



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION III
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LISLE, IL 60532-4352

January 28, 2013

Mr. Michael J. Pacilio
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President and Chief Nuclear Officer, Exelon Nuclear
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Warrenville, IL 60555

**SUBJECT: CLINTON POWER STATION - NRC INTEGRATED INSPECTION REPORT
05000461/2012-005**

Dear Mr. Pacilio:

On December 31, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Clinton Power Station. The enclosed report documents the inspection results, which were discussed on January 17, 2012, with Mr. W. Noll and other members of your staff.

This 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.

Based on the results of this inspection, the NRC has determined that one inspector-identified Severity Level IV violation of NRC requirements occurred. The associated performance issue was evaluated under the risk significance determination process as having very low safety significance. In addition, two self-revealed findings of very low safety significance were identified. One of these findings was determined to involve a violation of NRC requirements.

Because of the very low safety significance and because they were entered into your corrective action program, the NRC is treating the above inspector-identified and self-revealed violations as Non-Cited Violations (NCVs) consistent with Section 2.3.2 of the NRC Enforcement Policy. If you contest any NCV, 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 III; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at Clinton Power Station. In addition, 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 III, and the NRC Resident Inspector at Clinton Power Station.

M. Pacilio

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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 made 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/

Robert J. Orlikowski, Acting Branch Chief
Branch 1
Division of Reactor Projects

Docket No. 50-461
License No. NPF-62

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-461
License No: NPF-62

Report No: 05000461/2012005

Licensee: Exelon Generation Company, LLC

Facility: Clinton Power Station, Unit 1

Location: Clinton, IL

Dates: October 1 through December 31, 2012

Inspectors: B. Kemker, Senior Resident Inspector
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Enclosure

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SUMMARY OF FINDINGS

IR 05000461/2012-005; 10/01/12 – 12/31/12; Clinton Power Station, Unit 1; Maintenance Effectiveness, Operability Evaluations, Identification and Resolution of Problems.

This report covers a three-month period of inspection by the resident inspectors and announced baseline inspections by regional inspectors. One Severity Level IV Non-Cited Violation and two Green findings, one of which had an associated Non-Cited Violation, were identified. The significance of inspection findings are indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using IMC 0609, "Significance Determination Process" dated June 2, 2011. Cross-cutting aspects are determined using IMC 0310, "Components Within the Cross Cutting Areas" dated October 28, 2011. 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 and Self-Revealed Findings

Cornerstone: Initiating Events

- Green. A finding of very low safety significance was self-revealed when the emergency reserve auxiliary transformer (ERAT) tripped during troubleshooting activities to isolate a direct current system ground following heavy rainfall. The ERAT trip occurred due to the presence of a latent design error identified on seal-in relays in the ERAT's control circuitry and the licensee's failure to adequately evaluate and correct it during its extent of condition review of the problem after it was identified in September 2002. The licensee restored the ERAT to service and implemented a modification to correct the latent design problem. Because the ERAT is not safety-related, no violation of regulatory requirements was identified.

The finding was of more than minor safety significance because it was sufficiently similar to several examples in Inspection Manual Chapter 0612, "Power Reactor Inspection Reports," Appendix E, "Examples of Minor Issues," wherein licensees failed to adequately correct conditions adverse to quality and the consequences had some safety impact. The performance deficiency was also associated with the Equipment Performance attribute and adversely affected the Initiating Events 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, when the ERAT tripped safety related 4160 volt bus 1A1, which had been powered by the ERAT, momentarily lost power. With the momentary loss of power several plant safety systems were affected including a loss of secondary containment differential pressure. The finding was a licensee performance deficiency of very low safety significance because it: (1) did not involve a loss-of-coolant accident initiator; (2) did not cause a reactor trip AND the loss of mitigation equipment; (3) did not involve the complete or partial loss of a support system that contributes to the likelihood of, or cause, an initiating event AND affect mitigation equipment; and (4) did not increase the frequency of a fire or internal flooding initiating event. While the finding did involve a partial loss of a support system

(i.e., offsite power) that contributes to the likelihood of an initiating event, mitigation equipment was not adversely affected by the momentary loss of power. The inspectors concluded that because the licensee's missed opportunity to correct the latent design error occurred in 2002 and no other more recent opportunities reasonably existed to identify and correct the problem, this issue would not be reflective of current licensee performance and no cross-cutting aspect was identified. (Section 4OA2.2.b.1)

Cornerstone: Mitigating Systems

- Severity Level IV. The inspectors identified a finding of very low safety significance with an associated Severity Level IV Non-Cited Violation of the NRC's reporting requirements in 10 CFR 50.73, "Licensee Event Report System." The licensee failed to submit a required Licensee Event Report (LER) within 60 days after the discovery of an event that was reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition which was prohibited by the plant's Technical Specifications (TS) and 10 CFR 50.73(a)(2)(v)(B) as a condition that could have prevented the fulfillment of a safety function. The condition involved an inoperable diesel generator (DG) for longer than the TS completion time for restoration. The licensee subsequently submitted the required LER.

Because this violation of the NRC's reporting requirements affected the NRC's ability to perform its regulatory function, the inspectors evaluated the violation using the traditional enforcement process in accordance with the NRC Enforcement Policy and assessed the significance of the underlying issue using the Significance Determination Process. The finding was of more than minor significance because the NRC relies on licensees to identify and report conditions or events meeting the criteria specified in the TS and the regulations in order to perform its regulatory function and, therefore if left uncorrected it could lead to a more significant safety concern. The inspectors previously determined that the underlying issue (i.e., the failure to correctly assemble a DG ventilation system damper that resulted in an inoperable DG) was a finding of very low safety significance during a detailed risk evaluation. Consistent with the guidance in Section 6.9, Paragraph d.9, of the NRC Enforcement Policy, the violation associated with this finding was determined to be a Severity Level IV Violation. This finding affected the cross-cutting area of human performance. Specifically, the licensee's decision making process while evaluating the reportability of the condition with respect to the reporting requirements in 10 CFR 50.73 was inadequate. (IMC 0310 H.1(a)) (Section 1R15.b.1)

Cornerstone: Barrier Integrity

- Green. A finding of very low safety significance with an associated Non-Cited Violation of TS 5.4.1.a. was self-revealed when the age-related failure of Standby Gas Treatment (VG) system relay 0UAY-VG506D caused the removal of VG Train A electric heater 0VG04AA from operation, an entry into TS 3.6.4.3 due to the inoperability of VG Train A, and an unplanned on-line plant risk condition increase from Green to Yellow. The relay failure occurred due to the licensee's failure to perform any replacement preventive maintenance on the component throughout the history of plant operation. During two separate independent reviews performed by the licensee on July 15, 2011, and on August 24, 2011, the licensee failed to correctly classify the component in accordance with its preventive maintenance procedure. This resulted in no replacement maintenance activity ever being performed for the relay and its eventual failure on August 22, 2012. The licensee initiated corrective actions to replace the relay and put in place the appropriate preventive maintenance actions.

