313, to meet this requirement. Step E2.6 of procedure OP-901-521 requires that loose items that pose a threat to the plant equipment or personnel be secured during a tornado watch or warning.

Contrary to the above, on April 24, 2015, the licensee did not secure loose items that posed a threat to the plant equipment or personnel during a tornado watch. Specifically, the licensee did not secure scaffolding, a trash bin, loose wood, and general debris located near the transformer yard and the switchyard. As a result, the loose items had the potential to become missile hazards with the potential to initiate a loss of off-site power or adversely impact safety-related equipment or site personnel. The licensee entered this condition into their corrective action program as condition report CR-WF3-2015-02556. The licensee restored compliance by controlling the identified hazards.

Because this violation was of very low safety significance and the licensee entered the issue into their corrective action program, this violation is being treated as a non-cited violation, consistent with Section 2.3.2.a of the Enforcement Policy: NCV 05000382/2015002-01, "Failure to Identify and Secure Potential Tornado-Borne Missile Hazards."

1R04 Equipment Alignment (71111.04)

Partial Walkdown

a. Inspection Scope

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

- On April 6, 2015, emergency diesel generator train B with emergency diesel generator train A out of service for maintenance
- On April 21, 2015, temporary emergency diesel generators during emergency diesel generator train B outage
- On June 8, 2015, electrical line-up of safety-related buses train B following restoration after forced outage
- On June 16, 2015, high pressure safety injection train A with high pressure safety injection train B out of service for maintenance

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

These activities constituted four 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:

- On April 24, 2015, fire area RAB 16, emergency diesel generator "3A"
- On April 24, 2015, fire area RAB 3A, reactor auxiliary building vestibule
- On June 10, 2015, fire area RAB 31, -4.00 foot elevation reactor auxiliary building general area
- On June 11, 2015, fire area ROOF W, main steam isolation valve A

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 fire-fighting 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 June 10, 2015, 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 one plant area containing risk-significant structures, systems, and components that were susceptible to flooding. The inspectors completed an inspection of the -35 foot elevation reactor building wing area.

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 April 13, 2015, the inspectors observed an evaluated simulator scenario performed by an operating crew. The inspectors assessed the performance of the operators and the evaluators' critique of their performance.

This activity constitutes 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 April 17, 2015, the inspectors observed the performance of on-shift licensed operators in the plant's main control room. At the time of the observations, the plant was in a period of heightened activity due to an emergent downpower to 70 percent power as a result of the isolation of the 5C and 6C low pressure heaters. The inspectors observed the operators' performance of alarm response and shift briefings.

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.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

On June 19, 2015, the inspectors reviewed one instance of degraded performance or condition of safety-related structures, systems, and components (SSCs) on the site's emergency diesel generators.

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.

This activity constituted completion of one maintenance effectiveness 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 two 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:

- On April 1, 2015, scheduled maintenance associated with train A switchgear ventilation unit
- On April 15, 2015, yellow risk due to scheduled maintenance on train B switchgear ventilation unit and emergent tornado warning

The inspectors verified that these risk assessments were 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 assessments and verified that the licensee implemented appropriate risk management actions based on the result of the assessments.

The inspectors also observed portions of three emergent work activities that had the potential to cause an initiating event, to affect the functional capability of mitigating systems, or to impact barrier integrity:

- On April 24, 2015, emergent yellow risk due to tornado watch and scheduled maintenance on emergency diesel generator train B
- On June 5, 2015, emergent plant maintenance associated with plant trip on June 3, 2015
- On June 23, 2015, emergent plant maintenance associated with forced shutdown on June 22, 2015

The inspectors verified that the licensee appropriately developed and followed work plans for these activities. The inspectors verified that the licensee took precautions to minimize the impact of the work activities on unaffected structures, systems, and components.

These activities constitute completion of five 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 six operability determinations and functionality assessments that the licensee performed for degraded or nonconforming SSCs:

- On April 1, 2015, operability determination of wet cooling tower train A cross-connect valve
- On April 7, 2015, operability determination of emergency feedwater header B to steam generator 2 backup flow control valve
- On April 7, 2015, operability determination of the emergency diesel generators trains A and B due to a cable sizing issue
- On April 13, 2015, operability determination of emergency diesel generators due to non-conservative technical specification surveillance requirement
- On May 28, 2015, functionality assessment of diesel driven and motor driven fire pumps
- On June 6, 2015, operability determination of emergency feedwater system

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

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

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

.1 Permanent Modifications

a. Inspection Scope

On April 22, 2015, the inspectors reviewed a permanent modification to dry cooling tower fan 5A.

The inspectors reviewed the design and implementation of the modification. The inspectors verified that work activities involved in implementing the modification did not adversely impact operator actions that may be required in response to an emergency or other unplanned event. The inspectors verified that post-modification testing was adequate to establish the operability of the sturctures, systems and compoenents as modified.

