



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
612 EAST LAMAR BLVD, SUITE 400
ARLINGTON, TEXAS 76011-4125

August 12, 2009

Joseph Kowalewski, Vice President, Operations
Entergy Operations, Inc.
Waterford Steam Electric Station, Unit 3
17265 River Road
Killona, LA 70057-3093

Subject: WATERFORD STEAM ELECTRIC STATION, UNIT 3 - NRC INTEGRATED
INSPECTION REPORT 05000382/2009-003

Dear Mr. Kowalewski:

On July 7, 2009, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Waterford Steam Electric Station, Unit 3. The enclosed integrated inspection report documents the inspection findings, which were discussed on August 11, 2009, with you and other members of your staff.

The inspection 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.

This report documents three NRC identified findings of very low safety significance (Green). All of these findings involved violations of NRC requirements. However, because of the very low safety significance and because they are entered into your corrective action program, the NRC is treating these findings as noncited violations, consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest the violations or the significance of the noncited violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555-0001, with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 612 E. Lamar Blvd, Suite 400, Arlington, Texas, 76011-4125; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at the Waterford Steam Electric Station, Unit 3 facility. In addition, if you disagree with the characterization of any finding 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. The information you provide will be considered in accordance with Inspection Manual Chapter 0305.

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

Jeffrey A. Clark, P.E.
Project Branch E
Division of Reactor Projects

Docket: 50-382
License: NPF-38

Enclosure:
NRC Inspection Report 05000382/2009003
w/Attachment: Supplemental Information

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**U.S. NUCLEAR REGULATORY COMMISSION
REGION IV**

Docket: 05000382

License: NFP-38

Report: 05000382/2009003

Licensee: Entergy Operations, Inc.

Facility: Waterford Steam Electric Station, Unit 3

Location: Hwy. 18
Killona, LA

Dates: April 7 through July 7, 2009

Inspectors: D. Overland, Senior Resident Inspector
Paul J. Elkmann, Senior Emergency Preparedness Inspector
Gilbert L. Guerra, CHP, Emergency Preparedness Inspector

Approved By: Jeff Clark, Chief, Project Branch E
Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000382/2009003; 4/7/09 - 7/7/09; Waterford Steam Electric Station, Unit 3; Problem Identification and Resolution: Exercise Evaluation, Identification and Resolution of Problems
The report covered a 3-month period of inspection by resident inspectors and an announced baseline inspection by regional based inspectors. Three Green noncited 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." 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: Mitigating Systems

- Green. The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion VXI (Corrective Actions), because the licensee failed to identify the cause for a significant condition adverse to quality. The Train B 125 Vdc battery bank failed to pass a technical specification surveillance requirement discharge test during a Spring 2008 outage. The root cause procedure required that the licensee sequester the battery in a controlled area so that vital information related to the failure could be obtained. However, the licensee disposed of the battery instead. When questions arose concerning the specified failure cause (impurities in the battery materials), the licensee was unable to provide objective evidence to support the conclusion. Had the licensee obtained objective evidence to support their conclusion that impurities caused the battery failure, a 10 CFR Part 21 report may have been required. The licensee replaced the battery and planned to replace similar batteries in the other two trains during the next refueling outage. The licensee entered this finding in their corrective action program as Condition Report CR-WF3-2009-2846.

The finding was more than minor because, if left uncorrected, it could lead to a more significant safety concern. Specifically, since the cause of the battery failure was not definitively found, the licensee may not have taken corrective actions to prevent other battery failures. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Screening Worksheet, the finding was of very low risk significance because it did not actually cause the loss of operability or functionality of another 125 Vdc battery at the time of the inspection. This finding had a crosscutting aspect in the area of Problem Identification and Resolution (Corrective Action Program Component) because the licensee failed to thoroughly evaluate the need to keep the battery prior to disposal [P.1(c)] (Section 40A2).

- Green. The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI (Corrective Action), for the failure to promptly correct

conditions adverse to quality. The licensee had documented several conditions adverse to quality and then transferred the concerns to other condition reports. Then, the licensee closed those condition reports without addressing the concerns. Identified conditions included (1) the Train B 125 Vac discharge test data indicated a loose battery connection but the battery was permitted to pass the test anyway; (2) the root cause determination for the failed battery was focused on the statements of one person and failed to address other information; (3) the root cause determination failed to address conflicting information; and (4) the root cause determination failed to properly address other potential causes for the inoperable battery, such as tampering. Plant personnel had failed to accurately translate the issues when transferring information from one condition report to another. The licensee entered this finding into their corrective action program as Condition Report CR-WF3-2009-1177.

The finding was more than minor because, if left uncorrected, it would become a more significant safety concern. For example, the failure to include acceptance criteria in the battery discharge test (intended to identify and correct loose battery connections) could result in another inoperable 125 Vdc battery for an extended period. The inspectors evaluated the finding using Inspection Manual Chapter 609, Significance Determination Process, Phase 1 Screening Worksheet and determined that the finding was of very low risk significance because it did not result in another battery becoming inoperable or nonfunctional. This finding had a crosscutting aspect in the area of Human Performance (Work Practices Component) because plant personnel failed to effectively use human error prevention techniques, such as self and peer checking, when transferring concerns between condition reports [H.4(a)] (Section 4OA2).

Cornerstone: Emergency Preparedness

- Green. The inspectors identified a noncited violation of 10 CFR 50.47(b)(10) for the licensee's failure to develop and have in place guidelines for the choice of protective actions during an emergency that were consistent with federal guidance. Specifically, the licensee's guidelines for extending existing protective action recommendations into additional geographical areas of the emergency planning zone under conditions of changing wind vectors were not consistent with the guidance of EPA-400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents." The licensee's practices resulted in unnecessary recommendations for protective actions in areas where valid dose projections show federal protective action guides are not exceeded, and may expose members of the public to unjustified risks. The licensee has entered this issue into their corrective action system as Condition Report CR-WF3-2009-03256.

This finding was more than minor because it was not similar to the examples of Manual Chapter 0612, Appendix E, and affected the emergency preparedness cornerstone objective because unnecessary protective actions may expose members of the public to an unjustified risk. The finding was associated with the

emergency response organization attributes of 50.47(b) planning standards and training. This finding was of very low safety significance because it was not a risk significant planning standard functional failure or degraded function because licensee protective action recommendations would be issued in accordance with federal guidance for all areas of the emergency planning zone where Protective Action Guides are exceeded. This finding was evaluated as not having a crosscutting aspect because the finding was not indicative of current licensee performance (Section 1EP1).

