UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
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ARLINGTON, TEXAS 76011-4511

November 14, 2012

Donna Jacobs, Vice President, Operations
Entergy Operations, Inc.
Waterford Steam Electric Station, Unit 3
17265 River Road
Killona, LA 70057-0751

SUBJECT: WATERFORD STEAM ELECTRIC STATION, UNIT 3 – NRC INTEGRATED INSPECTION REPORT 05000382/2012004

Dear Ms. Jacobs:

On September 30, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Waterford Steam Electric Station, Unit 3 facility. The enclosed inspection report documents the inspection results which were discussed on October 11, 2012, with you and other members of your staff.

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

Four NRC-identified findings of very low safety significance (Green) were identified during this inspection.

All of these findings were determined to involve violations of NRC requirements. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest these non-cited violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region IV; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Waterford Steam Electric Station, Unit 3 facility.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region IV; and the NRC Resident Inspector at Waterford Steam Electric Station, Unit 3 facility.

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

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

Sincerely,

/RA/

Donald B. Allen
Chief, Project Branch E
Division of Reactor Projects

Docket Nos.: 50-382
License Nos: NPF-38

Enclosure: Inspection Report 05000382/2012004
w/Attachment: Supplemental Information

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

SRI:DRP/E	RI:DRP/E	SPE:DRP/E	C:DRS/EB1	C:DRS/EB2	C:DRS/OB
MDavis	DOverland	RAzua	TFarnholtz	GMiller	VGaddy
/RA via T/	***/RA via T/***	***/RA/***	***/RA/***	***/RA/***	***/RA/***
11/14/12	11/14/12	11/14/12	11/7/12	11/13/12	11/13/12
C:DRS/PSB1	C:DRS/PSB2	C:DRS/TSB	BC:DRP/E		
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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket:	05000382
License:	NPF-38
Report:	05000382/2012004
Licensee:	Entergy Operations, Inc.
Facility:	Waterford Steam Electric Station, Unit 3
Location:	17265 River Road Killona, LA 70057
Dates:	July 1 through September 30, 2012
Inspectors:	M. Davis, Senior Resident Inspector D. Overland, Resident Inspector R. Azua, Senior Project Engineer W. Sifre, Senior Reactor Inspector P. Elkmann, Senior Emergency Preparedness Inspector J. Laughlin, Emergency Preparedness Inspector, NSIR C. Speer, Reactor Inspector R. Cureton, Resident Inspector
Approved By:	Donald B. Allen, Chief, Project Branch E Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000382/2012004; 07/01/2012 – 09/30/2012; Waterford Steam Electric Station, Unit 3, Integrated Resident and Regional Report; Licensed Operator Performance, Maintenance Effectiveness, and Maintenance Risk Assessments.

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

A. NRC-Identified Findings and Self-Revealing Findings

Cornerstone: Initiating Events

- Green. The inspectors identified a non-cited violation of 10 CFR 50.65(a)(4) because the licensee did not assess and manage the increase in online risk involved with maintenance activities that lifted heavy loads over safety related equipment. Specifically, the licensee did not assess and manage the integrated plant online risk prior to performing heavy load lifts in the train B dry cooling tower fan area when installing a temporary work platform to support the steam generator replacement project. As a result, the licensee did not implement additional risk management actions as required by their procedure EN-WM-104, "OnLine Risk Assessment." The licensee entered this condition into the corrective action program as CR-WF3-2012-4195 and CR-WF3-2012-4489. The immediate corrective action taken to restore compliance was to re-evaluate and change the integrated risk classification from a normal risk to a high-risk level and implement the required risk management actions.

  The failure to adequately assess and manage overall plant risk prior to performing maintenance activities that lifted heavy loads over the train B dry cooling tower fan area was a performance deficiency. The performance deficiency was more than minor because it was associated with the human performance attribute of the Initiating Events cornerstone and affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the licensee's failure to identify non-standard lifts over safety related equipment as high risk prevented the licensee from taking additional risk management actions to limit the likelihood of an event that would upset plant stability. The inspectors used NRC Inspection Manual 0609, Attachment 4, "Initial Characterization of Findings," to evaluate this issue. The initial screening directed the inspectors to use Appendix K "Maintenance Risk Assessment and Risk Management Significance Determination Process" to

determine the significance of the finding. In accordance with NRC Inspection Manual Chapter 0609, Appendix K, a senior reactor analyst determined that the finding was very low safety significance (Green) because the bounding risk deficit was approximately 1E-7/year. The inspectors concluded that the finding reflected current licensee performance and involved a cross-cutting aspect in the decision making component of the human performance area because the licensee did not make safety significant or risk significant decisions using a systematic process to ensure safety was maintained [H.1(a)] (Section 1R13).

Cornerstone: Mitigating Systems

- Green. The inspectors identified a non-cited violation of Waterford Steam Electric Station, Unit 3, Technical Specification 6.8.1.a because the licensee did not establish procedural controls to ensure that the assigned minimum staff of licensed operators could perform immediate and time critical operator actions associated with a security or fire event. Specifically, the licensee did not establish procedural guidance to restrict licensed operators from leaving the protected area. As a result, the licensee could not ensure that operators would respond in a timely manner to perform immediate and time critical operator actions required by a fire or security event. The licensee entered this issue into their corrective action program as CR-WF3-2012-3815. The immediate corrective actions taken to restore compliance included the issuing of a standing instruction to instruct the assigned minimum staff of licensed operators to remain in the protected area unless officially relieved of their duties.

  The failure to establish procedural controls to ensure that licensed operators could perform immediate and time critical steps associated with security and fire events was a performance deficiency. The performance deficiency was more than minor because it was associated with the procedure quality attribute of the Mitigating System Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee would have been challenged to complete immediate and time critical steps with licensed operators being outside the protected area. The inspectors used NRC Inspection Manual 0609, Attachment 4, “Initial Characterization of Findings,” to evaluate this issue. The finding required a detailed analysis because it could be risk significant for external events. Therefore, the senior reactor analyst performed a bounding detailed risk evaluation. The analyst determined that the finding was of very low safety significance (Green) because the bounding change to the core damage frequency was less than 4.0 E-7/year. The risk important sequences included control room fires that required a control room evacuation. The short duration of the operator being outside the protected area reduced the risk significance. The inspectors concluded that the finding reflected current licensee performance and involved a cross-cutting aspect in the operating experience component of the problem identification and resolution area in that the licensee did not implement and institutionalize operating experience through changes to station processes and procedures [P.2(b)] (Section 1R11).

- Green. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI because the licensee did not promptly identify and correct conditions adverse to quality related to the header A auxiliary component cooling water heat exchanger outlet temperature control valve ACC-126A. Specifically, the licensee did not promptly identify and correct degraded conditions associated with the valve's shaft bushings, a pneumatic transducer that controls the valve actuator, and its soft seat. As a result, the licensee declared the valve inoperable on several occasions. The licensee entered this issue into their corrective action program as CR-WF3-2012-03280. The immediate corrective actions taken to restore compliance included the replacement of all the degraded components.

  The failure to promptly identify and correct multiple degraded conditions associated with the auxiliary component cooling water heat exchanger outlet temperature control valve ACC-126A was a performance deficiency. The performance deficiency was more than minor because it was associated with the equipment performance attribute of the Mitigating System Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the degraded components challenged the closed safety function of the valve and its ability to maintain an adequate water inventory for the wet cooling tower following a loss of coolant accident. The inspector used NRC Inspection Manual 0609, Attachment 4, "Initial Characterization of Findings," to evaluate this issue. The finding required a detailed analysis because it involved a potential loss of one train of safety related equipment for longer than the technical specification allowed outage time. Therefore, the senior reactor analyst performed a bounding detailed risk evaluation. The analyst determined that the finding was of very low safety significance (Green) because the bounding change to the core damage frequency was less than 4.2E-7 per year. The inspectors concluded that the finding reflected current licensee performance and involved a cross-cutting aspect in the corrective action program component of the problem identification and resolution area in that the licensee did not thoroughly evaluate problems such that the resolutions address causes and extent of conditions, as necessary [P.1(c)] (Section 1R12).

- Green. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI because the licensee did not promptly identify and correct a condition adverse to quality associated with the B emergency feedwater backup control valve EFW-223B. Specifically, the licensee did not promptly identify and correct internal leakage from tears in the EFW-223B actuator diaphragm. As a result, these internal tears in the diaphragm caused excessive leakage that affected two nitrogen accumulators used to operate EFW-223B and other safety related valves. The licensee entered this issue into their corrective action program as CR-WF3-2012-0860. The immediate corrective actions taken to restore compliance included the replacement of the diaphragm and to determine the extent of condition for other air-operated valves with the same type, make, and

model diaphragm. The planned corrective action included the revision of the air operated valve program post maintenance tests to identify similar problems.