These activities constitute completion of one sample of permanent modifications, as defined in Inspection Procedure 71111.18.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed seven post-maintenance testing activities that affected risk-significant SSCs:

- On April 10, 2015, emergency diesel generator train A
- On April 30, 2015, emergency feedwater to steam generator 1 primary isolation valve
- On May 21, 2015, emergency diesel generator train B following emergent maintenance
- On May 26, 2015, emergency feedwater header B to steam generator 2 backup flow control valve
- On June 8, 2015, safety-related 3B bus fast-transfer circuitry
- On June 17, 2015, high pressure safety injection pump B
- On June 19, 2015, nitrogen accumulator #4 outlet valve

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 seven post-maintenance testing inspection samples, as defined in Inspection Procedure 71111.19.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

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

In-service tests:

- On June 12, 2015, containment spray pump B in-service testing

Other surveillance tests:

- On April 2, 2015, reactor coolant pump 2A relay calibration
- On May 18, 2015, emergency diesel generator B 24-hr operability verification
- On May 29, 2015, emergency diesel generators hot restart test requirements

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 four surveillance testing inspection samples, as defined in Inspection Procedure 71111.22.

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

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

a. Inspection Scope

The inspectors performed an in-office review of:

- Emergency Plan Implementing Instruction EP-001-40, “General Emergency,” Revision 308, dated December 22, 2014
- Emergency Plan Implementing Procedure EP-002-52, “Protective Action Guidelines,” Revision 24, dated December 23, 2014
- Emergency Plan Implementing Procedure EP-02-50, “Site Dose Assessment,” Revision 306, dated December 29, 2014

These revisions:

- defined a rapidly progressing severe accident and provided an initial protective action recommendation,
- provided an initial protective action recommendation for general emergencies that are not a rapidly progressing severe accident,

- added “monitor and prepare” as an action to be recommended for the public,
- deleted references to making a shelter-in-place recommendation when the licensee is aware of impediments to evacuation,
- deleted references to the time needed to evacuate geographical sub-areas of the emergency planning zone,
- provided guidance for estimating the dose from multiple simultaneous release points, and
- made additional administrative changes.

The inspectors compared these revisions to their previous revisions, to the criteria of NUREG-0654, “Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants,” Revision 1, and to the standards in 10 CFR 50.47(b) to determine if the revisions adequately implemented the requirements of 10 CFR 50.54(q)(3) and 50.54(q)(4). The inspectors verified that the revisions did not decrease the effectiveness of the emergency plan. These reviews were not documented in a safety evaluation report and did not constitute approval of licensee-generated changes; therefore, these revisions are subject to future inspection.

These activities constitute completion of three emergency action level and emergency plan changes samples as defined in Inspection Procedure 71114.04.

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06)

Training Evolution Observation

a. Inspection Scope

On June 10, 2015, 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 constitute completion of one training observation sample, as defined in Inspection Procedure 71114.06.

b. Findings

No findings were identified.

1EP7 Exercise Evaluation – Hostile Action Event (71114.07)

a. Inspection Scope

The inspectors observed the June 24, 2015, biennial emergency plan exercise to verify the exercise acceptably tested the major elements of the emergency plan, provided opportunities for the emergency response organization to demonstrate key skills and functions, and demonstrated the licensee's ability to coordinate with off-site emergency responders. The scenario simulated the following to demonstrate the licensee's capability to implement its emergency plan under conditions of uncertain physical security:

- receipt of a credible threat against the licensee's site
- the crash of a large aircraft inside the protected area
- injuries to plant employees
- a large fire on the turbine deck
- damage to two main transformers, the fire protection system, and steam lines and piping in the turbine building; the loss of station air, instrument air, and a diesel generator fuel transfer pump; and the loss of an electric bus in the turbine building
- an excess steam demand event

During the exercise the inspectors observed activities in the Control Room Simulator and the following emergency response facilities:

- Alternate Technical Support Center
- Alternate Operations Support Center
- Emergency Operations Facility
- Central and/or Secondary Alarm Station(s)
- Incident Command Post

The inspectors focused their evaluation of the licensee's performance on event classification, off-site notification, recognition of off-site dose consequences, development of protective action recommendations, staffing of alternate emergency response facilities, and the coordination between the licensee and off-site agencies to ensure reactor safety under conditions of uncertain physical security.

The inspectors also assessed recognition of, and response to, abnormal and emergency plant conditions, the transfer of decision-making authority and emergency function responsibilities between facilities, on-site and off-site communications, protection of plant employees and emergency workers in an uncertain physical security environment, emergency repair evaluation and capability, and the overall implementation of the emergency plan to protect public health and safety and the environment. The inspectors reviewed the current revision of the facility emergency plan, emergency plan implementing procedures associated with operation of the licensee's primary and alternate emergency response facilities, and procedures for the performance of associated emergency and security functions.