The finding was of more than minor safety significance because it was sufficiently similar to several examples in Inspection Manual Chapter 0612, "Power Reactor Inspection Reports," Appendix E, "Examples of Minor Issues," wherein licensees failed to adequately implement procedural requirements and the consequences had some safety impact. The performance deficiency was also associated with the SSC [Systems, Structures, and Components] and Barrier Performance attribute and adversely affected the Barrier Integrity Cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the age-related failure of 0UAY-VG506D on August 22, 2012, rendered VG Train A inoperable and caused an unplanned increase in the plant's on-line risk condition from Green to Yellow. The finding was a licensee performance deficiency of very low safety significance because it only represented a degradation of the radiological barrier function provided for the Auxiliary Building and the Fuel Building and was not a complete loss of the barrier function provided by the VG system since VG Train B remained operable. This finding affected the cross-cutting area of human performance. Specifically, in the area of work control, the licensee did not appropriately coordinate work activities by incorporating actions to plan work activities to support long-term equipment reliability by scheduling maintenance as more preventive than reactive. (IMC 0310 H.3(b)) (Section 1R12.1.b.1)

B. Licensee-Identified Violations

No violations of significance were identified.

REPORT DETAILS

Summary of Plant Status

The unit was operated at or near full power during the inspection period with the following exception:

- On December 16, 2012, the licensee reduced power to about 75 percent to perform control rod sequence exchange, control rod scram time testing, and main turbine control/stop/intermediate valve and main steam isolation valve testing. The unit was returned to full power the same day.

1. **REACTOR SAFETY**

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Winter Seasonal Readiness Preparations

a. Inspection Scope

The inspectors conducted a review of the licensee's preparations for winter conditions to verify that the plant's design features and implementation of procedures were sufficient to protect mitigating systems from the effects of adverse weather. Documentation for selected risk-significant systems was reviewed to ensure that these systems would remain functional when challenged by inclement weather. 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 Updated Final Safety Analysis Report (UFSAR) and performance requirements for systems selected for inspection, and verified that operator actions were appropriate as specified by plant specific procedures. Cold weather protection, such as heat tracing and area heaters, was verified to be in operation where applicable.

In addition, the inspectors verified that adverse weather protection problems were entered into the licensee's corrective action program with the appropriate characterization and significance. Selected action requests were reviewed to verify that corrective actions were appropriate and implemented as scheduled.

The inspectors' reviews focused specifically on the following plant systems due to their risk significance or susceptibility to cold weather issues:

- Trace Heat System,
- Circulating Water System, and
- Shutdown Service Water System.

This inspection constitutes one winter seasonal readiness preparations sample as defined in Inspection Procedure (IP) 71111.01.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Quarterly Partial System Walkdowns (71111.04Q)

a. Inspection Scope

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

- Reactor Core Isolation Cooling (RCIC) System (single train risk significant system),
- High Pressure Core Spray System (single train risk significant system), and
- Standby Gas Treatment (VG) Train B during maintenance on VG Train A.

The inspectors selected these systems based on their risk significance relative to the Reactor Safety Cornerstones. The inspectors reviewed operating procedures, system diagrams, Technical Specification (TS) requirements, and the impact of ongoing work activities on redundant trains of equipment. The inspectors verified that conditions did not exist that could have rendered the systems incapable of performing their intended functions. The inspectors also walked down accessible portions of the systems to verify system components were aligned correctly and available as necessary.

In addition, the inspectors verified that equipment alignment problems were entered into the licensee's corrective action program with the appropriate characterization and significance. Selected action requests were reviewed to verify that corrective actions were appropriate and implemented as scheduled.

This inspection constituted three partial system walkdown inspection samples as defined in IP 71111.04.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

The inspectors performed fire protection tours in the following plant areas:

- Fire Zone A-2o, Containment Electrical Penetration (East) Area – Elevation 781'0";
- Fire Zone F-1e, Equipment Drain Tank Room - Elevation 712'0";
- Fire Zone F-1f, Equipment Drain Pump Room - Elevation 712'0"; and
- Fire Zone R-1o, Radwaste Operations Center - Elevation 737'0".

The inspectors verified that transient combustibles and ignition sources were appropriately controlled and assessed the material condition of fire suppression systems, manual firefighting equipment, smoke detection systems, fire barriers and emergency lighting units. 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; that the licensee's fire plan was in alignment with actual conditions; and that fire doors, dampers, and penetration seals appeared to be in satisfactory condition.

In addition, the inspectors verified that fire protection related problems were entered into the licensee's corrective action program with the appropriate characterization and significance. Selected action requests were reviewed to verify that corrective actions were appropriate and implemented as scheduled.

This inspection constituted four quarterly fire protection inspection samples as defined in IP 71111.05AQ.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Regualification Program (71111.11)

.1 Resident Inspector Quarterly Review of Licensed Operator Regualification (71111.11Q)

a. Inspection Scope

The inspectors observed licensed operators during simulator training on October 31, 2012. The inspectors assessed the operators' response to the simulated events focusing on alarm response, command and control of crew activities, communication practices, procedural adherence, and implementation of Emergency Plan requirements. The inspectors also observed the post-training critique to assess the ability of licensee evaluators and operating crews to self-identify performance deficiencies. The crew's performance in these areas was compared to pre-established operator action expectations and successful critical task completion requirements.

This inspection constituted one quarterly licensed operator regualification program simulator inspection sample as defined in IP 71111.11.

b. Findings

No findings of significance were identified.

.2 Resident Inspector Quarterly Observation of Heightened Activity or Risk (71111.11Q)

a. Inspection Scope

On December 16, 2012, the inspectors observed licensed operators in the Control Room perform portions of a control rod sequence exchange, power increase, and control rod scram time testing. This was an activity that required heightened awareness, additional detailed planning, and involved increased operational risk. The inspectors evaluated the following areas:

- Licensed operator performance;
- Crew's clarity and formality of communications;
- Ability to take timely actions in the conservative direction;
- Prioritization, interpretation, and verification of annunciators;
- Correct use and implementation of procedures;
- Control board manipulations;
- Oversight and direction from supervisors; and
- Ability to identify and implement appropriate TS actions and Emergency Plan actions and notifications as applicable.

This inspection constituted one quarterly licensed operator heightened activity/risk inspection sample as defined in IP 71111.11.

b. Findings

No findings of significance were identified.

.3 Annual Operating Test Results (71111.11A)

a. Inspection Scope

The inspector reviewed the overall pass/fail results of the Annual Operating Test administered by the licensee from September 3, 2012, through October 1, 2012, required by 10 CFR 55.59(a). The results were compared to the thresholds established in Inspection Manual Chapter (IMC) 0609, Appendix I, "Licensed Operator Requalification Significance Determination Process," to assess the overall adequacy of the licensee's Licensed Operator Requalification Training Program to meet the requirements of 10 CFR 55.59.

This inspection constituted one annual licensed operator requalification inspection sample as defined in IP 71111.11.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors evaluated the licensee's handling of selected degraded performance issues involving the following risk-significant structures, systems, and components (SSCs):

- Train 'A' VG Heater Failure, and
- Circuit Switcher B018 Disconnect Failure.

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the SSCs. Specifically, the inspectors independently verified the licensee's handling of SSC performance or condition problems in terms of:

- Appropriate work practices;
- Identifying and addressing common cause failures;
- Scoping of SSCs in accordance with 10 CFR 50.65(b);
- Characterizing SSC reliability issues;
- Tracking SSC unavailability;
- Trending key parameters (condition monitoring);
- 10 CFR 50.65(a)(1) or (a)(2) classification and reclassification; and
- Appropriateness of performance criteria for SSC functions classified (a)(2) and/or appropriateness and adequacy of goals and corrective actions for SSC functions classified (a)(1).