The failure to promptly identify and correct tears in the internal actuator diaphragm of the B emergency feedwater backup control valve EFW-223B was a performance deficiency. The performance deficiency was more than minor because it was associated with the equipment performance attribute of the Mitigating System Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the internal leakage of EFW-223B affected two safety-related nitrogen accumulators and their ability to provide nitrogen gas to other connected safety related valves following a loss of offsite power event. The inspector used the NRC Inspection Manual 0609, Attachment 4, "Initial Characterization of Findings," to evaluate this issue. The finding required a detailed analysis because it involved a potential loss of one train of safety related equipment for longer than the technical specification allowed outage time. Therefore, a senior reactor analyst performed a bounding detailed risk evaluation. The analyst determined that the finding is of very low safety significance (Green) because the bounding change to the core damage frequency is less than 1E-9 per year. The inspectors concluded that the finding reflected current licensee performance and involved a cross-cutting aspect in the corrective action program component of the problem identification and resolution area in that the licensee did not thoroughly evaluate problems such that the resolutions address causes and extent of conditions, as necessary [P.1(c)] (Section 1R12).

B. Licensee-Identified Violations

None

REPORT DETAILS

Summary of Plant Status

Waterford Steam Electric Station, Unit 3, began the inspection period at approximately 100 percent power. On August 28, 2012, operators commenced a reactor shutdown due to the anticipated arrival of Hurricane Isaac. On September 2, operators started to increase power to 100 percent. On September 5, the unit reached 100 percent power and operated at approximately 100 percent power for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

1. Readiness to Cope with External Flooding

a. Inspection Scope

On August 29, 2012, the inspectors reviewed dry cooling tower areas A and B. The inspectors evaluated the design, material condition, and procedures for coping with the design basis probable maximum flood. The evaluation included a review to check for deviations from the descriptions provided in the updated final safety analysis report for features intended to mitigate the potential for flooding from external factors. As part of this evaluation, the inspectors checked for obstructions that could prevent draining, checked that the roofs did not contain obvious loose items that could clog drains in the event of heavy precipitation, and determined that barriers required to mitigate the flood were in place and operable. Additionally, the inspectors performed an inspection of the PA to identify any modification to the site that would inhibit site drainage during a probable maximum precipitation event or allow water ingress past a barrier. The inspectors also reviewed the abnormal operating procedure for mitigating the design basis flood to ensure it could be implemented as written. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one external flooding sample as defined in Inspection Procedure 71111.01-05.

b. Findings

No findings were identified.

.2 Readiness for Impending Adverse Weather Conditions

a. Inspection Scope

Since Hurricane Isaac was forecasted in the vicinity of the facility on August 27, 2012, the inspectors reviewed the plant personnel's overall preparations and protection for the

expected weather conditions. On August 28, 2012, the inspectors walked down the emergency diesel generators and portions of the dry cooling towers area because of their safety-related functions could be affected, or required, as a result of high winds, tornado-generated missiles, or the loss of offsite power. The inspectors evaluated the plant staff's preparations against the site's procedures and determined that the staff's actions were adequate. During the inspection, the inspectors focused on plant-specific design features and the licensee's procedures used to respond to specified adverse weather conditions. The inspectors also toured the plant grounds to look for any loose debris that could become missiles during a tornado. The inspectors evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant. Additionally, the inspectors reviewed the updated final safety analysis report and performance requirements for the systems selected for inspection, and verified that operator actions were appropriate as specified by plant-specific procedures. The inspectors also reviewed a sample of corrective action program items to verify that the licensee-identified adverse weather issues at an appropriate threshold and dispositioned them through the corrective action program in accordance with station corrective action procedures. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one readiness for impending adverse weather condition sample as defined in Inspection Procedure 71111.01-05.

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial Walkdown

a. Inspection Scope

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

- On July 5, 2012, auxiliary component cooling water train B while train A was inoperable for emergent maintenance
- On July 18, 2012, control room emergency filtration train A while train B was inoperable for emergent maintenance
- On August 23, 2012, emergency feedwater train A while train B was inoperable for scheduled maintenance

The inspectors selected these systems based on their risk significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could affect the function of the system, and, therefore,

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

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

b. Findings

No findings were identified.

.2 Complete Walkdown

a. Inspection Scope

On September 17, 2012, the inspectors performed a complete system alignment inspection of the component cooling water system to verify the functional capability of the system. The inspectors selected this system because it was considered both safety significant and risk significant in the licensee's probabilistic risk assessment. The inspectors inspected the system to review mechanical and electrical equipment line ups, electrical power availability, system pressure and temperature indications, as appropriate, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. The inspectors reviewed a sample of past and outstanding work orders to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the corrective action program database to ensure that system equipment-alignment problems were being identified and appropriately resolved. Specific documents reviewed during this inspection are listed in the attachment.

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

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

Quarterly Fire Inspection Tours

a. Inspection Scope

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

- On July 5, 2012, reactor auxiliary building, fire area 18, component cooling water heat exchanger A room
- On July 18, 2012, reactor auxiliary building, fire area 1, fire zone 1A, control room heating and ventilation rooms
- On July 19, 2012, fire water pump house
- On August 30, 2012, reactor auxiliary building, fire area roof E, main steam isolation valve B

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

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

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors reviewed the updated final safety analysis report, the flooding analysis, and plant procedures to assess susceptibilities involving internal flooding; reviewed the corrective action program to determine if licensee personnel identified and corrected flooding problems; inspected underground bunkers/manholes to verify the adequacy of sump pumps, level alarm circuits, cable splices subject to submergence, and drainage for bunkers/manholes; and verified that operator actions for coping with flooding can reasonably achieve the desired outcomes. The inspectors also inspected the areas listed below to verify the adequacy of equipment seals located below the flood line, floor and wall penetration seals, watertight door seals, common drain lines and sumps, sump pumps, level alarms, and control circuits, and temporary or removable flood barriers. Specific documents reviewed during this inspection are listed in the attachment.

- On July 31, 2012, reactor auxiliary building and fuel handling building flood control doors
- On August 30, 2012, shutdown cooling heat exchanger rooms

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

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

The inspectors reviewed licensee programs, verified performance against industry standards, and reviewed critical operating parameters and maintenance records for the component cooling water heat exchangers. The inspectors verified that performance tests were satisfactorily conducted for heat exchangers/heat sinks and reviewed for problems or errors; the licensee utilized the periodic maintenance method outlined in EPRI Report NP 7552, “Heat Exchanger Performance Monitoring Guidelines”; the licensee properly utilized biofouling controls; the licensee’s heat exchanger inspections adequately assessed the state of cleanliness of their tubes; and the heat exchanger was correctly categorized under 10 CFR 50.65, “Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants.” Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one heat sink inspection sample as defined in Inspection Procedure 71111.07-05.

b. Findings

No findings were identified.

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

.1 Quarterly Review of Licensed Operator Requalification Program

a. Inspection Scope

On July 10, 2012, the inspectors observed a crew of licensed operators in the plant's simulator during requalification testing. The inspectors assessed the following areas:

- Licensed operator performance
- The ability of the licensee to administer the evaluations
- The modeling and performance of the control room simulator
- The quality of post-scenario critiques

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

b. Findings

No findings were identified.

.2 Quarterly Observation of Licensed Operator Performance

a. Inspection Scope

On August 28, 2012, the inspectors observed the performance of the on-shift licensed operators in the plant's main control room. At the time of the observation, the plant was in a period of heightened activity due to a plant down power. The inspectors assessed the operators' adherence to plant procedures, including the conduct of operations procedure and other reactivity management policies and procedures. Additionally, the inspectors observed the performance of the on-shift licensed operators on a number of occasions.

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

b. Findings

Introduction. The inspectors identified a Green non-cited violation of Waterford Steam Electric Station, Unit 3, Technical Specification 6.8.1.a because the licensee did not

establish procedural controls to ensure that licensed operators could perform time critical steps associated with security and fire events. Specifically, the licensee did not establish procedural guidance to restrict licensed operators assigned to the minimum control room staffing from leaving the Protected Area (PA).

Description. On August 1, 2012 with the plant in operational Mode 1, two inspectors were performing a main control board walkdown in the control room. The inspectors noted that there was only one reactor operator in the control room and questioned the control room supervisor about the required minimum shift composition; specifically, the location of the second reactor operator since the licensee's minimum shift composition for the main control room staff in an operational mode was as follows: one Shift Manager (SM), one Senior Reactor Operator (SRO), two Reactor Operators (RO), and one Shift Technical Advisor (STA). The control room supervisor stated that the second reactor operator was at medical in the general support building. The inspectors noted that the reactor operator was outside the PA at an administrative building onsite and could be challenged returning through security if needed to perform immediate operator actions.