B. Licensee-Identified Violations

None

REPORT DETAILS

Summary of Plant Status

The plant began the inspection period on April 7, 2009, at 100 percent power and remained at approximately 100 percent power for the rest of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, and Emergency Preparedness

1R01 Adverse Weather Protection (71111.01)

.1 Summer Readiness for Offsite and Alternate-ac Power a. Inspection Scope

The inspectors performed a review of the licensee's preparations for summer weather for selected systems, including conditions that could lead to loss-of-offsite power and conditions that could result from high temperatures. The inspectors reviewed the licensee's procedures affecting these areas and the communications protocols between the transmission system operator and the plant to verify that the appropriate information was being exchanged when issues arose that could affect the offsite power system. Examples of aspects considered in the inspectors' review included:

- The coordination between the transmission system operator and the plant during off-normal or emergency events
- The explanations for the events
- The estimates of when the offsite power system would be returned to a normal state
- The notifications from the transmission system operator to the plant when the offsite power system was returned to normal

During the inspection, the inspectors focused on plant-specific design features and the licensee's procedures used to mitigate or respond to adverse weather conditions. Additionally, the inspectors reviewed the Final Safety Analysis Report and performance requirements for systems selected for inspection, and verified that operator actions were appropriate as specified by plant-specific procedures. Specific documents reviewed during this inspection are listed in the attachment. The inspectors also reviewed corrective action program items to verify that the licensee was identifying adverse weather issues at an appropriate threshold and entering them into their corrective action program in accordance with station corrective action procedures. The inspectors' reviews focused specifically on the following plant systems:

- Emergency diesel generators
- Station startup transformers
- Uninterruptible power supplies

These activities constitute completion of one readiness for summer weather affect on offsite and alternate ac power sample as defined in Inspection Procedure 71111.01-05.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignments (71111.04)

.1 Partial Walkdown

a. Inspection Scope

The inspectors a performed partial system walkdown of the following risk-significant system:

- May 11, 2009, partial system walkdown of emergency diesel generator Train B

The inspectors selected this system based on its risk significance relative to the reactor safety cornerstones at the time it was 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, 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 system incapable of performing their intended functions. The inspectors also walked down accessible portions of the system 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 one partial system walkdown sample as defined in Inspection Procedure 71111.04-05.

b. Findings

No findings of significance were identified.

.2 Complete Walkdown

a. Inspection Scope

On June 3, 2009, the inspectors performed a complete system alignment inspection of the containment spray system Train B 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 walked down 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 of significance were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Fire Inspection Tours

a. Inspection Scope

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

- April 28, 2009, reactor auxiliary building fire Zones 33, 35, and 36
- May 11, 2009, reactor auxiliary building fire Zones 2, 15, 16, and 23
- May 27, 2009, reactor auxiliary building fire Zones 17, 18, and 19
- May 27, 2009, reactor auxiliary building fire Zones 20, and 21

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 of significance were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors reviewed the 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 walked down the area 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.

- July 1, 2009, review of Operating Experience Smart Sample OpESS FY2007-02, "Flooding Vulnerabilities Due to Inadequate Design and Conduit / Hydrostatic Seal Barrier Concerns," in the switchgear Train B room

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

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

a. Inspection Scope

On May 28, 2009, the inspectors observed a crew of licensed operators in the plant's simulator to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- Licensed operator performance
- Crew's clarity and formality of communications
- Crew's ability to take timely actions in the conservative direction
- Crew's prioritization, interpretation, and verification of annunciator alarms
- Crew's correct use and implementation of abnormal and emergency procedures
- Control board manipulations
- Oversight and direction from supervisors
- Crew's ability to identify and implement appropriate technical specification actions and emergency plan actions and notifications

The inspectors compared the crew's performance in these areas to pre-established operator action expectations and successful critical task completion requirements. Specific documents reviewed during this inspection are listed in the attachment. These activities constitute completion of one quarterly licensed-operator requalification program sample as defined in Inspection Procedure 71111.11.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12Q)

a. Inspection Scope

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

- June 2, 2009, emergency lighting system
- June 29, 2009, review of Operating Experience Smart Sample OpESS FY2008-01, "Negative trend and Recurring Events Involving Emergency Diesel Generators"

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

No findings of significance were identified.

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:

- April 17, 2009, replacement and calibration of power Supply 37-H for PPS Channel B
- April 21, 2009, planned maintenance outage of Train B emergency core cooling systems
- May 6, 2009, scheduled maintenance outage of high pressure safety injection Train A
- June 17, 2009, corrective maintenance to replace station Battery 3AB-S Cell 31 due to low individual cell voltage

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 four maintenance risk assessments and emergent work control inspection samples as defined in Inspection Procedure 71111.13-05.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the following issues:

- May 12, 2009, voiding discovered at low pressure safety injection Pump A discharge to reactor coolant Loop 2B vent
- May 13, 2009, multiple trips of control room emergency filtration unit Train A
- May 13, 2009, failure of emergency diesel generator Train A to achieve 110 percent design basis load during scheduled surveillance run

The inspectors selected these potential operability issues based on the risk-significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that technical specification operability was properly justified and 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 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. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors also 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 three operability evaluations inspection sample(s) as defined in Inspection Procedure 71111.15-05

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

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

- April 20, 2009, replacement and calibration of power Supply 37-H for PPS Channel B
- April 22, 2009, replacement of diesel generator sequencer Relay EG EREL2392-N following Part 21 recall
- May 7, 2009, breaker and motor maintenance and relay replacement on high pressure safety injection Pump A
- May 13, 2009, leak test and adjustment for control room outside air intake Valve HVC-102 following multiple trips of control room emergency filtration unit Train A
- May 15, 2009, replacement of a motor-operated potentiometer and adjustment of the mechanical governor following a failed emergency diesel generator Train A surveillance run

- June 5, 2009, motor maintenance and oil leak repair for containment spray Pump A
- June 12, 2009, corrective maintenance to replace pump plungers and packing to correct leaking seals on charging Pump AB in an attempt to reduce reactor coolant system leakage
- June 16, 2009, corrective maintenance to replace pump plungers and packing to correct leaking seals on charging Pump B in an attempt to reduce reactor coolant system leakage

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 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 postmaintenance 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 eight postmaintenance testing inspection samples as defined in Inspection Procedure 71111.19-05.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the Final Safety Analysis Report, procedure requirements, and technical specifications to ensure that the five surveillance activities listed below demonstrated that the systems, structures, and/or components tested were capable of performing their intended safety functions. The inspectors either witnessed or reviewed

test data to verify that the significant surveillance test attributes were adequate to address the following:

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

- April 23, 2009, low pressure safety injection Pump B operability check
- April 27, 2009, component cooling water in-service valve testing
- May 8, 2009, emergency feedwater Pump A operability check
- May 26, 2009, emergency diesel generator Train A
- June 15, 2009, reactor coolant system leakage detection

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

These activities constitute completion of five surveillance testing inspection sample(s) as defined in Inspection Procedure 71111.22-05.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP1 Exercise Evaluation (71114.01)

a. Inspection Scope

The inspectors reviewed the objectives and scenario for the 2009 biennial emergency plan exercise to determine if the exercise would acceptably test major elements of the emergency plan. The scenario simulated a tornado touchdown on site that damaged the turbine building, a failure of a liquid radiological waste tank, a main generator trip leading to damage in the station switchyard causing a loss of offsite power, failures of both emergency diesel generators leading to station blackout conditions, a large reactor coolant system break inside containment, fission product barrier failures, core damage from fuel overheating, a filtered and monitored radiological release to the environment via a containment penetration failure and annulus ventilation, and a change in the direction of the radiological release to demonstrate the licensee emergency response organization's capability to implement their emergency plan.

The inspectors evaluated exercise performance by focusing on the risk-significant activities of event classification, offsite notification, recognition of offsite dose consequences, and development of protective action recommendations, in the control room simulator and the following dedicated emergency response facilities:

- Technical Support Center
- Operations Support Center
- Emergency Operations Facility

The inspectors also assessed recognition of, and response to, abnormal and emergency plant conditions, the transfer of decision making authority and emergency function responsibilities between facilities, onsite and offsite communications, protection of emergency workers, emergency repair evaluation and capability, and the overall implementation of the emergency plan to protect public health and safety and the environment. The inspectors reviewed the current revision of the facility emergency plan, emergency plan implementing procedures associated with operation of the licensee's emergency response facilities, procedures for the performance of associated emergency functions, and other documents as listed in the attachment to this report.

The inspectors compared the observed exercise performance with the requirements in the facility emergency plan, 10 CFR 50.47(b), 10 CFR Part 50, Appendix E, and with the guidance in the emergency plan implementing procedures and other federal guidance.

The inspectors attended the postexercise critiques in each emergency response facility to evaluate the initial licensee self-assessment of exercise performance. The inspectors also attended a subsequent formal presentation of critique items to plant management. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.01-05.

b. Findings

Introduction. The inspectors identified a noncited violation of 10 CFR 50.47(b)(10) for the licensee's failure to develop and have in place guidelines for the choice of protective actions during an emergency that were consistent with federal guidance. Specifically, the licensee's guidelines for extending existing protective action recommendations into additional geographical areas of the emergency planning zone under conditions of changing wind vectors were not consistent with the guidance of EPA-400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents."

Description. The inspectors identified that Procedure EP-2-052, "Protective Action Guidelines," Revision 20, allows the licensee to generate evacuation protective action recommendations for members of the general public in areas of the emergency planning zone where radiological protective action guides are not exceeded. Specifically, inspectors determined that, with an existing initial protective action recommendation based on plant conditions, the licensee's practice when changes occur in the wind direction vector were to recommend to offsite authorities in any circumstance additional protective actions to the same downwind distance for every geographical area traversed by the wind as previously recommended. The recommendations would be done without considering in the decision process whether EPA protective action guides were exceeded in the newly-affected areas. The licensee's practices result in unnecessary recommendations for protective actions in areas where valid dose projections show federal protective action guides are not exceeded, and may expose members of the public to unjustified risks.

The inspectors determined the licensee has adopted a prompt protective action scheme based on EPA-400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," as described by:

- Waterford 3 Steam Electric Station Emergency Plan, Revision 37, Section 6.6.1.2, "Offsite Protective Action Recommendations," states, in part, the set of guidelines, based on dose projections, is consistent with both EPA protective action guidelines and with the protective action guidelines of the State of Louisiana Peacetime Radiological Response Plan, that guidelines will be used to minimize risks for an accident and that, when total effective dose equivalent

projected dose is less than 1 rem or to the projected committed dose equivalent thyroid is less than 5 rem, no immediate actions are necessary.

- Procedure EP-2-052, "Protective Action Guidelines," Revision 20, states in Section 1.0 the purpose is to provide guidance for protective action decisionmaking with respect to the EPA Protective Action Guidelines, and in Section 5.2.1.3, that if dose projection information is available, then use Attachment 7.2 or equivalent computerized methods which assess the projected radiation dose to modify the initial General Emergency protective actions as necessary.

The inspectors reviewed the licensee's Emergency Plan and emergency plan implementing procedure for making protective action recommendations to offsite authorities, and discussed with licensee emergency preparedness staff the licensee's expectations and practices for making protective action recommendations under conditions of changing wind direction and radiological severity. The inspectors were informed by the licensee's emergency preparedness management that their practice with regard to changing wind direction was to always recommend extending existing protective actions to adjacent geographical areas affected by the new wind vector(s) to the same downwind distance as in previously-affected areas. The licensee would make this automatic extension of existing protective action recommendations without considering dose projection results, even when valid dose projections were available that showed protective action guides were not exceeded along the new wind vector(s). The inspectors concluded that the licensee's practice of always recommending to offsite authorities the extension of protective actions to the same downwind distance as existing recommendations was not in accordance with the guidance of EPA-400-R-92-001, because the licensee did not modify initial General Emergency protective actions based on EPA protective action guides when valid dose projection information was available.

The inspectors determined that the licensee performed periodic dose assessments to assess the impact of a radiological release on the emergency planning zone as meteorological and radiological conditions change. The inspectors determined the licensee's practices under conditions of changing wind direction and release severity would always result in appropriate protective action recommendations to offsite authorities for geographical areas in the emergency planning zone where radiological risk to the public exists (that is, where protective action guides are exceeded), but also could result in recommendations to evacuate geographical areas where radiological risk is determined not to exist (that is, where protective guides are not exceeded).