The inspectors attended the post-exercise critiques in each emergency response facility to evaluate the initial licensee self-assessment of exercise performance. The inspectors

also attended a subsequent formal presentation of critique items to plant management. The specific documents reviewed during this inspection are listed in the attachment.

The inspectors reviewed the scenario of previous biennial exercises and licensee drills conducted between July 2013 and June 2015, to determine whether the June 24, 2015, exercise was independent and avoided participant pre-conditioning in accordance with the requirements of 10 CFR Part 50, Appendix E, IV.F(2)(g). The inspectors also compared observed exercise performance with corrective action program entries and After-Action reports for drills and exercises conducted between January 2014 and May 2015 to determine whether identified weaknesses had been corrected in accordance with the requirements of 10 CFR 50.47(b)(14), and 10 CFR Part 50, Appendix E, IV.F.

These activities constituted completion of one exercise evaluation sample as defined in Inspection Procedure 71114.07.

b. Findings

No findings were identified.

1EP8 Exercise Evaluation – Scenario Review (71114.08)

a. Inspection Scope

The licensee submitted the preliminary exercise scenario for the June 24, 2015, biennial exercise to the NRC on April 23, 2015, in accordance with the requirements of 10 CFR Part 50, Appendix E, IV.F(2)(b). The inspectors performed an in-office review of the proposed scenario to determine whether it would acceptably test the major elements of the licensee's emergency plan, and provide opportunities for the emergency response organization to demonstrate key skills and functions.

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 Safety System Functional Failures (MS05)

a. Inspection Scope

On April 28, 2015, for the period of April 1, 2014, through March 31, 2015, the inspectors reviewed licensee event reports, maintenance rule evaluations, and other records that could indicate whether safety system functional failures had occurred. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, and NUREG-

1022, “Event Reporting Guidelines: 10 CFR 50.72 and 50.73,” Revision 3, to determine the accuracy of the data reported.

These activities constituted verification of the safety system functional failures performance indicator for Waterford Steam Electric Station, Unit 3, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.2 Mitigating Systems Performance Index: Emergency AC Power Systems (MS06)

a. Inspection Scope

On June 29, 2015, the inspectors reviewed the licensee’s mitigating system performance index data for the period of April 1, 2014, through March 31, 2015, 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 mitigating system performance index for emergency ac power systems for Waterford Steam Electric Station, Unit 3, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

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

a. Inspection Scope

On June 29, 2015, the inspectors reviewed the licensee’s mitigating system performance index data for the period of April 1, 2014, through March 31, 2015, to verify the accuracy and completeness of the reported data. The inspector 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 mitigating system performance index for high pressure injection systems for Waterford Steam Electric Station, Unit 3, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.4 Drill/Exercise Performance (EP01)

a. Inspection Scope

The inspectors reviewed the licensee's evaluated exercises, emergency plan implementations, and selected drill and training evolutions that occurred between October 2014 and March 2015 to verify the accuracy of the licensee's data for classification, notification, and protective action recommendation (PAR) opportunities. The inspectors reviewed a sample of the licensee's completed classifications, notifications, and PARs to verify their timeliness and accuracy. The inspectors used Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the data reported. 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.

.5 Emergency Response Organization Drill Participation (EP02)

a. Inspection Scope

The inspectors reviewed the licensee's records for participation in drill and training evolutions between October 2014 and March 2015 to verify the accuracy of the licensee's data for drill participation opportunities. The inspectors verified that all members of the licensee's emergency response organization in the identified key positions had been counted in the reported performance indicator data. The inspectors reviewed the licensee's basis for reporting the percentage of emeregency response organization members who participated in a drill. The inspectors reviewed drill attendance records and verified a sample of those reported as participating. The inspectors used Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the data reported. 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.

.6 Alert and Notification System Reliability (EP03)

a. Inspection Scope

The inspectors reviewed the licensee's records of Alert and Notification System tests conducted between October 2014 and March 2015 to verify the accuracy of the licensee's data for siren system testing opportunities. The inspectors reviewed

procedural guidance on assessing Alert and Notification System opportunities and the results of periodic alert and notification system operability tests. The inspectors used Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the data reported. 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.

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 reviewed the licensee's corrective action program, performance indicators, system health reports, maintenance rule functional failure determinations, 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 constitute completion of one semiannual trend review sample, as defined in Inspection Procedure 71152.

b. Observations and Assessments

The inspectors identified a trend involving emergency diesel generator lube oil leakage issues. The inspectors noted that various sources of lube oil leakage have been identified and entered into the licensee's corrective action program over the last 12-month period. The inspectors identified 10 examples for both the Train A and Train B

emergency diesel generators where leakage had been identified. The inspectors noted that the licensee had identified and documented the various leaks at the appropriate threshold, but lube oil leakage was not being addressed as a site trend. As a result, the issue did not receive the reviews necessary to evaluate the effectiveness of corrective actions to address whether new corrective actions were necessary.