The inspectors asked the licensee if there were any time critical operator actions contained in operating procedures OP-901-502, "Evacuation of Control Room and Subsequent Plant Shutdown", and OP-901-523, "Security Events", respectively. To address the inspectors' question, the licensee initiated a condition report and conducted a review of these procedures to determine if any operator actions were time sensitive. The licensee discovered that OP-901-502 and OP-901-523 required that licensed operators complete time critical steps within a specific period under the assumption that the operators are present in the control room at the start of the event or nearby. The licensee determined that OP-901-502 contained immediate operator actions for all five required main control room licensed operators with additional time critical steps that needed to be performed within 10 minutes for the reactor operators. The inspectors noted that it takes at least half that time coming from the administrative building outside the PA and through security without any complications. A review of the licensee's conduct of operations procedure EN-OP-115 revealed that other sites within Entergy contain procedural controls that do not allow operators outside the PA unless they have been properly relieved of their duties. This procedure included references to similar NRC findings at other Entergy sites. The inspectors concluded that the licensee did not establish similar controls nor implement and institutionalize operating experience using procedure EN-OP-115, Conduct of Operations.

The licensee entered this issue into their corrective action program as CR-WF3-2012-3815. The immediate corrective actions taken to restore compliance included the issuing of a standing instruction to instruct the assigned minimum staff of licensed operators to remain in the PA unless officially relieved of their duties. The planned corrective action included the revision of the conduct of operations procedure, which would prohibit the minimum shift from leaving the PA.

Analysis. The failure to establish procedural controls to ensure that licensed operators would perform immediate and time critical operator actions associated with security and fire events was a performance deficiency. The inspectors determined that this deficiency was reasonably within the licensee's ability to foresee and correct. The

performance deficiency was more than minor because it was associated with the procedure quality attribute of the Mitigating System Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee would have been challenged to complete immediate and time critical operator actions due to licensed operators being allowed outside the PA. The inspectors used NRC Inspection Manual 0609, Attachment 4, "Initial Characterization of Findings," to evaluate this issue.

The finding required a detailed analysis because it could be risk significant for external events. Therefore, the senior reactor analyst performed a bounding detailed risk evaluation. The analyst used the Waterford-3 "Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities," dated July 28, 1995 to estimate the change to the core damage frequency (delta-CDF) associated with this finding. The analyst assumed, on average, that one operator could miss up to 2.0 hours per week for outside appointments. The probability of an operator being unavailable to respond to operational needs was, therefore, 2.0 hour/168 hours/week = 1.2E-2. In addition, the analyst conservatively assumed that the resultant shortage of operations personnel made transferring equipment control to the remote shutdown panel (during a fire induced control room evacuation) impossible. Control room evacuations for other causes, that did not result in significant equipment damage, were not considered in this assessment. From the IPEEE, the analyst determined that the frequency for a control room fire was 9.7E-3/year. The probability that the fire would grow large enough to visually obscure the panels was 3.4E-3. The bounding delta-CDF was therefore:

Delta-CDF = 9.7E-3 * 3.4E-3 * 1.2E-2 = 4.0E-7/year

The bounding change to the core damage frequency was less than 4.0 E-7/year. The risk important sequences included control room fires that required a control room evacuation. The short duration of licensed operator's being outside the protected area reduced the risk significance.

Large Early Release Frequency: To address the contribution to conditional large early release frequency, the analyst used NRC Inspection Manual Chapter 0609, Appendix H, "Containment Integrity Significance Determination Process," dated May 6, 2004. Since the finding did not contribute directly to a steam generator tube rupture or an intersystem loss of coolant accident, the condition was not risk significant to the large early release frequency. Therefore, the analyst determined that the finding was of very low safety significance (Green). The inspectors concluded that the finding reflected current licensee performance and involved a cross-cutting aspect in the operating experience component of the problem identification and resolution area in that the licensee did not implement and institutionalize operating experience through changes to station processes and procedures [P.2(b)].

Enforcement. Waterford Steam Electric Station, Unit 3, Technical Specifications 6.8.1.a requires, in part, that written procedures shall be established, implemented, and maintained for activities described in Appendix A of the Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Specifically, Section 1 of Regulatory

Guide 1.33, Appendix A recommends administrative procedures for maintenance of minimum shift complement and call-in of personnel. In addition, Section 6 of Regulatory Guide 1.33, Appendix A recommends, in part, procedures for combating emergencies and other significant events. Operating procedures OP-901-502 and OP-901-523 required that licensed operators complete time critical steps in response to security or fire events. Contrary to the above, as of August 6, 2012, the licensee did not establish procedural controls to ensure that licensed operators could perform immediate and time critical operator actions associated with security and fire events. Specifically, the licensee did not establish procedural guidance to restrict licensed operators assigned to the minimum control room shift from leaving the PA. As a result, the licensee could not ensure that licensed operators would respond in a timely manner to perform immediate and time critical operator actions required by a fire or security event. The licensee entered this issue into their corrective action program as CR-WF3-2012-3815. The immediate corrective actions taken to restore compliance included the issuing of a standing instruction to instruct the assigned minimum staff of licensed operators to remain in the PA unless officially relieved of their duties. Because this violation was of very low safety significance and the licensee entered the issue into their corrective action program, this violation was treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy (NCV 05000382/2012004-01, "Failure to establish procedural controls to ensure that licensed operators could perform immediate and time critical operator actions associated with security and fire events.")

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

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

- On July 9, 2012, auxiliary component cooling water heat exchanger outlet temperature control valve ACC-126A
- On July 23, 2012, nitrogen accumulator numbers 8 and 10

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

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

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

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

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

b. Findings

.1 Failure to identify and correct degraded conditions associated with the auxiliary component cooling water heat exchanger outlet temperature control valve

Introduction. The inspectors identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI because the licensee did not promptly identify and correct conditions adverse to quality related to the header A auxiliary component cooling water heat exchanger outlet temperature control valve ACC-126A. Specifically, the licensee did not promptly identify and correct degraded conditions associated with the valve's shaft bushings, pneumatic transducers that control the valve actuator, and its soft seat.

Description. On June 1, 2012, the header A auxiliary component cooling water heat exchanger outlet temperature control valve ACC-126A did not respond as expected when operators attempted to close the valve using its electro-pneumatic transducer operator. Specifically, operators reduced the output signal on the transducer in order to fully seat and close the valve but the valve did not close fully because measurements revealed leakage past the valve's seat at approximately 1400 to 2000 gpm. The inspectors noted that this leakage was three to four times greater than the valve's established leak rate criteria of 500 gpm. The licensee declared the valve inoperable and initiated a work request to resolve the problem. The licensee performed troubleshooting and determined that the pneumatic transducer drifted and locked up, which prevented the valve from fully closing. The licensee returned the valve to service and replaced the pneumatic transducer with a previous transducer that had known

calibration issues. Subsequently, on July 5, 2012 and July 9, 2012, the licensee declared ACC-126A inoperable and entered an unplanned limiting condition of operation because the valve did not fully seat and close as expected. At this time, the licensee initiated a root cause evaluation to determine the cause of the repeat failures of the valve to fully seat and close as designed such that it would perform its safety function. The inspectors noted that leakage through ACC-126A would challenge the valve's ability to maintain the wet cooling tower inventory following a loss of coolant accident.

The inspectors performed a review of the event timeline, root cause evaluation, corresponding tests, and maintenance history for valve ACC-126A. A review of the valve's history identified other instances of excessive leakage past the valve's seat. Specifically, as early as July of 2009 the licensee experienced trouble with maintaining the A auxiliary component cooling water high point pressure on a number of occasions, indicating that ACC-126A was leaking by its closed seat. The licensee attributed the problem to the valve's t-ring (soft seat) but did not correct the cause of the accelerated soft seat degradation and the same problem occurred later in February of 2011. A review of the condition report history indicated that the licensee attributed both occurrences of the soft seat damage to cavitation erosion. However, the corrective actions were closed to a work order to replace the valve and did not provide interim actions to prevent future failures. The inspectors noted that the licensee postponed the work order to replace the valve until 2013. Since the February of 2011 replacement of the soft seat, the licensee experienced additional problems with the valve and its ability to fully seat and close. The additional problems included transducer quality issues and failures, packing leaks, and misalignment issues. The inspectors noted that after recent subsequent failures on July 5, 2012 and July 9, 2012, the licensee performed an internal valve inspection and a more rigorous failure analysis. The licensee discovered degraded components that included a damaged soft seat, worn shaft bushings, and a worn shaft. The inspectors concluded that the licensee missed opportunities to identify, thoroughly evaluate, and correct these degraded conditions associated with ACC-126A.