Analysis. Licensee practices resulting in recommending to offsite authorities protective actions for the public in geographical areas of the emergency planning zone where valid dose assessment has not identified that protective action guides are projected to be exceeded was a performance deficiency, and it was within the licensee's ability to foresee and correct, and could have been prevented. The finding was more than minor because it was not similar to the examples of Manual Chapter 0612, Appendix E, and has the potential to impact public safety because unnecessary protective actions may expose members of the public to an unjustified risk. The finding was associated with the

emergency response organization attributes of 50.47(b) planning standards and training. The finding affects the emergency preparedness cornerstone objective because recommendations to offsite authorities to take protective actions in areas where protective action guides were not exceeded affects the offsite authority's ability to protect the health and safety of the public, and may have resulted in unnecessary risk to the public. This finding was evaluated using the emergency preparedness significance determination process and was determined to have very low safety significance (Green) because it was a failure to comply with NRC requirements, was associated with emergency preparedness planning standard 50.47(b)(10), was associated with a risk significant planning standard as defined in Manual Chapter 0609, Appendix B, Section 2.0, and was not a risk significant planning standard functional failure or a risk significant planning standard degraded function because appropriate protective action recommendations would be issued for all geographical areas of the plume phase emergency planning zone where protective action guides are exceeded. The finding was evaluated as not having a crosscutting aspect.

Enforcement. Title 10 of the Code of Federal Regulations, 50.47(b)(10) states, in part, that guidelines for the licensee's choice of protective actions during an emergency, consistent with federal guidance, are developed and in place. Section IV(B) of Part 50, Appendix E, requires, in part, that a licensee describe the basis for determining when and what type of protective measures should be considered outside the site boundary. Federal guidance for the choice of protective actions during an emergency is described in EPA-400-R-92-001. Section 1.4 of EPA-400-R-92-001 states that protective action guides are the approximate levels at which protective measures are justified. Section 2.3.1 of EPA-400-R-92-001 states that evacuation is seldom justified at projected radiation doses less than one rem of total effective dose equivalent.

Contrary to the above, the licensee did not develop and have in place guidelines for the choice of protective actions during an emergency that were consistent with federal guidance. The licensee's guidelines for extending initial General Emergency protective action recommendations under conditions of changing wind direction vectors were not consistent with EPA-400-R-92-001 guidance. Specifically, the licensee's process of automatically extending existing offsite protective action recommendations without evaluating dose assessment information did not provide justification for recommending protective actions in geographical areas where valid dose projections show federal protective action guides are not exceeded. Because this failure was of very low safety significance and has been entered into the licensee's corrective action system (Condition Report CR-WF3-2009-03256), this violation is being treated as a noncited violation, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000382/2009003-1, "Licensee Practices Result in Protective Action Recommendations for Areas Where Protective Action Guides Are Not Exceeded."

Cornerstone: Emergency Preparedness

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

a. Inspection Scope

The inspector performed an in-office review of Revision 37 to the Waterford 3 Steam Electric Station Emergency Plan submitted May 12, 2009. This revision added security threats to the bases of the four emergency classifications, revised the [offsite] Notification Message Form to characterize radiological releases as being below or above federally-approved operating limits, added detail about the functions of the Reactor Auxiliary Building instrumentation laboratory, increased the number of available voice communications channels from 5 to 23, increased the number of offsite emergency warning sirens from 72 to 73, revised definitions used in the emergency plan, updated station position titles and service vendors, and made minor editorial changes.

This revision was compared to its previous revision, to the criteria of NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, and to the standards in 10 CFR 50.47(b), to determine if the revision adequately implemented the requirements of 10 CFR 50.54(q). This review was not documented in a safety evaluation report and did not constitute approval of the licensee's changes; therefore, this revision is subject to future inspection.

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

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

.1 Data Submission Issue

a. Inspection Scope

The inspectors performed a review of the data submitted by the licensee for the first quarter 2009 performance indicators for any obvious inconsistencies prior to its public release in accordance with Inspection Manual Chapter 0608, "Performance Indicator Program."

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

b. Findings

No findings of significance were identified.

.2 Safety System Functional Failures

a. Inspection Scope

The inspectors sampled licensee submittals for the safety system functional failures performance indicator for the period from the first quarter 2008 through the first quarter 2009. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, and NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 50.73," definitions and guidance were used. The inspectors reviewed the licensee's operator narrative logs, operability assessments, maintenance rule records, maintenance work orders, issue reports, event reports, and NRC integrated inspection reports for the period of March 2008 through March 2009 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 safety system functional failures sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings of significance were identified.

.3 Mitigating Systems Performance Index - Emergency ac Power System

a. Inspection Scope

The inspectors sampled licensee submittals for the mitigating systems performance index - emergency ac power system performance indicator for the period from the first quarter 2008 through the first quarter 2009. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. The inspectors reviewed the licensee's operator narrative logs, mitigating systems performance index derivation reports, issue reports, event reports, and NRC integrated inspection reports for the period of March 2008 through March 2009 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 safety system functional failures sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings of significance were identified.

.4 Mitigating Systems Performance Index - High Pressure Injection Systems

a. Inspection Scope

The inspectors sampled licensee submittals for the mitigating systems performance index - high pressure injection systems performance indicator for the period from the first quarter 2008 through the first quarter 2009. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. 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 March 2008 through March 2009 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 safety system functional failures sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings of significance were identified.

.5 Drill/Exercise Performance (EP01)

a. Inspection Scope

The inspectors sampled licensee submittals for the Drill and Exercise Performance, performance indicator for the period from July 2008 through March 2009. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. The inspectors 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 inspectors 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, performance during the 2007 biennial exercise, and performance during other drills. 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 of significance were identified.

.6 Emergency Response Organization Drill Participation (EP02)

a. Inspection Scope

The inspectors sampled licensee submittals for the Emergency Response Organization Drill Participation performance indicator for the period from July 2008 through March 2009. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. The inspectors 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 inspectors 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, twelve selected emergency responder training records, and a sample of eight exercise participation records. 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 of significance were identified.

.7 Alert and Notification System (EP03)

a. Inspection Scope

The inspectors sampled licensee submittals for the Alert and Notification System performance indicator for the period from July 2008 through March 2009. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. The inspectors 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 inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator and the results of bimonthly alert notification system operability tests. 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 of significance were identified.

40A2 Identification and Resolution of Problems (71152)

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

.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. 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 of significance 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 of significance were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors focused their review on repetitive equipment issues, but also considered the results of daily corrective action item screening discussed in Section 4OA2.2, above, licensee trending efforts, and licensee human performance results. The inspectors nominally considered the period from October 2008 through June 2009, although some examples expanded beyond those dates where the scope of the trend warranted.