In addition, the inspectors verified that problems associated with the effectiveness of plant maintenance were entered into the licensee's corrective action program with the appropriate characterization and significance. Selected action requests were reviewed to verify that corrective actions were appropriate and implemented as scheduled.

This inspection constituted two maintenance effectiveness inspection samples as defined in IP 71111.12.

b. Findings

(1) Failure to Perform Preventive Maintenance on VG System Relay 0UAY-VG506D Resulting in Inoperability of VG Train A

Introduction

A finding of very low safety significance with an associated Non-Cited Violation of TS 5.4.1.a. was self-revealed when the age-related failure of VG system relay 0UAY-VG506D caused the removal of VG Train A electric heater 0VG04AA from operation, an entry into TS 3.6.4.3 due to the inoperability of VG Train A, and an unplanned on-line plant risk condition increase from Green to Yellow. The relay failure occurred due to the licensee's failure to perform any replacement preventive maintenance on the component throughout the history of plant operation.

Discussion

On July 15, 2011, the licensee completed a review of sixty-nine Model GP Agastat relays in Critical Categories 1 through 4 to determine if the relays had been properly classified as critical components and to determine if the relays had preventive maintenance activities in place that were aligned with the licensee's preventive maintenance template as detailed in procedure MA-AA-716-210, "Performance Centered Maintenance (PCM) Process," Revision 14. The review was conducted under Action Request (AR) 976654, "2009 Summer Assessment," Assignment #56. This assignment was to "Investigate relays to determine compliance with PCM template and provide justification for non-alignment, or create assignments to make new preventive maintenance to align with PCM template." This review was completed for the sixty-nine Agastat Model GP relays, including VG system relay 0UAY-VG506D, and it concluded that the components were correctly classified and that relay 0UAY-VG506D did not need to be replaced in order to be in alignment with the PCM template.

On August 26, 2011, the licensee completed a similar review under AR 1157980, "Relay Preventive Maintenance/Replacement Strategies/Recommendations – Equipment Reliability," Assignment #32. This assignment was to "Review preventive maintenance (PM) tasks specified for relays classified as critical, ensure age-related degradation is considered, and change PM requirements as necessary." In this review, relay 0UAY-VG506D was identified as Critical Category 4. If the relay was normally energized and Critical Category 1 through 4 then it was determined that the relay should be replaced every 10 years in order to comply with the PCM template specified in MA-AA-716-210. Relay 0UAY-VG506D is normally energized. According to a manufacturing tag on the relay, it was manufactured on February 28, 1981. This relay had not been replaced since it was originally installed during plant construction in 1987.

Age-related failure of relay 0UAY-VG506D occurred on August 22, 2012. The contacts for this relay were found to be failed open, which prevented the VG Train A electric heater from operating. With the heater not working, VG Train A was declared inoperable and unavailable. At that time, plant risk was increased from Green to Yellow and TS 3.6.4.3, Action A.1, "Restore VG-A to an operable status within seven (7) days," was entered by the operating shift.

Procedure MA-AA-716-210 provided guidelines to the licensee for determining the classification of components. Relay 0UAY-VG506D should have been classified as a Critical Category 3 for its duty cycle because it is a normally energized relay. Per this procedure, if a component runs continuously it should be classified as a High Duty Cycle component. For a relay this would correspond to a normally energized condition. Had this fact been correctly determined during either of the reviews described above, a preventive maintenance activity to replace the relay after 10 years of service would have been implemented.

The licensee initiated corrective actions to replace the failed relay, re-perform the review of the sixty-nine Agastat relays that was conducted under AR 976654 Assignment #56 to determine if they are properly categorized, and to create PM activities as necessary to replace any normally energized Critical Category 1 through 4 Agastat relays on a 10-year frequency.

Analysis

The inspectors determined that the licensee's failure to perform appropriate preventive maintenance on VG system relay 0UAY-VG506D consistent with the PCM template in MA-AA-716-210 was a performance deficiency warranting a significance evaluation. The inspectors reviewed the examples of minor issues in IMC 0612, "Power Reactor Inspection Reports," Appendix E, "Examples of Minor Issues," and found several examples wherein licensees failed to adequately implement procedural requirements and the consequences had some safety impact were considered to be of more than minor safety significance. Consistent with the guidance in IMC 0612, Appendix B, "Issue Screening," the inspectors determined that the finding was of more than minor safety significance because it was associated with the SSC and Barrier Performance attribute and adversely affected the Barrier Integrity Cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the age-related failure of 0UAY-VG506D on August 22, 2012, rendered VG Train A inoperable and caused an unplanned increase in the plant's on-line risk condition from Green to Yellow. The inspectors performed a

significance screening of this finding using the guidance provided in IMC 0609, "Significance Determination Process," Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." In accordance with Exhibit 3, "Barrier Integrity Screening Questions," the inspectors determined that that this finding was a licensee performance deficiency of very low safety significance (Green) because the finding only represented a degradation of the radiological barrier function provided for the Auxiliary Building and the Fuel Building and was not a complete loss of the barrier function provided by the VG system since VG Train B remained operable.

Cross-Cutting Aspects

The inspectors concluded that this finding affected the cross-cutting area of human performance. Specifically, in the area of work control, the licensee did not appropriately coordinate work activities by incorporating actions to plan work activities to support long-term equipment reliability by scheduling maintenance as more preventive than reactive. (IMC 0310 H.3(b))

Enforcement

Technical Special 5.4.1.a requires, in part, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, dated February 1978. Regulatory Guide 1.33, Revision 2, Appendix A, Section 9.b, recommends procedures for performing maintenance, including preventive maintenance schedules for safety-related SSCs to specify inspection or replacement of parts that have a specific lifetime. Licensee procedure MA-AA-716-210, "PCM Process," Revision 14, implements the requirements of Regulatory Guide 1.33, Revision 2, Appendix A, Section 9.b and contains guidance for scheduling preventive maintenance based upon the classification of components. This procedure specifies that a normally energized relay such as 0UAY-VG506D be classified as Critical Category 3 for its duty cycle and be replaced on a 10-year frequency during its service life.

Contrary to the above, prior to August 22, 2012, the licensee failed to correctly classify safety-related relay 0UAY-VG506D as a Critical Category 3 component and to specify inspection or replacement for the component with a limited service life. Consequently, the relay failed due to age-related degradation. Because of the very low safety significance, this violation is being treated as a Non-Cited Violation consistent with Section 2.3.2 of the NRC Enforcement Policy (**NCV 05000461/2012005-01, Failure to Perform Preventive Maintenance on Standby Gas Treatment System Relay 0UAY-VG506D**). The licensee entered this violation into its corrective action program as AR 01403682.

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

a. Inspection Scope

The inspectors reviewed the licensee's evaluation and management of plant risk for 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:

- Planned and emergent maintenance during the week of October 29 – November 2 on the RCIC System, planned maintenance on Standby Liquid Control System Pump B, and unplanned loss of a 345 Kilovolt feed to the switchyard, and
- Planned maintenance during the week of November 12-16 on the Division 3 Diesel Generator (DG).