The inspectors identified another trend involving issues with feedwater heater level control valves and associated controllers that had been documented in the licensee's corrective action program over the last 12-month period. The inspectors identified 15 examples of condition reports that documented various issues associated with the feedwater heater level control valves. The issues included but are not limited to: packing leaks, failure to maintain proper position, level controller air leaks, level controller performance issues, and valve position indication issues. The inspectors noted that the most recent reactor manual trip was caused by a combination of level control valve issues. Specifically, the normal level control valve for feedwater heater 2C failed while the alternate level control valve for the same heater was out of service for maintenance. The inspectors noted that the licensee had identified and documented the various level control valve issues at the appropriate threshold but they were not being addressed as a site trend. As a result, the issues did not receive the reviews necessary to evaluate the effectiveness of corrective actions to address whether new corrective actions were necessary.

The inspectors discussed these two trends with the licensee. The licensee acknowledged the trends and entered them in the corrective action program to determine whether existing actions were sufficient to address these trends.

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

c. Findings

No findings were identified.

.3 Annual Follow-up of Selected Issues

a. Inspection Scope

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

- On September 16, 2014, after performing work on safety injection sump outlet header B isolation valve SI-602B, the licensee closed the associated work order before the operations department completed the required post-maintenance stroke-time test.

- On March 2, 2015, during the monthly surveillance test on emergency diesel generator A using procedure OP-903-068, "Emergency Diesel Generator and Subgroup Relay Operability Verification," control room operators emergently secured the diesel generator due to field personnel reports of abnormal black smoke from the exhaust and abnormal knocking noises coming from the emergency diesel generator. A subsequent failure analysis determined that the

direct cause of the abnormal operating condition was a stuck fuel metering rod on the cylinder 7R fuel injection pump due to foreign material intrusion in the fuel metering rod.

- On May 14, 2015, the licensee implemented compensatory measures associated with NCV 05000382/2015001-01, "Failure to Identify and Perform Testing of Safety-Related Dry Cooling Tower Tube Bundle Isolation Valves." As documented in the NCV, the licensee did not perform testing to demonstrate that the dry cooling tower tube bundle isolation valves could be used to isolate a tube bundle following a tornado missile strike on the non-missile-protected portions of the dry cooling tower. Since testing was scheduled as a long-term corrective actions item, the licensee implemented compensatory measures to justify operability of the dry cooling tower tube bundle isolation valves.

In each case, 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.

These activities constitute completion of three annual follow-up samples as defined in Inspection Procedure 71152.

b. Findings

Introduction. The inspectors reviewed a self-revealing Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to follow procedure PMC-002-007, "Maintenance and Construction Painting," while performing work on emergency diesel generator A. Specifically, while conducting painting activities in the emergency diesel generator cubicle between June 2014 and October 2014, the licensee failed to ensure that painting activities would not have an adverse impact on the moving parts and surfaces of the emergency diesel generator.

Description. On March 2, 2015, the Waterford-3 station performed the monthly surveillance test on emergency diesel generator A using procedure OP-903-068, "Emergency Diesel Generator and Subgroup Relay Operability Verification." In accordance with the test procedure, the operators start the emergency diesel generator, parallel the generator to safety bus 3A, and gradually increase load until the full load value of 4400 KW is achieved. During the test, plant personnel in the field reported abnormal black smoke coming from the exhaust and abnormal knocking noises coming from the diesel generator. As a result, the operators shutdown the emergency diesel generator and declared it inoperable. The licensee determined that a failure in the cylinder 7R fuel injector and fuel injection pump had caused the test failure. The licensee consequently replaced the cylinder 7R fuel injector and injection pump, and sent the faulty injector and injection pump to an external engineering firm contracted by the licensee to perform a failure analysis. Subsequently, the licensee declared emergency diesel generator A operable on March 4, within the limit on the inoperable time period allowed by technical specifications.

Based on the results from the failure analysis, the licensee determined that the direct cause of the abnormal operating condition was a stuck fuel metering rod on the cylinder 7R fuel injection pump due to foreign material intrusion into the metering rod bore. Specifically, the engineering firm concluded that the cause of the stuck pump fuel metering rod was the presence of a large spot of paint on the outer diameter of the metering rod. The metering rod became stuck when the paint spot traveled sufficiently into the annulus between the fuel metering rod and bore. The licensee removed the paint spot from the fuel metering rod and restored its full range of travel. Since the licensee completed painting activities in the diesel generator cubicle during October 2014, the emergency diesel generator had been operated successfully at least four times prior to the unsuccessful run on March 2, 2015. The engineering firm stated that it is not clear why the paint spot did not cause the fuel metering rod to stick during one of the earlier surveillance tests, particularly during the first surveillance test that followed the painting activities. Additionally, the engineering firm concluded that emergency diesel generator would have been able to complete its mission time (performing its safety function for at least 30 days) even with the cylinder 7R fuel metering rod stuck at the full fuel position. The licensee subsequently issued an apparent cause evaluation which incorporated the failure analysis results provided by the engineering firm.