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

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

b. Findings

Introduction. The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI (Corrective Action), for the failure to promptly correct conditions adverse to quality. The licensee had documented several conditions adverse to quality and then transferred the concerns to other condition reports. Then, the licensee closed those condition reports without addressing the concerns. Identified conditions included (1) the Train B 125 Vac discharge test data indicated a loose battery connection but the battery was permitted to pass the test anyway; (2) the root cause determination for the failed battery was focused on the statements of one person and failed to address other information; (3) the root cause determination failed to address conflicting information; and (4) the root cause determination failed to properly address other potential causes for the inoperable battery, such as tampering.

Description. On December 17, 2008, the NRC described to the licensee several concerns with a root cause analysis for a significant condition adverse to quality (Train B 125 Vdc battery failure identified on September 2, 2008). Specifically, the inspectors identified that (1) the root cause determination for the failed battery was focused on the statements of one person and failed to address other information; (2) the root cause determination failed to address conflicting information from different individuals; and (3) the root cause determination failed to properly address other potential causes for the inoperable battery, such as tampering. These concerns were entered into the corrective action process as Condition Report CR-WF3-2008-5852. This condition report was closed out to Condition Report CR-WF3-2009-4179, Corrective Action CA-54, which was intended to correct the conditions. However, this condition report was subsequently closed without addressing the concerns.

On January 6, 2009, the licensee identified that the Train B 125 Vac discharge test data (May 27, 2008) indicated a loose battery connection but the battery was permitted to pass the test anyway. Several months later, the licensee found that the loose connection had rendered the battery inoperable. That condition was documented in Condition Report CR-WF3-2009-0069. This condition report was subsequently closed out to Condition Report CR-WF3-2009-4179, Corrective Action CA-55, which was intended to address the condition. However, the corrective action was closed without addressing the concern.

NOTE: Additional NRC followup to the failed station battery will be documented in NRC Inspection Report 05000382/2009008.

On February 9, 2009, the inspectors identified that the licensee had closed Condition Report CR-WF3-2008-4179 but had not corrected the conditions that were transferred to the document from Condition Reports CR-WF3-2008-5852 and CR-WF3-2009-0069. The licensee entered this new finding into their corrective action process as Condition Report CR-WF3-2009-0697.

To determine the extent of condition, the licensee reviewed the corrective actions for Condition Report CR-WF3-2008-4179 and determined that an additional seven corrective actions had been closed out without fully being answered. These additional examples were entered into the licensee's corrective action program as Condition Report CR-WF3-2009-1177. The licensee characterized the problem as a significant condition adverse to quality. Subsequently, the licensee's extent of condition review identified an additional 30 examples where corrective actions were inappropriately closed without correcting the identified conditions in the past 14 months.

Analysis. The failure to correct conditions adverse to quality was a performance deficiency. The finding was more than minor because, if left uncorrected, it would become a more significant safety concern. For example, the failure to include acceptance criteria in the battery discharge test (intended to identify and correct loose battery connections) could result in another inoperable 125 Vdc battery for an extended period. The inspectors evaluated the finding using Inspection Manual Chapter 0609, Significance Determination Process, Phase 1 Screening Worksheet and determined that the finding was of very low risk significance because it did not result in another battery becoming inoperable or nonfunctional. This finding had a crosscutting aspect in the area of Human Performance (Work Practices Component) because plant personnel failed to effectively use human error prevention techniques, such as self and peer checking, when transferring concerns between condition reports [H.4(a)].

Enforcement. In accordance with 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures be established to assure that conditions adverse to quality are promptly identified and corrected. On December 17, 2008, and on January 6, 2009, four conditions adverse to quality were identified by the inspectors and the licensee, as noted in the body of this report. Contrary to the above, the licensee failed to correct the conditions adverse to quality, in that the concerns were transferred to another condition report and then closed without action. Because this violation was of very low safety significance and was entered in the corrective action program as Condition Report CR-WF3-2009-0697, this violation is being treated as a noncited violation, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000382/2009002-02, "Failure to Correct Several Conditions Adverse to Quality."

.4 Selected Issue Follow-up Inspection

a. Inspection Scope

During a review of items entered in the licensee's corrective action program, the inspectors reviewed operator workarounds and burdens and conducted a review of conditions surrounding the premature failure of the Train B 125 Vdc station battery. The inspectors considered the following during the review of the licensee's actions: (1) complete and accurate identification of problems in a timely manner; (2) evaluation and disposition of operability/reportability issues; (3) consideration of extent of condition, generic implications, common cause, and previous occurrences; (4) classification and prioritization of the resolution of the problem; (5) identification of root and contributing

causes of the problem; (6) identification of corrective actions; and (7) completion of corrective actions in a timely manner.

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

b. Findings

Introduction. The inspectors identified a green noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI (Corrective Actions), because the licensee failed to identify the cause for a significant condition adverse to quality. The Train B 125 Vdc battery bank failed to pass a technical specification surveillance required discharge test during a Spring 2008 outage. The root cause procedure required that the licensee sequester the battery in a controlled area so that vital information related to the failure could be obtained. However, the licensee disposed of the battery instead. When questions arose concerning the specified failure cause (impurities in the battery materials), the licensee was unable to provide objective evidence to support the conclusion. Had the licensee obtained objective evidence to support their conclusion that impurities caused the battery failure, a 10 CFR Part 21 report may have been required. The licensee replaced the battery and planned to replace similar batteries in the other two trains during the next refueling outage.

Description. On May 16, 2008, during a refueling outage, the licensee conducted a technical specification required performance test of the safety-related Train B, 125 Vdc station battery. The licensee determined that the battery capacity was 86.25 percent from this test. This was an unexpected result, as the licensee had predicted a capacity near 100 percent.

The licensee consulted with the battery vendor (C&D). The vendor advised the licensee that the licensee's testing method may be inappropriate and suggested changes. The licensee performed a second test of the battery on May 22 and noted that the capacity was 71.6 percent. Technical Specification Surveillance Requirement 4.8.2.1.d required that the battery capacity be verified to be at least 80 percent of the manufacturers rating every 60 months, when subjected to a discharge test. The failure to pass the technical specification surveillance requirement rendered the battery inoperable. The battery had a vendor specified 20- year service life but had only lasted a little more than 15 years. The licensee promptly procured a new battery and replaced the failed Train B battery. The only extent of condition review that the licensee performed was to verify that the other station batteries were from different manufacturing lots. At the time of the surveillance failure, the plant was in an outage and was relying on the other station batteries to meet the requirements for the technical specification required minimum equipment.