These activities were selected based on their potential risk significance relative to the Reactor Safety Cornerstones. As applicable for each of the above activities, the inspectors reviewed the scope of maintenance work in the plant's daily schedule, reviewed Control Room logs, verified that plant risk assessments were completed as required by 10 CFR 50.65(a)(4) prior to commencing maintenance activities, discussed the results of the assessment with the licensee's Probabilistic Risk Analyst and/or Shift Technical Advisor, and verified that plant conditions were consistent with the risk assessment assumptions. The inspectors also reviewed TS requirements and walked down portions of redundant safety systems, when applicable, to verify that risk analysis assumptions were valid, that redundant safety-related plant equipment necessary to minimize risk was available for use, and that applicable requirements were met.

In addition, the inspectors verified that maintenance risk related problems were entered into the licensee's corrective action program with the appropriate significance characterization. Selected action requests were reviewed to verify that corrective actions were appropriate and implemented as scheduled.

This inspection constituted two maintenance risk assessment inspection samples as defined in IP 71111.13.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the following issues:

- AR 01406143, "Noticed 1/8" Gap at Operator Mount Brackets on Both Sides" (EC 390517, "Past Operability of Damper 1VG02YA for Gaps at Operator Mount Brackets");
- AR 01424449, "1E22F015 MOV [Motor-Operated Valve] Analysis Error Identified;" and
- AR 01444355, "Division 1 Diesel Generator Handswitch Failed to Shutdown DG."

The inspectors selected these potential operability/functionality issues based on the risk significance of the associated components and systems. The inspectors verified that the conditions did not render the associated equipment inoperable or result in an unrecognized increase in plant risk. When applicable, the inspectors verified that the licensee appropriately applied TS limitations, appropriately returned the affected equipment to an operable status, and reviewed the licensee's evaluation of the issue with respect to the regulatory reporting requirements. 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 evaluation. When applicable, the inspectors also verified that the licensee appropriately assessed the functionality of SSCs that perform specified functions described in the UFSAR, Operations Requirements Manual, Emergency Plan, Fire Protection Plan, regulatory commitments, or other elements of the current licensing basis when degraded or nonconforming conditions were identified.

In addition, the inspectors verified that problems related to the operability or functionality of safety-related plant equipment was entered into the licensee's corrective action program with the appropriate characterization and significance. Selected action requests were reviewed to verify that corrective actions were appropriate and implemented as scheduled.

This inspection constituted three operability evaluation inspection samples as defined in IP 71111.15.

b. Findings

.1 Failure to Satisfy 10 CFR 50.73 Reporting Requirements for a Condition Prohibited by Technical Specifications

(Closed) Unresolved Item (URI) 05000461/2012004-03, Past Operability/Reportability Determination for Inoperable Division 1 DG Due to Ventilation System Damper Failure

Introduction

The inspectors identified a finding of very low safety significance (Green) with an associated Severity Level IV Non-Cited Violation of the NRC's reporting requirements in 10 CFR 50.73, "Licensee Event Report System." The licensee failed to submit a required Licensee Event Report (LER) within 60 days after the discovery of an event that was reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition which was prohibited by the plant's TS and 10 CFR 50.73(a)(2)(v)(B) as a condition that could have prevented the fulfillment of a safety function. The condition involved an inoperable DG for longer than the TS completion time for restoration.

Discussion

On March 1, 2012, operators started the Division 1 DG for a monthly surveillance test and immediately noted a lack of expected air flow in the room from the ventilation supply fan and that the doors between the DG rooms did not have the usual high differential pressure between them. Operators secured the Division 1 DG and DG room supply fan after the engine had been running for about 45 minutes. With the ventilation fan secured, the licensee discovered that the ventilation supply damper hydramotor coupling was disconnected, causing the damper not to open (or to fail closed) when the ventilation fan started. Operators declared the Division 1 DG inoperable upon discovering the failed damper.

The licensee completed an equipment apparent cause evaluation for the damper failure and concluded that maintenance craftsmen had failed to sufficiently tighten a locknut on

the coupling when the hydramotor was replaced on September 29, 2010, due to inadequate guidance in the maintenance procedure. The Division 1 DG and DG room supply fan had last operated satisfactorily during monthly testing on January 25, 2012.

The inspectors noted that the licensee had not considered this to be a demand or run failure for the DG and had not reported the event in accordance with 10 CFR 50.73, "Licensee Event Report System," Paragraph (a)(2)(i)(B), as a condition which was prohibited by the plant's TS for an inoperable DG longer than the TS completion time for restoration. The inspectors reviewed the guidance in NUREG 1022, "Event Reporting Guidelines 10 CFR 50.72 and 50.73," Revision 2 and questioned the licensee's conclusion that the event was not reportable based on the time of discovery. NUREG 1022, Section 3.2.2, states in part: "Generally, an operation or condition prohibited by the technical specifications existed and is reportable if surveillance testing indicates that equipment (e.g., one train of a multiple train system) was not capable of performing its specified safety functions (and thus was inoperable) for a period of time longer than allowed by technical specifications (i.e., LCO [limiting condition for operation] allowed outage time, or completion time for restoration of equipment in ISTS [Improved Standard Technical Specifications])." The guidance further states: "For the purposes of evaluating the reportability of a discrepancy found during surveillance testing that is required by the technical specifications... it should be assumed that the discrepancy occurred at the time of its discovery unless there is firm evidence, based on a review of relevant information such as the equipment history and the cause of failure, to indicate that the discrepancy existed previously." Based on the known cause of failure, it appeared to the inspectors that had there been an event involving a loss of offsite power with a demand for the Division 1 DG to run at any time after it was last successfully tested on January 25th, the damper would have failed at that time; and, therefore the DG had been inoperable since it was last demonstrated to be operable on January 25th.

The inspectors discussed this issue with the licensee and in response to the inspectors' questions, the licensee initiated AR 01401926 to further review its past operability/reportability conclusion. The inspectors opened URI 05000461/2012004-03 pending additional review to determine whether this issue was reportable in accordance with 10 CFR 50.73(a)(1).

During this inspection period, the licensee completed its review of the inspectors' questions and concluded that the event was reportable under 10 CFR 50.73(a)(2)(i)(B) as a condition which was prohibited by the plant's TS and 10 CFR 50.73(a)(2)(v)(B) as a condition that could have prevented the fulfillment of a safety function. Between January 25th and March 1st, the Division 2 DG was inoperable for approximately 15 hours during scheduled maintenance and testing. Having both DGs inoperable concurrently resulted in a loss of safety function of a system that is needed to remove residual heat. The inspectors concurred with the licensee's conclusion that the event was reportable under both conditions. The licensee submitted LER 05000461/2012-002-00, "Condition Prohibited by Technical Specifications Due to Ventilation Damper Coupling Disconnected." Refer to Section 4OA3.2 of this inspection report for the inspectors' review of the LER.