The inspectors reviewed procedure PMC-002-007, “Maintenance and Construction Painting,” and noted that section 6.2.18 provided instructions that specifically covered painting activities in regards to moving parts and surfaces. In addition, the inspectors noted that work order 375811, which authorized painting in the diesel generator cubicle, provided specific instructions that addressed painting on and around emergency diesel generator moving parts and surfaces. Further, work order 375811 provided a diagram with instructions on which parts not to paint, including the fuel injection pump and fuel metering rod. The licensee ultimately concluded that the large spot of paint was inadvertently brushed into the fuel metering rod during painting activities and was not cleaned following the painting evolution. The inspectors concluded that even though the procedure and work order provided adequate instructions for painting in the diesel generator cubicle, the licensee had failed to ensure that workers in the field adhered to the procedure and work order expectations.

Analysis: The licensee’s failure to follow the station painting procedure (PMC-002-007) was reasonably within the licensee’s ability to foresee and correct, and is therefore a performance deficiency. Consistent with the guidance in NRC Inspection Manual Chapter 0612, Appendix B, “Issue Screening,” the performance deficiency was more than minor because it was associated with the human performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee conducted painting on and around the emergency diesel generator in such a manner that paint was inadvertently deposited and remained in a location which caused the cylinder 7R fuel metering rod to jam at the full-fuel position, which ultimately caused emergency diesel generator A to fail its surveillance test and be declared inoperable.

Using NRC Inspection Manual Chapter 0609, Appendix A, Exhibit 2, “Mitigating Systems Screening Questions,” the inspectors determined that this finding was of very low safety significance (Green) because it did not represent a design or qualification deficiency, did not represent a loss of safety function for a single train for greater than its allowed

technical specification allowed outage time, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event.

This finding has a Field Presence cross-cutting aspect in the area of Human Performance because the licensee failed to provide adequate supervisory and management oversight of work activities to ensure deviations from standards and expectations were corrected promptly [H.2].

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be accomplished in accordance with documented instructions, procedures, or drawings of a type appropriate to the circumstances. Licensee procedure PMC-002-007, "Maintenance and Construction Painting," provides instructions for painting in safety-related plant areas. Procedure PMC-002-007, Step 6.2.18.1, states in part, that upon completion of painting, Painting Supervisor or his designee shall verify all moving parts are clean.

Contrary to the above, during painting evolutions conducted between June 2014 and October 2014 in the emergency diesel generator A cubicle, the licensee did not ensure that all moving parts were clean upon completion of the painting evolutions. Specifically, the licensee failed to identify a large spot of paint on the fuel metering rod for cylinder 7R, which caused the fuel metering rod to become stuck in the full-fuel position during the monthly run of the emergency diesel generator on March 2, 2015. Immediate corrective actions included replacing the cylinder 7R fuel injector and fuel injection pump. Subsequently, the licensee declared emergency diesel generator A operable on March 4, 2015. Because this finding was of very low safety significance (Green), and was entered into the licensee's corrective action program as CR-WF3-2015-02626, this violation is being treated as a non-cited violation, consistent with Section 2.3.2.a of the Enforcement Policy: NCV 05000382/2014005-02, "Failure to Follow Instructions in Painting Procedure while Painting on Safety-Related Equipment."

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

a. Inspection Scope

The inspectors reviewed the following two events:

(1) Manual Reactor Trip Due to Secondary Plant Transient

On June 3, 2015, Waterford-3 control room operators manually tripped the reactor due to the isolation of feedwater heater 2C and subsequent trip of the main feedwater pump A. The inspectors reviewed the application of standard post trip actions, licensee's post-trip review report and causal evaluation process. During the plant shutdown, the inspectors monitored the licensee's identification and resolution of problems related to the manual reactor trip, tracked start-up prerequisites, and verified the completion of associated corrective actions prior to reactor start-up. In addition, the inspectors reviewed licensee's controls over activities that could affect reactivity and observed portions of start-up and power ascension activities.

(2) Forced Reactor Shutdown due to Secondary Plant Steam Leak

On June 22, 2015, Waterford control room operators commenced a reactor shutdown to address a steam leak in the main feedwater system. Specifically, a failed weld in the steam generator 1 main feedwater regulating valve downstream isolation valve caused a steam leak that could not be repaired on-line. The inspectors observed plant shutdown activities, and reviewed the licensee's causal evaluation process. While the plant was shutdown, the inspectors monitored the repair activities, tracked start-up prerequisites, and verified the completion of associated corrective actions prior to reactor start-up. In addition, the inspectors reviewed licensee's controls over activities that could affect reactivity and observed portions of start-up and power ascension activities.

These activities constitute completion of two event follow-up samples, as defined in Inspection Procedure 71153.

b. Findings

No findings were identified.