In response to the battery failure, the licensee performed a root cause analysis, as documented in Condition Report WF3-2008-02431, dated August 12, 2008. The licensee considered the battery failure a "significant condition adverse to quality." The licensee concluded that the battery had most likely failed the test because of impurities

introduced during manufacturing. The licensee reached this conclusion based on the elimination of other potential causes that they had considered. The inspectors determined that the licensee did not obtain vendor assistance or input. The licensee did not perform testing to verify that impurities were actually present in the battery. Then, the licensee disposed of the battery. No cells from the defective battery train were returned to the vendor for analysis.

On July 30, 2009, licensee senior management decided to reassess the root cause because they no longer believed that it involved a manufacturing defect. The inspectors identified that the licensee had failed to meet the requirements of 10 CFR Part 50, Appendix B, Criterion XVI (Corrective Actions), for the battery failure. This requirement specifies, in part, that the cause of significant conditions adverse to quality be determined and corrective actions taken to preclude repetition. In this instance, since the licensee disposed of the battery prior to performing a thorough analysis of the failed components, the licensee could not adequately determine the cause.

The inspectors also noted that the licensee had failed to follow their root cause procedure concerning analysis of failed components. Corporate Procedure EN-LI-118, "Root Cause Analysis Process," Revision 7, discusses actions to be performed during the course of performing a root cause analysis. Section 5, step [3](a)(3) required the licensee to "initiate physical evidence collection" and "move items to a controlled area to prevent tampering or loss." For the failed battery, the licensee did not complete these actions.

Additionally, had the licensee conclusively determined that battery failure was caused by impurities introduced during the manufacturing process, a 10 CFR Part 21, "Reporting of Defects and Noncompliance," may have been required. This regulation requires licensees and vendors to notify the NRC of defects in safety-related components that could involve a substantial safety hazard. If the failure did involve a defect, the inspectors believed that a subsafety hazard would exist due to the rapid degradation that occurred within a single surveillane interval making the failure undetectable. The NRC would then notify licensees that could be affected by the condition so that they could take appropriate corrective measures. In this instance, however, since the cause of the failure was not actually known, the NRC could not evaluate the condition or further consider a generic communication.

Analysis. The failure to identify the cause for a significant condition adverse to quality was a performance deficiency. The finding was more than minor because, if left uncorrected, it could lead to a more significant safety concern. Specifically, since the cause of the battery failure was not definitively found, the licensee may not have taken corrective actions to prevent other battery failures. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Screening Worksheet, the finding was of very low risk significance because it did not actually cause the loss of operability or functionality of another 125 Vdc battery at the time of the inspection. This finding had a crosscutting aspect in the area of Problem Identification and Resolution (Corrective Action Program Component) because the licensee failed to thoroughly evaluate the need to keep the battery prior to disposal [P.1(c)].

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion XVI (Corrective Actions), requires, in part, that “Measures shall be established to assure that conditions adverse to quality . . . are promptly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition.” Contrary to the above, as of July 7, 2009, the licensee had identified a significant condition adverse to quality (125 Vdc battery train failure on May 22, 2008) but had not determined the cause of the condition and therefore could not specify actions to preclude repetition. Because this violation was of very low safety significance and was entered in the corrective action program as Condition Report CR-WF3-2009-2846, this violation is being treated as a noncited violation, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000382/2009003-03, “Failure to Determine the Cause of a 125 Vdc Battery Failure.”

40A5 Other Activities

.1 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period, the inspectors performed observations of security force personnel and activities to ensure that the activities were consistent with Waterford Steam Electric Station security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours.

These quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors’ normal plant status review and inspection activities.

b. Findings

No findings of significance were identified.

40A6 Meetings

Exit Meeting Summary

On May 27, 2009, the inspector conducted a telephonic exit meeting to present the results of the in-office inspection of changes to the licensee’s emergency plan to Mr. J. Lewis, Manager, Emergency Preparedness, and other members of the licensee’s staff. The licensee acknowledged the issues presented.

On June 26, 2009, the inspectors presented the results of the inspection of the onsite emergency preparedness exercise to Mr. J. Kowalewski, Site Vice President, 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 or sensitive. All identified proprietary or sensitive information examined during the inspection had been returned to the licensee.

On June 30 and July 1, 2009, the inspectors discussed the technical and regulatory aspects of the identified emergency preparedness noncited violation with Mr. J. Lewis, Manager, Emergency Preparedness.

On July 20, 2009, the inspectors presented the inspection results to Mr. Joe Kowalewski, Site Vice-President, and other members of the licensee staff. A followup telephonic exit was conducted on August 10 with Mr. Joe Kowalewski and other members of the licensee staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

SUPPLEMENTAL INFORMATION
KEY POINTS OF CONTACT

Licensee Personnel

M. Adams, Supervisor, System Engineering
S. Anders, Manager, Plant Security
B. Briner, Technical Specialist IV, Component Engineering
K. Christian, Director, Nuclear Safety Assurance
K. Cook, Manager, Operations
C. Fugate, Assistant Manager, Operations
M. Haydel, Supervisor, Programs and Components
J. Kowalewski, Vice President of Operations
J. Lewis, Manager, Emergency Preparedness
B. Lindsey, Manager, Maintenance
M. Mason, Senior Licensing Specialist, Licensing
W. McKinney, Manager, Corrective Action and Assessments
R. Murillo, Manager, Licensing
K. Nicholas, Director, Engineering
R. Putnam, Manager, Programs and Components
J. Williams, Senior Licensing Specialist, Licensing

LIST OF ITEMS OPENED AND CLOSED

Opened and Closed

05000382/2009003-01	NCV	Licensee Practices Result in Protective Action Recommendations for Areas Where Protective Action Guides are Not Exceeded.(Section 1EP1)
05000382/2009003-02	NCV	Failure to Correct Several Conditions Adverse to Quality (Section 4OA2)
05000382/2009003-03	NCV	Failure to Determine the Cause of a 125 Vdc Battery Failure (Section 4OA2)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

CONDITION REPORTS

CR-WF3-2009-2229	CR-WF3-2009-2305	CR-WF3-2009-2306	CR-WF3-2009-2961
CR-WF3-2009-2413	CR-WF3-2009-2767	CR-WF3-2009-2307	CR-WF3-2009-2118
CR-WF3-2009-2414	CR-WF3-2009-2938	CR-WF3-2009-2326	CR-WF3-2009-0687
CR-WF3-2009-2415	CR-WF3-2009-2651	CR-WF3-2009-2343	CR-WF3-2009-0155
CR-WF3-2009-2440			