The licensee entered this issue into their corrective action program as CR-WF3-2012-03280. The immediate corrective actions taken to restore compliance included the replacement of all the degraded components. The planned corrective actions included the development and implementation of a preventative maintenance strategy to inspect and replace valve internals.

Analysis. The failure to promptly identify and correct multiple degraded conditions associated with the auxiliary component cooling water heat exchanger outlet temperature control valve ACC-126A was a performance deficiency. The inspectors determined that this deficiency was reasonably within the licensee's ability to foresee and correct. The performance deficiency was more than minor because it was associated with the equipment performance attribute of the Mitigating System Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the degraded components challenged the closed safety function of the valve and its ability to maintain an adequate water inventory for the wet cooling tower following a loss of coolant accident.

The inspectors used NRC Inspection Manual 0609, Attachment 4, "Initial Characterization of Findings," to evaluate this issue. The finding required a detailed analysis because it involved a potential loss of one train of safety related equipment for longer than the technical specification allowed outage time. A Region IV senior reactor analyst performed a bounding detailed risk evaluation for this issue. The analyst performed simplified calculations to determine the change to the core damage frequency (delta-CDF) for the valve's failure to close. The analyst used the Waterford 3 Standardized Plant Analysis Risk (SPAR) model, Revision 8.16, with a truncation limit of 1 E-11. The applicable basic event was EFW-XHE-XIVI-CSPMKUP. This event included operator actions to refill the condensate storage pool. While this action could include refilling the condensate storage pool from multiple different sources, the analyst assumed that only the opposite train wet cooling tower was available. The analyst increased the failure probability one order of magnitude from 1 E-3 to 1 E-2, to reflect conservatively higher failure likelihood. The B wet cooling tower was still available for this analysis and there was a manual valve that could have been closed to help isolate the ACC-126A line. The analyst conservatively assumed an exposure period of an entire year. The corresponding change to the core damage frequency (delta-CDF) was Delta-CDF = 4.2E-7. Since the result was extremely conservative, the analyst concluded that the actual delta-CDF was much less than 1 E-7/year. The dominant core damage sequences included station blackout events where operators failed to align the backup water source to the condensate storage pool. The analyst noted that, during a station blackout, neither auxiliary component cooling water pump would be available to assist with water transfer to the condensate storage pool. This tended to make the finding less risk significant because during station blackout events the valve's failure had no actual affect on CDF. The fact that longer term (versus shorter term) station blackout events dominated risk helped to reduce the significance of the issue.

Large Early Release Frequency: To address the contribution to conditional large early release frequency, the analyst used NRC Inspection Manual Chapter 0609, Appendix H, "Containment Integrity Significance Determination Process," dated May 6, 2004. Since the finding did not contribute directly to a steam generator tube rupture or an intersystem loss of coolant accident, the condition was not risk significant to the large early release frequency. The inspectors concluded that the finding reflected current licensee performance and involved a cross-cutting aspect in the corrective action program component of the problem identification and resolution area in that the licensee did not thoroughly evaluate problems such that the resolutions address causes and extent of conditions [P.1(c)].

Enforcement. Title 10 of CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and non-conformances are promptly identified and corrected. Contrary to the above, as of July 27, 2012, the licensee did not establish measures that assured the conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and non-conformances associated with the header A auxiliary component cooling water heat exchanger outlet temperature control valve ACC-126A were promptly identified and corrected. Specifically, the licensee did not promptly

identify and correct degraded conditions associated with the valve's shaft and its bushings, a pneumatic transducer that controls the valve actuator, and its soft seat. As a result, the licensee declared the valve inoperable on several occasions. The licensee entered this condition into their corrective action program as CR-WF3-2012-3280. The immediate corrective actions taken to restore compliance included the replacement of all the degraded components. The planned corrective actions included the development and implementation of a preventative maintenance strategy to inspect and replace valve internals. Because this violation was of very low safety significance and the licensee entered the issue into their corrective action program, this violation was treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy (NCV 05000382/2012004-02, "Failure to identify and correct degraded conditions associated with the auxiliary component cooling water heat exchanger outlet temperature control valve.")

.2 Failure to identify and correct a torn diaphragm of a safety-related air operated valve associated with the emergency feedwater system

Introduction. The inspectors identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI because the licensee did not promptly identify and correct a condition adverse to quality associated with the B emergency feedwater backup control valve EFW-223B. Specifically, the licensee did not promptly identify and correct internal leakage from tears in the EFW-223B actuator diaphragm. As a result, these internal tears in the diaphragm caused excessive leakage that affected two nitrogen accumulators used to operate EFW-223B and other safety related valves.

Description. On February 16, 2012, nitrogen accumulators numbers 8 and 10 failed a periodic surveillance leakage test. The as-found leak rate of approximately 89 psid/hr exceeded the acceptance criteria of ≤ 55 psid/hr. The licensee performed troubleshooting to determine which component connected to the accumulator contributed to the unexpected high leak rate. The licensee isolated the B emergency feedwater backup control valve EFW-223B and the leakage substantially reduced to approximately 16 psid/hr. The licensee immediately declared the nitrogen accumulators and other connected safety related valves inoperable and initiated a condition report to evaluate the cause of this condition. The licensee's casual analysis revealed that the EFW-223B actuator had several tears in the diaphragm with the primary tear being as large as two inches. The licensee determined the cause of the tears was most likely due to a manufacturing defect.

The inspectors reviewed the apparent cause evaluation, previous surveillance test and the maintenance history of the EFW-223B backup control valve. The inspectors noted that the licensee replaced the actuator diaphragm for the EFW-223B valve on March 14, 2011. Following the replacement, the licensee performed a scheduled surveillance test on September 12, 2011 and the EFW-223B closed stroke time exceeded its In-Service Testing (IST) maximum limiting stroke time of 5.8 seconds. The first closed stoke was 7.5 seconds and the second stroke time was 6.7 seconds. However, the inspectors noted that both of the times were within the maximum allowed stroke time of 7.8 seconds. The licensee analyzed the stroke times and performed troubleshooting to verify that these new stroke times represented an acceptable valve operation. The

licensee identified that the booster set point for the booster relay was a quarter turn out of calibration and determined that this was the most likely cause of the increased closed stroke times of the EFW-223B valve. However, the inspectors noted that the licensee made that determination based on another valve's booster set point. The inspectors questioned the validity of using another valve's set point when each valve maintains their own calibration data. The inspectors also noted that the licensee did not perform an internal inspection of the valve due to the sluggish performance during the subsequent stroke test even after adjusting the booster relay. The as-left closed stroke times were 5.3 and 5.5 seconds, respectively. The licensee used these subsequent stroke tests to re-baseline the valve IST maximum limiting and allowed stroke times. Subsequently, on December 13, 2011, during the next scheduled surveillance test, EFW-223B closed stroke time was 7.8 seconds. The licensee initiated a condition report to document the degraded trend but did not perform any additional troubleshooting or testing until the valve failed a scheduled leak rate test on February 16, 2012.

The inspectors determined that the licensee missed opportunities to identify the tears in the actuator diaphragm for EFW-223B during the surveillance tests conducted in September and December of 2011. The inspectors concluded that the licensee did not thoroughly evaluate the cause of the degraded IST closed stroke times in a timely manner and masked the degraded condition by increasing the booster relay set point and subsequently establishing a new baseline for the maximum limiting and allowed closed stroke times. The December 13, 2011 scheduled surveillance test would have resulted in declaring the valve inoperable with a closed stroke time 7.8 seconds if it had not been rebaselined. However, the licensee did not perform any troubleshooting because the valve stroked within the new baseline maximum limiting and allowed stroke times. The immediate corrective actions taken to restore compliance included replacing the diaphragm and determining the extent of condition by reviewing stroke time data for other air-operated valves with the same type, make, and model diaphragm. The planned corrective action included the revision of the air operated valve program post maintenance tests to identify similar problems.

Analysis. The failure to promptly identify and correct internal leakage from tears in the B emergency feedwater backup control valve EFW-223B diaphragm was a performance deficiency. The inspectors determined that this issue was reasonably within the licensee's ability to foresee and correct and should have been prevented. The performance deficiency was more than minor because it was associated with the equipment performance attribute of the Mitigating System Cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the internal leakage of EFW-223B affected two safety-related nitrogen accumulators and their ability to provide nitrogen gas to other connected safety related valves following a loss of offsite power event.