The licensee completed an apparent cause evaluation for its failure to correctly recognize the reportable condition and concluded that not reporting it was due to its decision making, which led to the conclusion that firm evidence did not exist prior to the damper failure on March 1st. On March 5th, the licensee's initial review of the event

stated that based on the time of discovery; there was no past operability or reportability issue. This review also stated that if the results of the equipment apparent cause evaluation determine firm evidence of a particular point in time beyond which the Division 1 DG was inoperable, then reportability must be re-assessed. On May 4th, the licensee completed a reportability determination based upon the results of the equipment apparent cause evaluation and incorrectly concluded that the evaluation did not strongly support that the condition could have existed prior to the event. The inspectors noted that by May 4th, the 60-day reporting time limit had expired and the LER would have already been late if the licensee had determined then that the event was reportable.

The licensee identified one contributing cause in the apparent cause evaluation. The licensee's regulatory assurance staff interpreted the causal statement in the equipment apparent cause evaluation to lack "firm evidence" since the ventilation damper had operated multiple times successfully since maintenance was last performed in September 2010. In other words, the causal statement led the licensee not to consider whether the damper would have failed at any time after the Division 1 DG and DG room supply fan last successfully ran on January 25th.

Corrective actions identified by the licensee in the apparent cause evaluation included:

1. Submitting the required LER;
2. Briefing applicable plant staff on the lessons learned from the missed reporting of this event;
3. Implementing a practice of committee-type reviews of reportability determinations using operations, regulatory assurance, and other responsible staff;
4. Proposing a change to the licensee's procedural guidance on event reporting following the results of a corporate peer group review;
5. Implementing a template to include in each reportability determination an action to ensure that when a cause is unclear or indeterminate that a determination is made regarding whether the component/system would have been able to perform its function after the previous successful surveillance; and
6. Additional operability/reportability training for selected regulatory assurance staff.

Analysis

The inspectors determined that the licensee's failure to report this issue as a condition which was prohibited by the plant's TS was a licensee performance deficiency warranting a significance evaluation. Consistent with the guidance in IMC 0612, "Power Reactor Inspection Reports, Appendix B, "Issue Screening," because this violation of the NRC's reporting requirements affected the NRC's ability to perform its regulatory function, the inspectors evaluated the violation using the traditional enforcement process in accordance with the NRC Enforcement Policy and assessed the significance of the underlying issue using the SDP. The inspectors reviewed the examples of minor issues in IMC 0612, "Power Reactor Inspection Reports," Appendix E, "Examples of Minor Issues," and found no examples related to this issue.

The inspectors determined that this finding was of more than minor significance because the NRC relies on licensees to identify and report conditions or events meeting the criteria specified in the TS and the regulations in order to perform its regulatory function and, therefore if left uncorrected it could lead to a more significant safety concern. The inspectors previously determined that the underlying issue was a finding of very low safety significance (Green) during a detailed risk evaluation and documented the finding in NRC Inspection Report 05000461/2012004 (NCV 05000461/2012004-01, Failure to Correctly Assemble Diesel Generator Ventilation System Damper Resulted in Inoperable Diesel Generator). Consistent with the guidance in Section 6.9, Paragraph d.9, of the NRC Enforcement Policy, the violation associated with this finding was determined to be a Severity Level IV Violation.

Cross-Cutting Aspects

The inspectors concluded that this finding affected the cross-cutting area of human performance. The licensee's decision making process for evaluating potentially safety-significant or risk-significant conditions with respect to the reporting requirements in 10 CFR 50.73 was inadequate. Specifically, the licensee's decision making did not take into consideration that the ventilation damper would have failed at any time after the last successful Division 1 DG monthly surveillance test on January 25th. (IMC 0310 H.1(a))

Enforcement

10 CFR 50.73(a)(1) requires, in part, that the licensee submit an LER for any event of the type described in this paragraph within 60 days after the discovery of the event. 10 CFR 50.73(a)(2)(i)(B) requires, in part, that the licensee report any event or condition which was prohibited by the plant's TS. In addition, 10 CFR 50.73(a)(2)(v)(B) requires, in part, that the licensee report any event or condition that could have prevented the fulfillment of the safety function of systems that are needed to remove residual heat.

Contrary to the above, the licensee failed to submit a required LER within 60 days after discovery of an event on March 1, 2012. The event involved an inoperable DG for longer than the TS completion time for restoration. This Severity Level IV violation of the NRC reporting requirements is associated with a Green SDP finding and will be treated as a Non-Cited Violation consistent with Section 2.3.2 of the NRC Enforcement Policy **(NCV 05000461/2012005-02, Failure to Satisfy 10 CFR 50.73 Reporting Requirements for a Condition Prohibited by Technical Specifications)**. The licensee entered this violation into its corrective action program as AR 01401926 and subsequently submitted the required LER.

URI 05000461/2012004-03 is closed.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

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

- WO 01284767-01, "Electrical Maintenance 1E12-F064A Clean & Inspect / Thrust Verification;"
- WO 01575147-11, "Electrical Maintenance 1E51-F068 PMT - Thermal O/L Bypass Test (9381.01);"
- WO 01587328-06, "Operations 1TSDG260 Division 3 DG Coolant Temperature Switch;"
- WO 01591620-02, "Mechanical Maintenance 1G33C001B: Repair Pump Mechanical Seal Leak;"
- WO 1593729-04, "Operations – PMT VC [Control Room Ventilation] Chiller B 0VC13CB – 0AP06E 4D;" and
- WO1594226-03, "Operations PMT - Operate DG1A to Perform Verifications."

The inspectors reviewed the scope of the work performed and evaluated the adequacy of the specified post-maintenance testing. The inspectors verified that the post-maintenance testing was performed in accordance with approved procedures; that the procedures contained clear acceptance criteria, which demonstrated operational readiness and that the acceptance criteria was met; that appropriate test instrumentation was used; that the equipment was returned to its operational status following testing; and, that the test documentation was properly evaluated.

In addition, the inspectors verified that post-maintenance testing problems were entered into the licensee's corrective action program with the appropriate characterization and significance. Selected action requests were reviewed to verify that the corrective actions were appropriate and implemented as scheduled.

This inspection constituted six post-maintenance testing inspection samples as defined in IP 71111.19.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the test results for the following surveillance testing activities to determine whether risk-significant systems and equipment were capable of performing their intended safety function and to verify that the testing was conducted in accordance with applicable procedural and TS requirements:

- CPS 9015.01, "Standby Liquid Control System Operability;" (Inservice Test)
- CPS 9080.01, "Diesel Generator 1A Operability - Manual and Quick Start Operability;" (Routine Test)
- CPS 9070.01, "Diesel Driven Fire Pumps (B) Operability Test;" and (Routine Test)
- CPS 9054.01C002, "RCIC (1E51-C001) High Pressure Operability Checks." (Inservice Test)

The inspectors observed selected portions of the test activities to verify that the testing was accomplished in accordance with plant procedures. The inspectors reviewed the

test methodology and documentation to verify that equipment performance was consistent with safety analysis and design basis assumptions, and that testing acceptance criteria were satisfied.

In addition, the inspectors verified that surveillance testing problems were entered into the licensee's corrective action program with the appropriate characterization and significance. Selected action requests were reviewed to verify that corrective actions were appropriate and implemented as scheduled.

This inspection constituted two in-service tests and two routine surveillance tests for a total of four surveillance testing inspection samples as defined in IP 71111.22.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

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

a. Inspection Scope

The Office of Nuclear Safety and Incident Response headquarters staff performed an in-office review of the latest revisions of the Emergency Plan and various Emergency Plan Implementing procedures (EPIPs) located under ADAMS Accession Numbers ML 12088A343 and ML 12192A510.