4OA6 Meetings, Including Exit

Exit Meeting Summary

On May 19, 2015, the emergency preparedness inspectors discussed the in-office review of the preliminary scenario for the 2015 biennial exercise, submitted April 23, 2015, with Mr. R. Carey, Manager, Emergency Preparedness, and other members of the licensee staff. The licensee acknowledged the issues presented.

On June 26, 2015, the emergency preparedness inspectors presented the results of the inspection of the biennial emergency preparedness exercise conducted June 24, 2015, to Mr. M. Chisum, Site Vice President, and other members of the licensee staff. The inspectors also discussed the in-office review of changes to three emergency plan implementing procedures. The licensee acknowledged the issues presented. The licensee confirmed that any proprietary information reviewed by the inspectors had been returned or destroyed.

On July 7, 2015, the resident inspectors presented the inspection results to Mr. M. Chisum 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. Chisum, Site Vice President, Operations
M. Richey, General Manager, Plant Operations
J. Briggs, Manager, Maintenance
D. Burnett, Director, Emergency Preparedness, Entergy South
R. Carey, Manager, Emergency Preparedness
M. Chaisson, Supervisor, Radiation Protection
R. Gilmore, Director, Regulatory & Performance Improvement
R. Creel, Superintendent, Security
K. Crissman, Senior Manager, Maintenance
D. Frey, Manager, Radiation Protection
J. Clavelle, Manager, Systems and Components
M. Haydel, Manager, Design & Program Engineering
A. James, Manager, Security
J. Jarrell, Manager, Regulatory Assurance
M. Kingham, Superintendent, I & C Maintenance
B. Lanka, Director, Engineering
N. Lawless Manager, Chemistry
B. Lindsey, Senior Manager, Operations
W. McKinney, Manager, Training
S. Meiklejohn, Senior Licensing Specialist
M. Mills, Manager, Nuclear Oversight
L. Milster, Licensing Engineer, Regulatory Assurance
R. Osborne, Manager, Performance Improvement
B. Pellegrin, Senior Manager, Production
N. Petit, Supervisor, Design Engineering
D. Reider, Supervisor, Quality Assurance
M. Richey, General Manager, Plant Operations
J. Signorelli, Supervisor, Simulator
R. Simpson, Superintendent, Operator Training
J. Standridge, Project Manager, Emergency Preparedness
P. Wood, Manager, Outage

NRC Personnel

S. Janicki, Reactor Inspector

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000382-2015002-01	NCV	Failure to Identify and Secure Potential Tornado-Borne Missile Hazards (Section 1R01)
05000382-2015002-02	NCV	Failure to Follow Instructions in Painting Procedure while

Opened and Closed

Painting on Safety-Related Equipment (Section 4OA2)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures\Documents

Number	Title	Revision
ENS-DC-201	ENS Transmission Grid Monitoring	6
ENS-DC-199	Off Site Power Supply Design Requirements Nuclear Plant Interface Requirements	9
OP-901-521	Severe Weather and Flooding	313
EN-FAP-EP-010	Severe Weather Response	1

Condition Reports

CR-WF3-2014-05580 CR-WF3-2015-03450 CR-WF3-2015-02556

Section 1R04: Equipment Alignment

Procedures\Documents

Number	Title	Revision
OP-009-002	Emergency Diesel Generator	324
OP-009-008	Safety Injection System	37
OP-009-003	Emergency Feedwater System	307
OP-009-001	Containment Spray System	306
OP-002-003	Component Cooling Water System	315
OP-002-010	Reactor Auxiliary Building HVAC and Containment Purge	308
OP-002-004	Chilled Water System	313
OP-002-001	Auxiliary Component Cooling Water System	307

Condition Reports

CR-WF3-2015-1917

Section 1R05: Fire Protection

Procedures\Documents

Number	Title	Revision
RAB 3A-002	Waterford-3 S.E.S Pre-fire Strategy Elevation +46.00' RAB Vestibule	3
RAB 16-001	Waterford-3 S.E.S Pre-fire Strategy Elevation +21.00' RAB (RCA) Emergency Diesel Generator "3A"	11

Section 1R06: Flood Protection Measures

Procedures\Documents

Number	Title	Revision
PRA-W3-01-002	W3 Internal Flooding Analysis	3
MNQ 3-5	Flooding Analysis Outside Containment	4

Condition Reports

CR-WF3-2015-2319

Work Orders

WO 411542

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

Procedures\Documents

Number	Title	Revision
OP-901-110	Pressurizer Level control Malfunction	8
OP-901-202	Steam Generator Tube Leakage or High Activity	15
OP-901-212	Rapid Plant Power Reduction	7
OP-902-000	Standard Post Trip Actions	15
OP-902-007	Steam Generator Tube Rupture Recovery Procedure	16
	Simulator Exercise Guide, Scenario E-162	1