WORK ORDERS

51798176	51701184	194505	51088942
51697577	51680597	167665	

PROCEDURES/DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
ENS-PL-159	Summer Reliability	
OP-009-002	Emergency Diesel Generator	310
OP-006-001	Plant Distribution	305
OP-006-008	Transformer Operation	301
OP-006-009	Electrical Bus Outages	4
OP-006-005	Inverters and Distribution	302
OP-902-003	Loss of Offsite Power	6

Section 1R04: Equipment Alignment

WORK ORDERS

52021780	34838
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PROCEDURES/DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OP-009-002	Emergency Diesel Generator	308
OP-903-121	Safety Systems Quarterly IST Valve Tests	9
OP-009-001	Containment Spray	301

1R05: Fire Protection

PROCEDURES/DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
UNT-005-013	Fire Protection Program	10
OP-009-004	Fire Protecton	305
MM-004-424	Building fire Hose Station Inspection and Hose Replacement	10
MM-007-010	Fire Extinguisher Inspection and Extinguisher Replacement	302
FP-001-014	Duties of a Fire Watch	14

FP-001-015	Fire Protection Impairments	302
DBD-018	Appendix R/fire Protection	

Section 1R06: Flood Protection Measures

NUMBER	TITLE	REVISION
OP-901-521	Severe Weather and Flooding	4
OP-902-008	Functional Recovery Procedure	15
FSAR Section 3.6A.6	Flooding Analysis	14-A
FSAR Section 3.6A.6.4.1	Reactor Auxiliary Building - High Energy Pipe Break	14-A
DWG - G173 Sheet 2	Sump Pump System - Reactor Auxiliary Bldg.	5
FSAR Figure 9.3-5	Reactor Auxiliary Building Drainage Sys.	4

Section 1R11: Licensed Operator Requalification Program

PROCEDURES/DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
E-68	Simulator Scenario	3
OP-901-202	Steam Generator Tube Leakage or High Activity	9
OP-901-212	Rapid Plant Power Reduction	3
OP-902-000	Standard Post Trip Actions	10
OP-902-008	Safety Function Recovery Procedure	15

Section 1R12: Maintenance Effectiveness

CONDITION REPORTS

CR-WF3-2009-2662	CR-WF3-2009-2384	CR-WF3-2009-2356	CR-WF3-2009-2355
CR-WF3-2009-2245	CR-WF3-2009-2223	CR-WF3-2009-2092	CR-WF3-2009-1356
CR-WF3-2009-1284	CR-WF3-2009-0205	CR-WF3-2009-0017	CR-WF3-2009-0016
CR-WF3-2008-5905	CR-WF3-2008-5669	CR-WF3-2008-4215	CR-WF3-2008-3210
CR-WF3-2008-3106	CR-WF3-2008-2957	CR-WF3-2008-2833	CR-WF3-2008-2756
CR-WF3-2008-2467	CR-WF3-2008-1315	CR-WF3-2008-0676	CR-WF3-2008-0613
CR-WF3-2007-0762	CR-WF3-2008-0037	CR-WF3-2008-5786	CR-WF3-2009-2321
CR-WF3-2007-0935	CR-WF3-2008-2352	CR-WF3-2009-0785	CR-WF3-2009-2337
CR-WF3-2007-1666	CR-WF3-2008-5115	CR-WF3-2009-1972	CR-WF3-2009-2343
CR-WF3-2007-2469	CR-WF3-2008-5258	CR-WF3-2009-2306	CR-WF3-2009-2861
CR-WF3-2007-4448	CR-WF3-2007-4280	CR-WF3-2007-4281	CR-WF3-2007-2610

WORK ORDERS

117089	155100	172152	51562560
94701	94702	113371	132935
00085241	00140811	95498	51097820

PROCEDURES/DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
DC-121	Maintenance Rule	1
NUMARC 93-01	Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants	3

Section 1R13: Maintenance Risk Assessment and Emergency Work Controls

CONDITION REPORTS

CR-WF3-2009-1706	CR-WF3-2009-1718	CR-WF3-2009-3023	CR-WF3-2009-2807
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WORK ORDERS

00190937	186497	160282	51657973
186508	185547	185560	184949
173008	136785	116977	197599
197692			

PROCEDURES/DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
EN-WEM-101	On-Line Work Management Process	1
OI-037-000	Operations Risk Assessment Guideline	2
OP-006-003	125 Vdc Electric Distribution	301
ME-007-002	Molded Case Circuit Breakers	15
ME-007-008	Motor-Operated Valves	16
ME-007-045	Motor-Operated Valve Motor Power Monitor	2
UNT-001-015	Equipment QAualification Program	7
ME-004-809	Low/Medium voltage Power & Control Cable/Conductor Terminations and splices	302
ME-007-047	VOTES Testing of Motor-Operated Valves	5
OP-009-008	Safety Injection System	25
OP-009-001	Containment spray	301
MI-005-464	Plant Protection System Power Supply Calibration	303
OP-009-007	Plant Protection System	9
ME-007-005	Time Delay Relay Setting Check Adjustment	13

ME-004-330	4KV Induction Motor Maintenance	300
ME-004-211	Station Battery (Quarterly)	7
ME-002-210	Station Battery Bank & Charger (Quarterly)	14

Section 1R15: Operability Evaluations

CONDITION REPORTS

CR-WF3-2009-2189	CR-WF3-2008-5867	CR-WF3-2008-5618	CR-WF3-2009-2253
CR-WF3-2009-2212	CR-WF3-2009-2226	CR-WF3-2009-2229	CR-WF3-2009-2253

WORK ORDERS

51646383	194110	164712	51701184
51695212	52033543	194505	

PROCEDURES/DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OP-903-026	Emergency Core Cooling System Valve Lineup Verification	17
OP-009-008	Safety Injection	25
MM-007-038	Valves HVC-101 and HVC-102 Leak Test	300
OP-009-002	Emergency Diesel Generator	308
OP-903-068	Emergency Diesel Generator Operability and Subgroup Relay Operability Verification	302
OP-903-15	Train A Integrated Emergency Diesel Generator / Engineering Safety Features Test	10

Section 1R19: Postmaintenance Testing

CONDITION REPORTS

CR-WF3-2009-1706	CR-WF3-2009-1718	CR-WF3-2008-5786	CR-WF3-2008-4765
CR-WF3-2008-4304	CR-WF3-2008-4304	CR-WF3-2008-4765	CR-WF3-2009-2253
CR-WF3-2009-2212	CR-WF3-2009-2226	CR-WF3-2009-2229	CR-WF3-2009-225