The licensee transmitted the EPIP revisions to the NRC pursuant to the requirements of 10 CFR 50, Appendix E, Section V, "Implementing Procedures." 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.

This inspection constituted one emergency action level and emergency plan changes inspection sample as defined in IP 71114.04.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a full scale emergency preparedness drill on October 9, 2012 to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. This drill was planned to be evaluated and was included in performance indicator data regarding drill and exercise performance. The inspectors observed emergency response operations in the Operations Simulator and Technical Support Center to determine whether the event classification, notifications, and protective action recommendations were performed in

accordance with procedures. The inspectors also attended the licensee's drill critique to compare any inspector-observed weaknesses with those identified by the licensee's staff in order to evaluate the critique and to verify whether the licensee's staff was properly identifying weaknesses and entering them into the corrective action program.

This inspection constituted one emergency preparedness drill evaluation inspection sample as defined in IP 71114.06.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01)

The inspection activities supplement those documented in Inspection Report 05000461/2012002 and constitute one complete sample as defined in IP 71124.01.

.1 Inspection Planning (02.01)

a. Inspection Scope

The inspectors reviewed all licensee performance indicators for the Occupational Exposure Cornerstone for follow-up. The inspectors reviewed the results of radiation protection program audits (e.g., licensee's quality assurance audits or other independent audits). The inspectors reviewed any reports of operational occurrences related to occupational radiation safety since the last inspection. The inspectors reviewed the results of the audit and operational report reviews to gain insights into overall licensee performance.

b. Findings

No findings of significance were identified.

.2 Radiological Hazard Assessment (02.02)

a. Inspection Scope

The inspectors reviewed work in potential airborne areas and evaluated whether the air samples were representative of the breathing air zone. The inspectors evaluated whether continuous air monitors were located in areas with low background to minimize false alarms and were representative of actual work areas. The inspectors evaluated the licensee's program for monitoring levels of loose surface contamination in areas of the plant with the potential for the contamination to become airborne.

b. Findings

No findings of significance were identified.

.3 Radiological Hazards Control and Work Coverage (02.05)

a. Inspection Scope

The inspectors evaluated the adequacy of radiological controls, such as required surveys, radiation protection job coverage (including audio and visual surveillance for remote job coverage), and contamination controls. The inspectors evaluated the licensee's use of electronic personal dosimeters in high noise areas as high radiation area (HRA) monitoring devices.

The inspectors reviewed radiation work permits for work within airborne radioactivity areas with the potential for individual worker internal exposures. The inspectors evaluated airborne radioactive controls and monitoring, including potential for significant airborne levels (e.g., grinding, grit blasting, system breaches, entry into tanks, cubicles, and reactor cavities). The inspectors assessed barrier (e.g., tent or glove box) integrity and temporary high-efficiency particulate air ventilation system operation.

b. Findings

No findings of significance were identified.

.4 Radiation Worker Performance (02.07)

a. Inspection Scope

The inspectors reviewed radiological problem reports since the last inspection that found the cause of the event to be human performance errors. The inspectors evaluated whether there was an observable pattern traceable to a similar cause. The inspectors assessed whether this perspective matched the corrective action approach taken by the licensee to resolve the reported problems. The inspectors discussed with the Radiation Protection Manager any problems with the corrective actions planned or taken.

b. Findings

No findings of significance were identified.

.5 Radiation Protection Technician Proficiency (02.08)

a. Inspection Scope

The inspectors reviewed radiological problem reports since the last inspection that found the cause of the event to be radiation protection technician error. The inspectors evaluated whether there was an observable pattern traceable to a similar cause. The inspectors assessed whether this perspective matched the corrective action approach taken by the licensee to resolve the reported problems.

b. Findings

No findings of significance were identified.

.6 Problem Identification and Resolution (02.09)

a. Inspection Scope

The inspectors evaluated whether problems associated with radiation monitoring and exposure control were being identified by the licensee at an appropriate threshold and were properly addressed for resolution in the licensee's corrective action program. The inspectors assessed the appropriateness of the corrective actions for a selected sample of problems documented by the licensee that involve radiation monitoring and exposure controls. The inspectors assessed the licensee's process for applying operating experience to their plant.

b. Findings

No findings of significance were identified.

2RS7 Radiological Environmental Monitoring Program (71124.07)

This inspection constituted one complete sample as defined in IP 71124.07.

.1 Inspection Planning (02.01)

a. Inspection Scope

The inspectors reviewed the annual radiological environmental operating reports and the results of any licensee assessments since the last inspection to assess whether the Radiological Environmental Monitoring Program (REMP) was implemented in accordance with the TS and Offsite Dose Calculation Manual (ODCM). This review included reported changes to the ODCM with respect to environmental monitoring, commitments in terms of sampling locations, monitoring and measurement frequencies, land use census, inter-laboratory comparison program, and analysis of data.

The inspectors reviewed the ODCM to identify locations of environmental monitoring stations.

The inspectors reviewed the UFSAR for information regarding the environmental monitoring program and meteorological monitoring instrumentation.

The inspectors reviewed quality assurance audit results of the program to assist in choosing inspection "smart samples" and audits and technical evaluations performed on the vendor laboratory program.

The inspectors reviewed the annual effluent release report and the 10 CFR 61, "Licensing Requirements for Land Disposal of Radioactive Waste," report to determine if the licensee was sampling, as appropriate, for the predominant and dose-causing radionuclides likely to be released in effluents.

b. Findings

No findings of significance were identified.

.2 Site Inspection (02.02)

a. Inspection Scope

The inspectors walked down select air sampling stations and dosimeter monitoring stations to determine whether they were located as described in the ODCM and to determine the equipment material condition. Consistent with smart sampling, the air sampling stations were selected based on the locations with the highest X/Q, D/Q wind sectors, and dosimeters were selected based on the most risk-significant locations (e.g., those that have the highest potential for public dose impact).

For the air samplers and dosimeters selected, the inspectors reviewed the calibration and maintenance records to evaluate whether they demonstrated adequate operability of these components. Additionally, the review included the calibration and maintenance records of select composite water samplers.

The inspectors assessed whether the licensee had initiated sampling of other appropriate media upon loss of a required sampling station.

The inspectors observed the collection and preparation of environmental samples from different environmental media (e.g., ground and surface water, milk, vegetation, sediment, and soil) as available to determine if environmental sampling was representative of the release pathways as specified in the ODCM and if sampling techniques were in accordance with procedures.

Based on direct observation and review of records, the inspectors assessed whether the meteorological instruments were operable, calibrated, and maintained in accordance with guidance contained in the UFSAR, NRC Regulatory Guide 1.23, "Meteorological Monitoring Programs for Nuclear Power Plants," and licensee procedures. The inspectors assessed whether the meteorological data readout and recording instruments in the control room and, if applicable, at the tower were operable.

The inspectors evaluated whether missed and/or anomalous environmental samples were identified and reported in the annual environmental monitoring report. The inspectors selected events that involved a missed sample, inoperable sampler, lost dosimeter, or anomalous measurement to determine if the licensee had identified the cause and had implemented corrective actions. The inspectors reviewed the licensee's assessment of any positive sample results (i.e., licensed radioactive material detected above the lower limits of detection) and reviewed the associated radioactive effluent release data that was the source of the released material.