Section 1R12: Maintenance Effectiveness

Procedures\Documents

Number	Title	Revision/Date
	EGAIUSCCV4101-B Failure Report	0
	EGA-420 B Failure Report	0
	Functional Failures for the Last 3 Years - EDG	June 19, 2015
	Maintenance Rule Scoping for Emergency Diesel Generators	June 19, 2015
	System Health Report – Emergency Diesel Generators	June 25, 2015
EN-DC-205	Maintenance Rule Monitoring	5

Condition Reports

CR-WF3-2013-2946 CR-WF3-2014-2286 CR-WF3-2015-2626

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures\Documents

Number	Title	Revision
EN-WM-104	On Line Risk Assessment	9
OI-037-000	Operations' Risk Assessment Guideline	306

Work Orders

WO 52476415

Section 1R15: Operability Determinations and Functionality Assessments

Procedures\Documents

Number	Title	Revision
5817-9437	Emergency Diesel Generator Gen. Control	4
424-2316	Diesel Generator A Generator Control Interface Sh. 2	7
5817-9507	Emergency Diesel Gen. A Control Panel Wiring Diagram Sh. 5	1
EC-E89-008	Electrical Design Criteria	2

Procedures\Documents

Number	Title	Revision
1564.269G	Ebasco Specification: Electric Cables	1
EC 56685	Replace Cable 32316N-SA with 250 MCM C	0
EC 56874	Replace Cable 32366N-SB with 250 MCM Cable & Replace its Conduit 32366N-SB with 3” Conduit	0
EN-LI-101	10 CFR 50.59 Evaluation Form for OP-009-003	12

Condition Reports

CR-WF3-2015-02033 CR-WF3-2015-01884 CR-WF3-2015-01917 CR-WF3-2015-3565

Section 1R18: Plant Modifications

Procedures\Documents

Number	Title	Revision
EN-DC-141	Design Inputs	15
EC 56863	Modification of Support for DCT 5A	0
EC 56782	Temporary Stiffener for DCT Fan 5A Motor Support	0
EC-C90-014	DCP-3136: Stiffening of the Dry cooling Tower Fan Motor Supports	0
SQ-MN-237B	Dry Cooling Towers Machinery Mounting Structure	

Condition Reports

CR-WF3-5015-01128

Work Orders

WO 00408008

Section 1R19: Post-Maintenance Testing

Procedures\Documents

Number	Title	Revision
OP-903-068	Emergency Diesel Generator and Subgroup Relay Operability Verification	311
OP-903-212	Safety systems Quarterly IST Valve Tests	17

Procedures\Documents

Number	Title	Revision
OP-903-121	Surveillance Procedure – Safety Systems Quarterly IST Valve Tests	18
EC-58121	Engineering Input to CR-WF3-2015-03566 ST-B TL Relay and 62S Relay Functionality	0
EC-49854	Modify EFW 223A Valve Booster Relay Located at +46 El in RAB West Wing Area to Address Abnormal Venting due to Vibration Apply this Installation to EFW-223B, EFW-224A & EFW-224B	0
OP-903-030	Safety Injection Pump Operability Verification	21
OP-903-119	Secondary Auxiliaries Quarterly IST Valve Tests	21
OP-100-014	Technical Specification and Technical Requirements Compliance	329

Condition Reports

CR-WF3-2015-02148 CR-WF3-2015-02734 CR-WF3-2015-03566

Work Orders

WO 52616374	WO 00348933	WO-00415592 01	WO-00415592 02
WO-00415592 03	WO-00415592 04	WO-00415592 05	

Section 1R22: Surveillance Testing

Procedures\Documents

Number	Title	Revision/Date
ME-003-306	G.E. Overcurrent Relay Model 12IAC57A	8
ME-003-308	G.E. Overcurrent Relay Model 12IAC66M	301
OP-903-116	Train B Integrated Emergency Diesel Generator/Engineering Safety Features Test	029
OP-903-068	Emergency Diesel Generator and Subgroup Relay Operability Verification	312
Safety Guide 9	Selection of Diesel Generator Set Capacity for Standby Power Supplies	March 10, 1971
SEP-WF3-IST-1	WF3 IST Bases Document	2
OP-903-035	Containment Spray Pump Operability Check	22

Procedures\Documents

Number	Title	Revision/Date
EC-47119	Upgrade to Regulatory Guide 1.9 Revision 4 for Emergency Diesel Generator	0
EN-DC-161	Control of Combustibles	12

Condition Reports

CR-WF3-2015-03265 CR-WF3-2015-02902 CR-WF3-2015-02706

Work Orders

WO 52494642

Section 1EP4: Emergency Action Level and Emergency Plan Changes

No additional documents were reviewed.