The inspectors used NRC Inspection Manual 0609, Attachment 4, "Initial Characterization of Findings," to evaluate this issue. The finding required a detailed analysis because it involved a potential loss of one train of safety related equipment for longer than the technical specification allowed outage time. A Region IV senior reactor analyst performed a bounding detailed risk evaluation for this issue. The senior reactor

analyst performed simplified calculations to determine the change to the core damage frequency (delta-CDF) for the failure of the nitrogen accumulator and connected valves. The analyst used the Waterford-3 Standardized Plant Analysis Risk (SPAR) model, Revision 8.16, with a truncation limit of 1E-15. The lower than normal truncation limit was necessary because the applicable cut-sets were truncating out at higher truncation limits. Three valves were affected by the accumulator failure. The accumulator provided nitrogen gas to operate the safety related valves when instrument air was not available. Two of the valves, EFW-223B (EFW header to steam generator 2 backup flow control valve) and EFW-228B (EFW to steam generator number 2 primary isolation), fail open on a loss of driving air or nitrogen. This increases the likelihood of an overcooling event. However, overcooling events are not believed to lead to core damage. In addition, other valves are in series with these valves and those valves are capable of the same function. EFW-223B and EFW-228B were not considered further. The third valve was MS-116B (steam generator number 2 atmospheric dump valve). The analyst set the basic event for this valve to "True" to indicate that common cause failure of valve MS-116A was a possibility. The analyst could not rule out that one of the opposite train diaphragms could be ready to fail. The bounding incremental conditional core damage probability for an entire year of exposure was 2E-9. Since the licensee estimated a T/2 exposure period of 4 months, the delta-CDF was approximately 1E-9.

Large Early Release Frequency: To address the contribution to conditional large early release frequency, the analyst used NRC Inspection Manual Chapter 0609, Appendix H, "Containment Integrity Significance Determination Process," dated May 6, 2004. Since the finding did not contribute directly to a steam generator tube rupture or an intersystem loss of coolant accident, the condition was not risk significant to the large early release frequency. Therefore, the analyst determined that the finding is of very low safety significance (Green). The inspectors concluded that the finding reflected current licensee performance and involved a cross-cutting aspect in the corrective action program component of the problem identification and resolution area in that the licensee did not thoroughly evaluate problems such that the resolutions address causes and extent of conditions, as necessary [P.1(c)].

Enforcement. Title 10 of CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and non-conformances are promptly identified and corrected. Contrary to the above, from September 9, 2011 to February 16, 2012, the licensee did not promptly identify and correct a condition adverse to quality. Specifically, the licensee did not promptly identify and correct internal leakage from tears in the B emergency feedwater backup control valve EFW-223B actuator diaphragm. As a result, these internal tears in the diaphragm caused excessive leakage that affected a nitrogen accumulator used to operate EFW-223B and other safety related valves. The licensee entered this condition into their corrective action program as CR-WF3-2012-0860. The immediate corrective actions taken to restore compliance included the replacement of the diaphragm.

Because this violation was of very low safety significance and the licensee entered the issue into their corrective action program, this violation was treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy

(NCV 05000382/2012004-03, “Failure to identify and correct a torn diaphragm of a safety-related air operated valve associated with the emergency feedwater system.”)

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

a. Inspection Scope

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

- On August 14, 2012, scheduled critical lifts for the installation of an air flow deflector wall over safety related equipment
- On August 20, 2012, emergent maintenance activities on the essential chill water loop B with scheduled maintenance to perform reactor trip breaker testing

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

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

b. Findings

Introduction. The inspectors identified a Green non-cited violation of 10 CFR 50.65(a)(4) because the licensee did not assess and manage the overall online risk involved with maintenance activities that lifted heavy loads over safety related equipment. Specifically, the licensee did not assess and manage the integrated plant risk prior to performing heavy load lifts in the train B dry cooling tower fan area when installing a temporary work platform to support the steam generator replacement project.

Description. On August 15, 2012, the licensee conducted heavy load lifts over the B train of the dry cooling tower area in order to assemble portions of a temporary work platform (TWP) used to support steam generator replacement maintenance activities. The licensee used procedure EN-WM-104, “Online Risk Assessment,” to perform an

initial risk for this activity while at-power and determined that the risk was a normal level with no additional risk management activities needed. The inspectors reviewed the online risk assessment and noted that the risk assessment associated with the lifts failed to identify that some of the activities associated with the assembly of the TWP met the definition of a non-standard lift. The risk assessment procedure EN-WM-104 identified that non-standard lifts should be considered as high risk and additional requirements for preparation, approval, and oversight of such activities are needed.

The inspectors noted that to determine if a lift is non-standard, the licensee should use procedure EN-MA-119, "Material Handling Program." Numerous lifts associated with assembling the TWP met the definition of a "critical lift" given in EN-MA-119. Specifically, the lifts involved handling large equipment "over spaces in which high value or safety-related equipment or systems are located." EN-MA-119 defines all critical lifts as non-standard lifts. However, the licensee used the contractor's assessment of what constitutes a critical lift. The inspectors determined that the licensee did not follow processes in place to properly assess and manage the risk associated with performing non-standard lifts. Due to this failure, the licensee inappropriately categorized the activities as having normal risk, rather than high risk, when performing EN-WM-104. The licensee also noted at that time the licensee scheduled reactor trip breaker testing. However, since this activity was deemed normal, no other risk management actions were in place due to the inadequate assessment. The categorization of the activities as having normal risk resulted in the licensee's failure to implement the more stringent risk management actions required by EN-WM-104 for high-risk activities.

The licensee entered this condition into the corrective action program as CR-WF3-2012-4195 and CR-WF3-2012-4489. The immediate corrective action taken to restore compliance was to re-evaluate and change the integrated risk classification from a normal risk to a high-risk level and implement the required risk management actions.

Analysis. The failure to adequately assess and manage risk before performing maintenance activities that lifted heavy loads over the train B dry cooling tower fan area was a performance deficiency. Specifically, the licensee did not assess and manage the integrated plant risk prior to performing heavy load lifts in the train B dry cooling tower fan area when installing a temporary work platform to support the steam generator replacement project. The inspectors determined that this deficiency was reasonably within the licensee's ability to foresee and correct. The performance deficiency was more than minor because it was associated with the human performance attribute of the Initiating Events cornerstone and affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the licensee's failure to identify non-standard lifts over safety related equipment as high risk prevented the licensee from taking additional risk management actions to limit the likelihood of an event that would upset plant stability.

The inspectors used NRC Inspection Manual 0609, Attachment 4, "Initial Characterization of Findings," to evaluate this issue. The initial screening directed the inspectors to use Appendix K "Maintenance Risk Assessment and Risk Management Significance Determination Process" to determine the significance of the finding. In

accordance with NRC Inspection Manual Chapter 0609, Appendix K, a senior reactor analyst used the licensee modified risk evaluation. The licensee used a modified risk range when evaluating the new risk assessment value for the omitted maintenance. Entergy Calculation PRA-W3-01-001S10, "WF3 Equipment Out of Service (EOOS) Monitor Work Package," Revision 3, specified that the Green to Yellow maintenance risk threshold corresponded to a conditional core damage probability of 5.5E-6. Since the non-evaluated maintenance did not cause the risk estimate to increase beyond the Green band, the analyst bounded the finding by assuming that the incremental change in risk was the same as the Green to Yellow risk threshold. The analyst also assumed a bounding one week exposure period. Therefore, the bounding risk deficit was approximately 5.5E-6*1/52 = 1.0E-7/year. This finding had very low safety significance (Green).

The inspectors concluded that the finding reflected current licensee performance and involved a cross-cutting aspect in the decision making component of the human performance area because the licensee did not make safety significant or risk significant decisions using a systematic process to ensure safety was maintained. Specifically, the licensee had a systematic process in place to assess and manage the risk associated with performing non-standard lifts, but failed to properly implement the process [H.1(a)].

Enforcement. Title 10 CFR 50.65(a)(4) requires, in part, that before performing maintenance activities, the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities. Contrary to the above, on August 15, 2012, the licensee did not assess and manage the increase in risk that may result from the proposed maintenance activities. Specifically, the licensee did not assess and manage the integrated plant online risk prior to performing heavy load lifts in the train B dry cooling tower fan area when installing a temporary work platform to support the steam generator replacement project. As a result, the licensee did not implement additional risk management actions as required by their procedure EN-WM-104, "Online Risk Assessment." The immediate corrective action taken to restore compliance was to re-evaluate and change the integrated risk classification from a normal risk to a high-risk level and implement the required risk management actions. This violation was treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy, because it was of very low safety significance and was entered into the licensee's corrective action program as CR-WF3-2012-4195 and CR-WF3-2012-4489 (NCV 05000382/2012004-04, "Failure to adequately access and manage risk before performing maintenance activities associated with non-standard lifts").