The inspectors selected SSCs that involve or could reasonably involve licensed material for which there is a credible mechanism for licensed material to reach ground water, and assessed whether the licensee had implemented a sampling and monitoring program sufficient to detect leakage of these SSCs to ground water.

The inspectors evaluated whether records, as required by 10 CFR 50.75(g), of leaks, spills, and remediation since the previous inspection were retained in a retrievable manner.

The inspectors reviewed any significant changes made by the licensee to the ODCM as the result of changes to the land census, long-term meteorological conditions (3-year

average), or modifications to the sampler stations since the last inspection. They reviewed technical justifications for any changed sampling locations to evaluate whether the licensee performed the reviews required to ensure that the changes did not affect its ability to monitor the impacts of radioactive effluent releases on the environment.

The inspectors assessed whether the appropriate detection sensitivities with respect to TS/ODCM were used for counting samples (i.e., the samples meet the TS/ODCM required lower limits of detection). The licensee uses a vendor laboratory to analyze the REMP samples so the inspectors reviewed the results of the vendor's quality control program, including the inter-laboratory comparison, to assess the adequacy of the vendor's program.

The inspectors reviewed the results of the licensee's interlaboratory comparison program to evaluate the adequacy of environmental sample analyses performed by the licensee. The inspectors assessed whether the interlaboratory comparison test included the media/nuclide mix appropriate for the facility. If applicable, the inspectors reviewed the licensee's determination of any bias to the data and the overall effect on the REMP.

b. Findings

No findings of significance were identified.

.3 Identification and Resolution of Problems (02.03)

a. Inspection Scope

The inspectors assessed whether problems associated with the REMP were being identified by the licensee at an appropriate threshold and were properly addressed for resolution in the licensee's corrective action program. Additionally, they assessed the appropriateness of the corrective actions for a selected sample of problems documented by the licensee that involved the REMP.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

.1 Review of Submitted Quarterly Data

a. Inspection Scope

The inspectors performed a review of the data submitted by the licensee for the Third Quarter 2012 Performance Indicators for any obvious inconsistencies prior to its public release in accordance with IMC 0608, "Performance Indicator Program."

This inspection was not considered to be an inspection sample as defined in IP 71151.

b. Findings

No findings of significance were identified.

.2 Reactor Coolant System Leakage

a. Inspection Scope

The inspectors verified the Reactor Coolant System (RCS) Leakage Performance Indicator for Unit 1. The inspectors reviewed the licensee's RCS leakage tracking surveillance test data from July 1, 2011, through September 30, 2012, to validate the accuracy of the licensee's submittals. The inspectors also reviewed the licensee's corrective action program database to determine if any problems had been identified with the performance indicator data collected or transmitted for this performance indicator and none were identified.

This inspection constituted one RCS Leakage Performance Indicator verification inspection sample as defined in IP 71151.

b. Findings

No findings of significance were identified.

.3 Reactor Coolant System Specific Activity

a. Inspection Scope

The inspectors sampled licensee submittals for the RCS Specific Activity Performance Indicator for Clinton Power Station from the fourth quarter 2011 through the third quarter 2012. The inspectors used performance indicator definitions and guidance contained in the Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, October 2009, to determine the accuracy of the data reported during those periods. The inspectors reviewed the licensee's RCS chemistry samples, TS requirements, issue reports, event reports and NRC Integrated Inspection Reports to validate the accuracy of the submittals. The inspectors also reviewed the licensee's corrective action program database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. In addition to record reviews, the inspectors observed a chemistry technician obtain and analyze a RCS sample.

This inspection constituted one RCS Specific Activity Performance Indicator inspection sample as defined in IP 71151.

b. Findings

No findings of significance were identified.

.4 Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspectors sampled licensee submittals for the Occupational Radiological Occurrences Performance Indicator from the third quarter 2011 through the third quarter 2012. The inspectors used performance indicator definitions and guidance contained in the NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, October 2009, to determine the accuracy of the data reported during those periods. The inspectors reviewed the licensee's assessment of the performance indicator for occupational radiation safety to determine if indicator related data was adequately assessed and reported. To assess the adequacy of the licensee's data collection and analyses, the inspectors discussed with radiation protection staff, the scope and breadth of its data review and the results of those reviews. The inspectors independently reviewed electronic personal dosimetry dose rate and accumulated dose alarms and dose reports and the dose assignments for any intakes that occurred during the time period reviewed to determine if there were potentially unrecognized occurrences. The inspectors also conducted walkdowns of numerous locked high and very HRA entrances to determine the adequacy of the controls in place for these areas.

This inspection constituted one Occupational Exposure Control Effectiveness Performance Indicator inspection sample as defined in IP 71151.

b. Findings

No findings of significance were identified.

.5 Radiological Effluent TS/Offsite Dose Calculation Manual Radiological Effluent Occurrences

a. Inspection Scope

The inspectors sampled licensee submittals for Radiological Effluent TS (RETS)/ODCM Radiological Effluent Occurrences Performance Indicator from the fourth quarter 2011 through the third quarter 2012. The inspectors used performance indicator definitions and guidance contained in the NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, October 2009, to determine the accuracy of the data reported during those periods. The inspectors reviewed the licensee's corrective action program database and selected individual reports generated since this indicator was last reviewed to identify any potential occurrences such as unmonitored, uncontrolled, or improperly calculated effluent releases that may have impacted offsite dose. The inspectors reviewed gaseous effluent summary data and the results of associated offsite dose calculations for selected dates to determine if performance indicator results were accurately reported. The inspectors also reviewed the licensee's methods for quantifying gaseous and liquid effluents and determining effluent dose.

This inspection constituted one RETS/ODCM Radiological Effluent Occurrences Performance Indicator inspection sample as defined in IP 71151.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

As 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. Some minor issues were entered into the licensee's corrective action program as a result of the inspectors' observations; however, they are not discussed in this report.

This inspection was not considered to be an inspection sample as defined in IP 71152.

b. Findings

No findings of significance were identified.

.2 Annual In-depth Review Samples

a. Inspection Scope

The inspectors selected the following action request for in-depth review:

- AR 01408282, "Emergency Reserve Auxiliary Transformer (ERAT) and ERAT Static VAR [Volt Amp Reactive] Compensator (SVC) Tripped."

The inspectors verified the following attributes during their review of the licensee's corrective actions for the above action request and other related action requests:

- Complete and accurate identification of the problem in a timely manner commensurate with its safety significance and ease of discovery;
- Consideration of the extent of condition, generic implications, common cause and previous occurrences;
- Evaluation and disposition of operability/reportability issues;
- Classification and prioritization of the resolution of the problem, commensurate with safety significance;
- Identification of the root and contributing causes of the problem; and
- Identification of corrective actions, which were appropriately focused to correct the problem.

The inspectors discussed the corrective actions and associated action request evaluations with licensee personnel.