Section 1EP6: Drill Evaluation

Procedures\Documents

Number	Title	Revision
	EP Training Drill Scenario	0

Section 1EP7: Exercise Evaluation – Hostile Action Event (71114.07)

Procedures\Documents

Number	Title	Revision/Date
	Waterford3 Steam Electric Station Emergency Plan	46
EP-001-001	Recognition and Classification of Emergency Conditions, Revision 30	June 18, 2012
EP-001-010	Unusual Event, Revision 303	January 26, 2011
EP-001-020	Alert	308
EP-011-030	Site Area Emergency, Revision 30	June 7, 2013
EP-001-040	General Emergency	308

EP-002-010	Notifications and Communications	311
EP-002-052	Protective Action Guidelines, Revision 24	December 23, 2014
EP-002-071	Site Protective Measures, Revision 302	January 26, 2011
EP-002-100	Technical Support Center Activation, Operation, and Deactivation	42
EP-002-101	Operations Support Center Activation, Operation, and Deactivation, Revision 303	February 10, 2011
EP-002-102	Emergency Operations Facility Activation, Operation, and Deactivation, Revision 305	September 15, 2014
OP-901-523	Security Events, June 15, 2015	15
OP-901-525	Airborne Security Threat, June 18, 2015	13

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CR-WF3-2013-03661	CR-WF3-2013-03652	CR-WF3-2013-03643	CR-WF3-2013-05211
CR-WF3-2013-05895	CR-WF3-2013-05896	CR-WF3-2013-05900	CR-WF3-2013-05904
CR-WF3-2014-03525	CR-WF3-2014-04590	CR-WF3-2015-02533	CR-WF3-2015-04204
CR-WF3-2015-04205	CR-WF3-2015-04206	CR-WF3-2015-04209	CR-WF3-2015-04210
CR-WF3-2015-04212	CR-WF3-2015-04213	CR-WF3-2015-04214	CR-WF3-2015-04223

1EP8 Exercise Evaluation – Scenario Review (71114.08)

No additional documents were reviewed

Section 4OA1: Performance Indicator Verification

Procedures\Documents

Number	Title	Revision/Date
EN-LI-114	Performance Indicator Process	6
W3-DBD-013	Containment Spray System Design Bases	301
NEI 99-02	Regulatory Assessment Performance Indicator Guideline	7
PSA-WF3-01-SC	WF3 PSA At-Power Level 1 Success Criteria Analysis	0
W3F1-2014-0043	NRC Performance Indicator (PI) Data – 1st Quarter 2014	0
W3F1-2014-0048	NRC Performance Indicator (PI) Data – 2nd Quarter 2014	0
W3F1-2014-0068	NRC Performance Indicator (PI) Data – 3rd Quarter 2014	0
W3F1-2015-0008	NRC Performance Indicator (PI) Data – 4th Quarter 2014	0
W3F1-2015-0029	NRC Performance Indicator (PI) Data – 1st Quarter 2015	0

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CR-WF3-2015-1240

Section 4OA2: Problem Identification and Resolution

Procedures\Documents

Number	Title	Revision/Date
EN-LI-118	Cause Evaluation Process	21
EP-002-100	Technical Support Center Activation, Operation and Deactivation	42
MNQ(9)-17	Tornado Multiple Missile Protection of Cooling Towers	3
EC 56352	Provide Operability Input as Contingency for Leaking DCT Tube Bundle Isolation Valves	March 19, 2015
OP-100-014	Technical Specification and Technical Requirements Compliance	328
EC 56250	Provide Operability Input for Potential Dry Cooling Tower Bundle Isolation Valve Leakage	1

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CR-WF3-2015-00649	CR-WF3-2014-2420	CR-WF3-2014-2854	CR-WF3-2014-2892
CR-WF3-2014-3067	CR-WF3-2014-3156	CR-WF3-2014-3261	CR-WF3-2014-4291
CR-WF3-2014-4456	CR-WF3-2014-4648	CR-WF3-2014-4940	CR-WF3-2014-5876
CR-WF3-2014-5997	CR-WF3-2015-1521	CR-WF3-2015-1845	CR-WF3-2015-1846
CR-WF3-2015-1862	CR-WF3-2015-1863	CR-WF3-2015-2052	CR-WF3-2015-2065
CR-WF3-2015-2372	CR-WF3-2015-2911	CR-WF3-2015-3673	CR-WF3-2015-3689
CR-WF3-2015-3742	CR-WF3-2015-4126	CR-WF3-2015-4160	CR-WF3-2015-0828

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

Procedures\Documents

Number	Title	Revision/Date
OP-010-003	Plant Start-up	335
OP-902-000	Standard Post Trip Actions	15
OP-100-012	Post Trip Review	304
W3-DBD-003	Emergency Feedwater System Design Bases	301
	Control Room Turnover Sheet and Checklist	June 4, 2015
EN-LI-118-08	Failure Modes Analysis	3
OP-010-005	Plant Shutdown	326

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CR-WF3-2015-3655	CR-WF3-2015-3566	CR-WF3-2015-3563	CR-WF3-2015-3565