WORK ORDERS

00190937	180143	46961	168290
173009	516557973	186508	185547
185560	184946	173008	52022649
52030855	52022009	51646383	194110
164712	51701184	51695212	52033543
34838	170228	52033835	52036094
194505	52034706	52031652	191225
197180			

PROCEDURES/DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
MI-005-464	Plant Protection System Power Supply Calibration	303
OP-009-007	Plant Protection System	9
MI-013-522	PPS Ground Detection Test	5
MI-005-293	Retest Procedure for Power Supplies	2
OP-903-107	Plant Protection System Channel A&B&C&D Functional Test	303
ME-007-005	Time Delay Relay Setting Check Adjustment	13
OP-009-008	Safety Injection System	25
OP-903-030	Safety Injection Pump Operability Verification	15
OP-009-008	Safety Injection System	25
ME-007-002	Molded Case Circuit Breakers	15
ME-007-005	Time Delay Relay Setting Check Adjustment	13
ME-007-008	Motor Operated Valves	16
ME-007-045	Motor-Operated Valve Motor Power Monitor	2
ME-004-809	Low/Medium Voltage Power & Control Cable/Conductor Terminations and Splices	302
ME-007-057	MCE/EMAX Data Acquisition	4
ME-004-330	4KV Induction Motor Maintenance	300
MM-007-038	Valves HVC-101 and HVC-102 Leak Test	300
OP-009-002	Emergency Diesel Generator	308
OP-903-068	Emergency Diesel Generator Operability and Subgroup Relay Operability Verification	302
OP-903-115	Train A Integrated Emergency Diesel Generator / Engineering Safety Features Test	10
OP-100-002	Leak Reduction	300
OP-903-003	Charging Pump Operability Check	301
OP-002-005	Chemical and Volume Control	28
OP-903-035	Containment Spray Pump Operability Check	13
OP-009-001	Containment Spray	301
MM-006-021	Charging Pump Maintenance	9

Section 1R22: Surveillance TestingWORK ORDERS

52033543	51794147	51797247	51695212
51795535	52034706	52031652	

PROCEDURES/DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OP-903-030	Safety Injection Pump Operability Verification	15
OP-009-008	Safety Injection System	25
OP-903-118	Primary Auxiliaries Quarterly IST Valve Test	16
OP-002-003	Component Cooling Water System	305
OP-009-003	Emergency Feedwater	301
OP-903-046	Emergency Feed Pump Operability Check	304
OP-002-005	Chemical and Volume Control	28
OP-100-002	Leak Reduction	300
OP-009-002	Emergency Diesel Generator	308
OP-903-068	Emergency Diesel Generator Operability and Subgroup Relay Operability Verification	302
OP-903-115	Train A Integrated Emergency Diesel Generator / Engineering Safety Features Test,	10

Section 1EP1: Exercise EvaluationPROCEDURES/DOCUMENTS

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
EP-1-001	Recognition and Classification of Emergencies	22
EP-1-020	Actions for Alert	301
EP-1-030	Actions for Site Emergency	25-2
EP-1-040	Actions for General Emergency	26-2
EP-2-010	Notifications and Communications	303
EP-2-015	Emergency Responder Activation	8-1
EP-2-030	Emergency Radiation Exposure Guidelines and Controls	9
EP-2-031	In-Plant Radiation Control during Emergencies	7-2
EP-2-033	KI Administration	301
EP-2-034	Onsite Surveys during Emergencies	5-1
EP-2-050	Offsite Dose Assessment	303

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION / DATE</u>
EP-2-052	Protective Action Guidelines	20
EP-2-071	Site Protective Measures	18-2
EP-2-100	TSC Activation, Operation, and Deactivation	33
EP-2-101	OSC Activation, Operation, and Deactivation	302
EP-2-102	EOF Activation, Operation, and Deactivation	301
EP-2-130	Emergency Team Assignments	22
2007-03	2007 Green Team Site Drill	February 18, 2008
2007-04	2007 Green Team Biennial Exercise	March 10, 2008
2008-01	2008 Red Team Site Drill	August 3, 2008
2008-03	2008 Blue Team Site Drill	January 8, 2009
2008-04	2008 Orange Team Site Drill	March 29, 2009
2009-01	2009 Green Team Site Drill	June 19, 2009
2009-02	2009 Blue Team Site Drill	June 21, 2009
WLP-EP-EDIR	Emergency Preparedness Lesson Plan: Emergency Director	7
WLP-EP-EC	Emergency Preparedness Lesson Plan: Emergency Coordinator	6
WLP-EP-RPC	Emergency Preparedness Lesson Plan: Radiation Protection Coordinator	3
WLP-OPS-EP02	Operations Lesson Plan: Emergency Plan Training for Control Room Personnel, Training Personnel, and Operations Coordinators	8

CORRECTIVE ACTION DOCUMENTS

2009-01101 2009-01184

Section 40A1: Performance Indicator Verification

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
NEI 99-02	Regulatory Assessment Performance Indicator Guideline	5

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
EP-1-001	Recognition and Classification of Emergencies	22
EP-2-010	Notifications and Communications	303
EP-2-052	Protective Action Guidelines	20

EP-3-070	Emergency Communications Systems Routine Testing	301
EN-EP-201	Emergency Planning Performance Indicators	8
EN-LI-114	Performance Indicator Process	4
EPP-422	Siren and Helicopter Warning System Maintenance	4
EPP-424	Siren Testing and Siren Administrative Controls	12

MISCELLANEOUS DOCUMENTS

<u>TITLE</u>	<u>REVISION</u>
Water3 Steam Electric Station Emergency Plan	37

Section 40A2: Identification and Resolution of Problems

PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>	<u>REVISION</u>
OI-002-000	Annunciator, Control Room Instrumentation and Workaround Status Control	301
OI-034-000	Work Management Center	18
EN-LI-102	Corrective Action Process	11
ME-003-240	Battery Performance Test	13
EN-LI-118	Root Cause Analysis Process	7

CONDITION REPORTS

CR-WF3-2009-0069	CR-WF3-2009-1177	CR-WF3-2009-0697	CR-WF3-2008-4179
CR-WF3-2008-2431	CR-WF3-2008-2515	CR-WF3-2008-5852	CR-WF3-2009-2846

WORK ORDERS

155714	169263	168928	157646
156715	148345	152819	