1R15 Operability Evaluations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed the following assessments:

- On July 10, 2012, auxiliary component cooling water heat exchanger outlet temperature control valve ACC-126A did not meet leakage requirements when closed

- On July 18, 2012, control room emergency filtration unit inlet damper HVC-205B position indication showing intermediate when the damper is closed

The inspectors selected these operability and functionality assessments based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure technical specification operability was properly justified and to verify the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the technical specifications and updated final safety analysis report to the licensee's evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. Additionally, the inspectors reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of two operability evaluations inspection sample(s) as defined in Inspection Procedure 71111.15-05.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

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

- On July 10, 2012, testing following repairs on train A auxiliary component cooling water heat exchanger outlet temperature control valve ACC-126A

- On July 23, 2012, testing following calibration and troubleshooting of the control room emergency filtration unit B inlet damper HVC-205B

- On August 20, 2012, testing following relay repairs on essential chiller B

- On August 21, 2012, testing following replacement of failed actuator diaphragm on the emergency feedwater back-up flow control valve EFW-223A

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

- The effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed

- Acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate

The inspectors evaluated the activities against the technical specifications, the updated final safety analysis report, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with post-maintenance tests to determine whether the licensee was identifying problems and entering them in the corrective action program and that the problems were being corrected commensurate with their importance to safety. Specific documents reviewed during this inspection are listed in the attachment.

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

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities (71111.20)

a. Inspection Scope

The inspectors reviewed the plans for the forced outage conducted on August 28, 2012, to confirm that licensee personnel had appropriately considered risk, industry experience, and previous site-specific problems in developing and implementing a plan that assured maintenance of defense in depth. During the forced outage, the inspectors observed portions of the shutdown and cooldown processes and monitored licensee controls over the forced outage activities listed below.

- Status and configuration of electrical systems to ensure that technical specification and the forced outage safety-plan requirements were met;

- Monitoring of decay heat removal processes, systems, and components;

- Reactor water inventory controls, including flow paths, configurations, and alternative means for inventory addition, and controls to prevent inventory loss;

- Controls over activities that could affect reactivity;

- Startup and ascension to full power operation, tracking of startup prerequisites, and reactor physics testing; and

- Licensee identification and resolution of problems related to the forced outage activities.

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

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

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

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

- Preconditioning
- Evaluation of testing impact on the plant
- Acceptance criteria
- Test equipment
- Procedures
- Test data
- Testing frequency and method demonstrated technical specification operability
- Test equipment removal
- Restoration of plant systems
- Fulfillment of ASME Code requirements
- Updating of performance indicator data
- Engineering evaluations, root causes, and bases for returning tested systems, structures, and components not meeting the test acceptance criteria were correct

- Reference setting data
- Annunciators and alarms setpoints

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

- On August 1, 2012, surveillance to perform category A seat leakage testing for auxiliary component cooling water jockey pump discharge valve ACC-1045A
- On August 16, 2012, surveillance to perform reactor trip breaker testing
- On September 14, 2012, surveillance to perform reactor coolant system water inventory balance

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

These activities constitute completion of two surveillance testing inspection samples and one reactor coolant system leakage detection surveillance sample as defined in Inspection Procedure 71111.22-05.

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP2 Alert Notification System Testing (71114.02)

a. Inspection Scope

The inspector discussed with licensee staff the operability of offsite emergency warning systems and backup alerting methods, to determine the adequacy of licensee methods for testing the alert and notification system in accordance with 10 CFR Part 50, Appendix E. The licensee's alert and notification system testing program was compared with criteria in NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1; FEMA Report REP-10, "Guide for the Evaluation of Alert and Notification Systems for Nuclear Power Plants"; and the licensee's current FEMA approved alert and notification system design report, "Updated Alert-Notification System Design Report," Revision 7, dated October 27, 2011. The specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.02-05.

b. Findings

No findings were identified.

1EP3 Emergency Response Organization Augmentation Testing (71114.03)

a. Inspection Scope

The inspector discussed with licensee staff the operability of primary and backup systems for augmenting on-shift staff to determine the adequacy of licensee methods for staffing emergency response facilities in accordance with their emergency plan and the requirements of 10 CFR Part 50, Appendix E, including provisions for staffing alternate or backup facilities. The inspector also reviewed licensee training on augmentation procedures, augmentation system testing programs, and selected entries in the licensee corrective action system related to emergency response facility staffing. The specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.03-05.

b. Findings

No findings were identified.

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

a. Inspection Scope

The NSIR Headquarters staff performed an in-office review of the latest revisions of various Emergency Plan Implementing Procedures (EPIPs) and the Emergency Plan located under ADAMS accession number ML12181A532 and ML12201A134 as listed in the Attachment.

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

These activities constitute completion of two samples as defined in Inspection Procedure 71114.04-05.

b. Findings

No findings were identified.

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies (71114.05)

a. Inspection Scope

The inspector reviewed:

- Licensee corrective action program requirements in Procedure EN-LI-102,"Corrective Action Process," Revision 19;
- Summaries of one hundred forty-four corrective action program entries (condition reports) assigned to the emergency preparedness department and emergency response organization between July 2010 and June 2012;
- Licensee audits, assessments, drill evaluations, and post-event after action reports conducted between July 2010 and June 2012;
- Memorandum of Understanding between the licensee and offsite agencies and organizations relied upon to support site emergency response efforts;
- Licensee procedures and training for the evaluation of changes to the site emergency plans;
- Maintenance records for equipment relied upon to support site emergency response efforts; and,
- Alternate facilities for the licensee's Technical Support Center and Operations Support Center.

The inspector selected seventeen condition reports for detailed review against the program requirements. The inspector evaluated the response to issues entered into the site corrective action program to determine the licensee's ability to identify, evaluate, and correct problems in accordance with the licensee program requirements, planning standard 10 CFR 50.47(b)(14), and 10 CFR Part 50, Appendix E. The specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.05-05.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

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

4OA1 Performance Indicator Verification (71151)

.1 Data Submission Issue

a. Inspection Scope

The inspector reviewed data submitted by the licensee for the Second Quarter 2012 performance indicators to identify any obvious inconsistencies prior to its public release in accordance with Inspection Manual Chapter 0608, "Performance Indicator Program."

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

b. Findings

No findings were identified.

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

a. Inspection Scope

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

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

b. Findings

No findings were identified.

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

a. Inspection Scope

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

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

b. Findings

No findings were identified.

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

a. Inspection Scope

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

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

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

b. Findings

No findings were identified.

.5 Reactor Coolant System Specific Activity (BI01)

a. Inspection Scope

The inspectors sampled licensee submittals for the reactor coolant system specific activity performance indicator for the period from the third quarter 2011 through the second quarter 2012. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, and NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 50.73." The inspectors reviewed the licensee's operator narrative logs, specific system chemistry samples, technical specification requirements, issue reports, event reports, and NRC integrated inspection reports for the period of July 2011 through July 2012 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one reactor coolant system specific activity sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.6 Drill/Exercise Performance (EP01)

a. Inspection Scope

The inspector sampled licensee submittals for the Drill and Exercise Performance performance indicator for the period October 2011 to June 2012. Performance indicator definitions and guidance in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, were used to determine the accuracy of the performance indicator data reported during those periods. The inspector reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures

and the Nuclear Energy Institute guidance. Specifically, the inspector reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator; assessments of performance indicator opportunities during predesignated control room simulator training sessions, and other drills. The specific documents reviewed are described in the attachment to this report.

These activities constitute completion of the drill/exercise performance sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.7 Emergency Response Organization Drill Participation (EP02)

a. Inspection Scope

The inspector sampled licensee submittals for the Emergency Response Organization Drill Participation performance indicator for the period October 2011 to June 2012. Performance indicator definitions and guidance in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, were used to determine the accuracy of the performance indicator data reported during those periods. The inspector reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the Nuclear Energy Institute guidance. Specifically, the inspector reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator, rosters of personnel assigned to key emergency response organization positions, and exercise participation records. The specific documents reviewed are described in the attachment to this report.

These activities constitute completion of the emergency response organization drill participation sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.8 Alert and Notification System (EP03)

a. Inspection Scope

The inspector sampled licensee submittals for the Alert and Notification System performance indicator for the period October 2011 to June 2012. Performance indicator definitions and guidance in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, were used to determine the accuracy of the performance indicator data reported during those periods. The inspector reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures

and the Nuclear Energy Institute guidance. Specifically, the inspector reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator and the results of periodic alert notification system operability tests. The specific documents reviewed are described in the attachment to this report.

These activities constitute completion of the alert and notification system sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152)

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

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

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

b. Findings

No findings were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of

items entered into the licensee's corrective action program. The inspectors accomplished this through review of the station's daily corrective action documents.

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

b. Findings

No findings were identified.

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

(Closed) Licensee Event Report 05000382/2012-002-00, Failed Valve Actuator Diaphragm Causes Inoperability Greater Than Allowed by TS LCO Action

On February 16, 2012, a scheduled surveillance for the nitrogen accumulator system identified a nitrogen leak with a rate exceeding technical specification allowance. The cause of the leakage was due to a tear in the diaphragm for an emergency feedwater valve EFW-223B actuator. As a part of the review of this event, the inspectors identified non-cited violation 05000382-2012004-03, "Failure to identify and correct a torn diaphragm of a safety-related air operated valve associated with the emergency feedwater system." The inspectors documented this violation in Section 1R12 of this report. This licensee event report is closed.

4OA6 Meetings, Including Exit

Exit Meeting Summary

On July 12, 2012, the inspector presented the results of the onsite inspection of the licensee's emergency preparedness program to Ms. D. Jacobs, Vice President, Operations and other members of the licensee's staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On October 11, 2012, the inspectors presented the inspection results to Ms. D. Jacobs, Vice President, Operations and other members of the licensee's staff. The licensee acknowledged the issues presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

D. Jacobs, Vice President, Operations
K. Cook, General Manager, Plant Operations
J. Bourgeois, Acting Manager, Chemistry
J. Brawley, ALARA Supervisor, Radiation Protection
C. Fugate, Manager, Operations
L. Gaubert, Senior HP Technician, Radiation Protection
J. Gumnick, Manager, Radiation Protection
W. Hardin, Senior Licensing Specialist, Licensing
J. Hornsby, Manager, Chemistry
B. Lanka, Manager, System Engineering
B. Lindsay, Manager, Maintenance
M. Mason, Manager, Licensing (Acting)
W. McKinney, Director, (Acting) Nuclear Safety Assurance
D. Miller, Supervisor, Radiation Protection
K. Nichols, Director, Engineering
B. Pellegrin, Manager, Emergency Planning
R. Perry, Manager, Emergency Planning
G. Pierce, Manager, Training
J. Pollack, Senior Licensing Specialist, Licensing
R. Porter, Manager, Design Engineering
W. Rentz, Director, Emergency Planning, EOI
D. Viener, Supervisor, Engineering Programs and Components
M. Vierra, Dosimetry Senior Technician, Radiation Protection
J. Vollmer, Dosimetry Supervisor, Radiation Protection
J. Williams, Senior Specialist, Licensing

NRC Personnel

M. Davis, Senior Resident Inspector
C. Speer, Reactor Inspector

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000382-2012004-01	NCV	Failure to establish procedural controls to ensure that licensed operators could perform immediate and time critical operator actions associated with security and fire events (Section 1R11)
05000382-2012004-02	NCV	Failure to identify and correct degraded conditions associated with the auxiliary component cooling water heat exchanger outlet temperature control valve (Section 1R12)
05000382-2012004-03	NCV	Failure to identify and correct a torn diaphragm of a safety-related air operated valve associated with the emergency feedwater system (Section 1R12)
05000382-2012004-04	NCV	Failure to adequately access and manage risk before performing maintenance activities associated with non-standard lifts (Section 1R13)

Closed

05000382/2012-002-00	LER	Failed Valve Actuator Diaphragm Causes Inoperability Greater Than Allowed by TS LCO Action (Section AOA3)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

PROCEDURES/OCUMENTS

NUMBER	TITLE	REVISION
OP-901-521	Severe Weather and Flooding	305
EN-EP-303	Severe Weather Recovery	0
OP-002-003	Component Cooling Water	308

Section 1R04: Equipment Alignment

PROCEDURES/DOCUMENTS

NUMBER	TITLE	REVISION
OP-002-001	Auxiliary Component Cooling Water	302
OP-003-014	Control Room Heating and Ventilation (HVC)	301

Section 1R04: Equipment Alignment

PROCEDURES/DOCUMENTS

NUMBER	TITLE	REVISION
OP-009-003	Emergency Feedwater	305

Section 1R05: Fire Protection

PROCEDURES/DOCUMENTS

NUMBER	TITLE	REVISION
OP-009-004	Fire Protection	307
UNT-005-013	Fire Protection Program	11

Section 1R06: Flood Protection Measures

PROCEDURES/DOCUMENTS

NUMBER	TITLE	REVISION
EN-DC-346	Cable Reliability Program	0
MNQ3-5	Flooding Analysis Outside Containment	0

Section 1R07: Heat Sink Performance

PROCEDURES/DOCUMENTS

NUMBER	TITLE	REVISION
OP-002-003	Component Cooling Water	308
EN-DC-316	Heat Exchanger Performance and Condition Monitoring	3
PE-001-004	Heat Exchanger Performance	2

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

PROCEDURES/DOCUMENTS

NUMBER	TITLE	REVISION
EN-OP-115	Conduct of Operations	12
OP-901-502	Evacuation of the Control Room and Subsequent Plant Shutdown	22
OP-901-523	Security Events	10

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

PROCEDURES/DOCUMENTS

NUMBER	TITLE	REVISION

CONDITION REPORTS

WF3-2012-3815

Section 1R12: Maintenance Effectiveness

PROCEDURES/DOCUMENTS

NUMBER	TITLE	REVISION
OP-002-001	Auxiliary Component Cooling Water	303
OP-903-118	Primary Auxiliaries Quarterly IST Valve Tests	25
OP-903-121	Safety Systems Quarterly IST Valve Test	14
MM-006-001	Valve Maintenance	302
STA-001-005	Leakage Testing of Air and Nitrogen Accumulators for Safety Related Valves	
EC-M97-038	Design Basis Review for ACC Header CCW Heat Exchanger Outlet Control Valves ACC-126A	0
EC-M89-002	Nitrogen Accumulator Leak Rate	3
ECR-12680	Rebaseline for EFW-223B Closed Stroke Time	0
W3F1-2012-0022	Licensee Event Report 2012-002, Failed Valve Actuator Diaphragm Causes Inoperability Greater Than Allowed by TS LCO Action	0

CONDITION REPORTS

WF3-2012-3644	WF3-2012-3280	WF3-2012-2692	WF3-2012-3217	WF3-2012-2821
WF3-2012-0860	WF3-2012-0937	WF3-2011-6405	WF3-2011-8107	WF3-2012-0868

WORK ORDERS

52321147	52274219	52359919	299943	52342070

Section 1R13: Maintenance Risk Assessment and Emergent Work Controls

PROCEDURES/DOCUMENTS

NUMBER	TITLE	REVISION
OI-037-000	Operations' Risk Assessment Guideline	304
EN-WM-104	Online Risk Assessment	7
EN-MA-119	Material Handling Program	12
EC-8432	10CFR 50.65 Assessment for Outside Lift system Crane and Outside Support Crane Rigging and Handling for the Waterford 3 SG and RVCH Replacement Project	0
SGT QEP 10.05-3	Heavy Load Lifting Permit	0
PRA-W3-01-001S10	WF3 Equipment Out Of Service (EOOS) Monitor Work Package	3

CONDITION REPORTS

WF3-2012-4195 WF3-2012-4489

Section 1R15: Operability Evaluations

PROCEDURES/DOCUMENTS

NUMBER	TITLE	REVISION
EN-OP-104	Operability Determination Process	6
OP-100-014	Technical Specifications and Technical Requirement Compliance	313
TD-M120.0210	Masoneilan Instructions Manual ES6000E for Electropneumatic Transducer Model 8005A & 8006A	1

CONDITION REPORTS

WF3-2012-3280 WF3-2012-2619 WF3-2012-3154

Section 1R19: Post-Maintenance Testing

PROCEDURES/DOCUMENTS

NUMBER	TITLE	REVISION
OP-903-118	Primary Auxiliaries Quarterly IST Valve Tests	28

Section 1R19: Post-Maintenance Testing

PROCEDURES/DOCUMENTS

NUMBER	TITLE	REVISION
OP-003-014	Control Room Heating and Ventilation (HVC)	301
MI-005-512	Control Room Emergency Filter Unit Intake & Return	302
MM-003-045	Control Room Air Conditioning System Surveillance	304
MM-007-027	Hydramotors Model NH92	304

CONDITION REPORTS

WF3-2012-3432 WF3-2012-2619 WF3-2012-1951 WF3-2012-3217 WF3-2012-3182

WORK ORDERS

321721 321577

Section 1R22: Surveillance Testing

PROCEDURES/DOCUMENTS

NUMBER	TITLE	REVISION
OP-903-128	Category A Leak Test	7
OP-903-107	Plant Protection System Channel A & B & C& D Functional Test	304
OP-903-024	Reactor Coolant System Water Inventory Balance	20

Section 1EP2: Alert Notification System Testing

PROCEDURES/DOCUMENTS

NUMBER	TITLE	REVISION / DATE
	Updated Alert-Notification System Design Report, Revision 7	October 27, 2011
	Design Report Update: Upgraded Public Alert and Notification System, Waterford3 Steam Electric Station	December 2009
EPP - 422	Siren and Helicopter Warning System Maintenance	4
EPP - 424	Siren Testing and Siren System Administrative Controls	13

Section 1EP3: Emergency Response Organization Augmentation Testing

PROCEDURES/DOCUMENTS

NUMBER	TITLE	REVISION
EP-002-015	Emergency Responder Activation	302
EPP - 462	Evaluation of Pager Tests	1
	Evaluation Report for the Pager Test Conducted May 27, 2012	
	Evaluation Report for the Pager Test Conducted March 12, 2012	
	Evaluation Report for the Pager Test Conducted December 14, 2011	

Section 1EP3: Emergency Response Organization Augmentation Testing

PROCEDURES/DOCUMENTS

NUMBER	TITLE	REVISION
	Evaluation Report for the Pager Test Conducted June 9, 2011	
	Evaluation Report for the Pager Test Conducted January 21, 2011	
	Evaluation Report for the Pager Test Conducted November 9, 2010	
	Evaluation Report for the Pager Test Conducted August 18, 2010	

Section 1EP4: Emergency Action Level and Emergency Plan Changes

PROCEDURES/DOCUMENTS

NUMBER	TITLE	REVISION
	Emergency Plan	43
EP-001-001	Recognition and Classification of Emergency Conditions	30

Section 1EP5: Correction of Emergency Preparedness Weaknesses and Deficiencies

PROCEDURES/DOCUMENTS

NUMBER	TITLE	REVISION / DATE
EN-EP-305	Emergency Planning 10CFR50.54(q) Review Program	2, 3
EN-EP-308	Emergency Planning Critiques	2
EN-LI-102	Corrective Action Process	19
EPP-428	Emergency Facilities and Equipment Readiness	301
EPP-003-020	Emergency Preparedness Drills and Exercises	301
EPP-003-030	Emergency Program Review, Updating and Modification	301
LO-WLO-2010-0034	Emergency Planning Performance Indicator Assessment	April 27, 2010
LO-WLO-2011-0009	Pre-NRC Evaluated EP Exercise Focused Assessment	October 5, 2011
LO-WLO-2011 0026	Benchmark: Point Beach QA Audit of Emergency Planning	July 22, 2011
LO-WLO-2012-0008	Pre-INPO Emergency Planning Review Visit Focused Assessment	April 14, 2012
LO-WLO-2010-0050	Standard ERO Snapshot Assessment	September 21, 2010
EN-QV-108	QA Surveillance Process	9
EN-QV-109	Audit Process	21
QA-07-2010-W3-1	Quality Assurance Audit Report: Emergency Preparedness	May 18, 2010
QA-07-2011-W3-1	Quality Assurance Audit Report: Emergency Preparedness	April 8, 2011
QS-2012-W3-005	Review of Changes in Personnel, Procedures, Equipment, or Facilities that may have had an Impact on the Waterford-3 Emergency Preparedness Program	March 27, 2012
QS-2012-W3-006	Review of Waterford-3 Compliance with the Requirements of NSIR/DPR-ISG-01, “Emergency Planning for Nuclear Power Plants”	April 26, 2012

Section 1EP5: Correction of Emergency Preparedness Weaknesses and Deficiencies

PROCEDURES/DOCUMENTS

NUMBER	TITLE	REVISION / DATE
	Waterford 3 Oversight Mid-term Report, March-April 2012	
	Waterford 3 Oversight Report, November 2011 – February 2012	
	Waterford 3 Oversight Report, July-October 2010	
	Waterford 3 Oversight Report, November 2010 – February 2011	
	Waterford 3 Oversight Report, March-June 2011	
	Waterford 3 Oversight Report, March-April 2011	
	Waterford 3 Oversight Report, July-October 2011	
W3D3-2012-0001	Evaluation Report for the Drill conducted April 17, 2012	May 16, 2012
W3D3-2012-0003	Evaluation Report for the Drill conducted February 15, 2012	March 13, 2012
W3D3-2011-0009	Evaluation Report for the Drill conducted December 7, 2011	January 4, 2012
W3D3-2011-0008	Evaluation Report for the Drill conducted October 25, 2011	November 25, 2011
W3D3-2011-0003	Evaluation Report for the Drill conducted July 12, 2011	August 11, 2011
W3D3-2011-0002	Evaluation Report for the Drill conducted March 2, 2011	March 31, 2011
W3D3-2010-0032	Evaluation Report for the Drill conducted October 27, 2010	November 22, 2010
W3D3-2010-0029	Evaluation Report for the Drill conducted August 25, 2010	September 25, 2010
W3D3-2012-0002	Evaluation Report for the Drill conducted April 5, 2012	April 25, 2012
W3D3-2010-0018	Evaluation Report for the Drill conducted May 27, 2010	June 16, 2010
W3D3-2010-0031	Evaluation Report for the Drill conducted October 8, 2010	November 23, 2010

Section 1EP5: Correction of Emergency Preparedness Weaknesses and Deficiencies

PROCEDURES/DOCUMENTS

NUMBER	TITLE	REVISION / DATE
	Evaluation Report for the Drill conducted February 14, 2011	March 14, 2011
W3D3-2011-0010	Evaluation Report for the Drill conducted December 16, 2011	January 4, 2012
W3D3-2012-0002	Evaluation Report for the Drill conducted April 5, 2012	April 25, 2012
W3D3-2011-0004	Evaluation Report for the Unannounced Off-Hours Callout Drill conducted August 4, 2011	September 1, 2011
	10CFR50.54(q) Screening for EP-002-102, Revision 304	January 19, 2012
	10CFR50.54(q) Screening for EP-002-081, Revision 10	February 6, 2012
	10CFR50.54(q) Screening for the Waterford3 Emergency Plan, Revision 42	
	10CFR50.54(q) Screening for the Waterford3 Emergency Plan, Revision 43	June 4, 2012
	10CFR50.54(q) Screening for EP-001-001, Revision 30	May 31, 2012
	10CFR50.54(q) Screening for EN-EP-310, Revision 1	May 16, 2012

CONDITION REPORTS

WF3-2010-05460	WF3-2010-06184	WF3-2010-06605	WF3-2010-07185	WF3-2011-00307
WF3-2011-01037	WF3-2011-01185	WF3-2011-01314	WF3-2011-01480	WF3-2011-01529
WF3-2011-01545	WF3-2011-03701	WF3-2011-05160	WF3-2011-05161	WF3-2011-05587
WF3-2011-05764	WF3-2011-06650	WF3-2011-07619	WF3-2011-08202	WF3-2012-01934
WF3-2012-01955	WF3-2012-01956	WF3-2012-02489	WF3-2012-03296	WF3-2012-03345

Section 4OA1: Performance Indicator Verification

PROCEDURES/DOCUMENTS

NUMBER	TITLE	REVISION
EN-LI-104	Performance Indicator Process	5

Section 4OA1: Performance Indicator Verification

PROCEDURES/DOCUMENTS

NUMBER	TITLE	REVISION
EN-FAP-OM-005	Nuclear Performance Indicator Process	0
EPP-422	Siren and Helicopter Warning System Maintenance	4
EPP-424	Siren Testing and Siren System Administrative Controls	13
EP-001-001	Recognition and Classification of Emergencies	30
EP-002-010	Notifications and Communications	308
EP-002-052	Protective Action Guidelines	23
EP-003-070	Emergency Communications System Routine Testing	303

MISCELLANEOUS DOCUMENTS

NUMBER	TITLE	REVISION
	Waterford Steam Electric Station Emergency Plan	40-43

Section 4OA2: Identification and Resolution of Problems

PROCEDURES/DOCUMENTS

NUMBER	TITLE	REVISION
EN-LI-102	Corrective Action Process	16

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

PROCEDURES/DOCUMENTS

NUMBER	TITLE	REVISION
W3F1-2012-0022	Licensee Event Report 2012-002, Failed Valve Actuator Diaphragm Causes Inoperability Greater Than Allowed by TS LCO Action	0