This inspection constituted one annual in-depth review inspection samples as defined in IP 71152.

b. Findings

(1) Failure to Complete an Adequate Extent of Condition Review and to Correct a Previously Identified Design Problem Resulted in a Trip of the ERAT

Introduction

A finding of very low safety significance was self-revealed on September 2, 2012, when the ERAT and ERAT SVC tripped during troubleshooting activities to isolate a ground on direct current (DC) motor control center (MCC) 1F, which provides control circuit power for the ERAT. The ERAT and ERAT SVC trip occurred due to presence of a latent design error identified with seal-in relays in the ERAT's control circuitry and the licensee's failure to adequately evaluate and correct it during its extent of condition review of the problem after it was identified in September 2002. Because the ERAT is not safety-related, no violation of regulatory requirements was identified.

Discussion

On September 2, 2012, electrical maintenance craftsmen were troubleshooting to isolate the source of a 100 volt ground on DC MCC 1F. Heavy rains had created conditions for DC power system grounds. The troubleshooting activities included the use of a ground test device connected from the DC MCC 1F positive bus to ground. As electrical maintenance craftsmen raised the current on the ground test device, the ERAT's 63SPX sudden pressure seal-in relay actuated and tripped the ERAT and ERAT SVC.

Immediately following the trip, the ERAT deluge system actuated and fire pumps started. Safety related 4160 volt bus 1A1, which had been powered by the ERAT, momentarily lost power and transferred to the RAT. Due to the momentary loss of power several plant safety systems were affected including: (1) Fuel Building ventilation lost power and dampers closed causing a loss of secondary containment differential pressure and loss of safety function; (2) the running fuel pool cooling and cleanup system pump tripped, causing the upper containment pool level to drop; (3) the drywell fission product monitor isolated; (4) several radiation monitors lost power; and (5) the running Control Room ventilation chiller shut down. Refer to Section 4OA3.1 of this inspection report for the inspectors' review of the associated LER.

The ERAT is monitored by two electronic latch cards (seal-in relays). The two seal-in relays are the sudden pressure (63SPX) and fault pressure (63FPX) relays. The seal-in relays were manufactured by Qualitrol and were pre-wired and installed by a vendor during the manufacture of the ERAT in 1998. The seal-in relays work along with pressure sensors in the transformer as protective equipment. The seal-in relays automatically retain alarms and trip circuits when the pressure sensors are actuated until manually reset by an operator. A fault signal for either seal-in relay (1-out-of-2 logic) will trip the ERAT.

The licensee discovered during its investigation of an unexpected problem encountered while installing a modification on a spare main power transformer in September 2002 that a design flaw existed affecting the 63SPX and 63FPX relay circuit cards. Discovery of the design flaw was documented in AR 00123247. The main power transformers used at Clinton Power Station have the same Qualitrol 63SPX and 63FPX relays as the ERAT. Therefore, the extent of condition included the main power transformers and the

ERAT. During a phone conversation with the card vendor, the vendor identified a flaw with a C5 capacitor connected to ground and recommended removing the capacitor from the card to eliminate possible false trips. The vendor further clarified that the capacitor would have to be grounded as shown on the drawings in order to cause a false trip, and to complete this ground a wire would have to be attached to terminal 13 of the seal-in relay. The licensee reviewed drawings and performed field verifications on the main power transformers on October 8, 2002, and verified that there was no ground wire attached to terminal 13 on the 63SPX and 63FPX seal-in relay cards. Although the licensee recognized at the time that the extent of condition also included the ERAT, engineers apparently only reviewed drawings and completed field verifications on the main power transformers.

The licensee completed a root cause evaluation for the ERAT and ERAT SVC trip. The licensee identified that the root cause was a latent design error (i.e., C5 capacitor with terminal 13 grounded) on the 63SPX and 63FPX seal-in relays. The licensee also identified three contributing causes:

1. The vendor manual for the Qualitrol seal-in relays was not maintained up-to-date and therefore relevant vendor information on the latent design error affecting the seal-in relays was later unknown to the licensee. An updated vendor manual included instructions to remove the ground wire from terminal 13 in DC input power applications.
2. The extent of condition drawing reviews and field verifications failed to identify the ground on the ERAT seal-in relays after the latent design error was discovered in September 2002. The extent of condition review was not completed with the appropriate level of technical rigor and management oversight. The licensee reviewed applicable drawings for the ERAT during the root cause evaluation and found that the drawings showed terminal 13 wired to ground.
3. The absence of 2-out-of-2 trip logic, where both the 63SPX and 63FPX seal-in relays would be required to actuate to trip the ERAT, contributed to the event. If 2-out-of-2 trip logic had been installed on the ERAT like on the main power transformers, there would have been a reduced risk of a spurious trip. Only the 63SPX seal-in relay actuated to trip the ERAT on September 2nd.

To correct the latent design problem, the licensee removed the ground connection from terminal 13 on both the 63SPX and 63FPX seal-in relays before returning the ERAT to service.

Additional corrective actions identified by the licensee in the root cause evaluation included:

1. Updating the Qualitrol seal-in relay vendor manual and adding it to the licensee's program for maintaining current vendor manual revisions;
2. Engineering drawing reviews and field verifications of the main power, unit auxiliary, and reserve auxiliary transformers (including spare transformers) to verify terminal 13 on Qualitrol seal-in relays is not wired to ground; and
3. Converting the ERAT main tank pressure protective logic to 2-out-of-2.

Analysis

The inspectors determined that the licensee's failure to adequately evaluate and correct the latent design error identified on seal-in relays in the ERAT's control circuitry during its extent of condition review of the problem after it was identified in September 2002 was a performance deficiency warranting a significance evaluation. The inspectors reviewed the examples of minor issues in IMC 0612, "Power Reactor Inspection Reports," Appendix E, "Examples of Minor Issues," and found several examples wherein licensees failed to adequately correct conditions adverse to quality and consequences had some safety impact were considered to be of more than minor safety significance. Consistent with the guidance in IMC 0612, Appendix B, "Issue Screening," the inspectors determined that the finding was of more than minor safety significance because it was associated with the Equipment Performance attribute and adversely affected the Initiating Events 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, when the ERAT tripped safety related 4160 volt bus 1A1, which had been powered by the ERAT, momentarily lost power. With the momentary loss of power several plant safety systems were affected including a loss of secondary containment differential pressure. The inspectors performed a significance screening of this finding using the guidance provided in IMC 0609, "Significance Determination Process," Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." In accordance with Exhibit 1, "Initiating Events Screening Questions," the inspectors determined that that this finding was a licensee performance deficiency of very low safety significance (Green) because the finding: (1) did not involve a loss-of-coolant accident initiator; (2) did not cause a reactor trip AND the loss of mitigation equipment; (3) did not involve the complete or partial loss of a support system that contributes to the likelihood of, or cause, an initiating event AND affect mitigation equipment; and (4) did not increase the frequency of a fire or internal flooding initiating event. While the finding did involve a partial loss of a support system (i.e., offsite power) that contributes to the likelihood of an initiating event, mitigation equipment was not adversely affected by the momentary loss of power.

Cross-cutting Aspects

The inspectors concluded that because the licensee's missed opportunity to correct the latent design error occurred in 2002 and no other more recent opportunities reasonably existed to identify and correct the problem, this issue would not be reflective of current licensee performance and no cross-cutting aspect was identified.

Enforcement

No violation of regulatory requirements was identified. This issue is considered to be a finding. **(FIN 05000461/2012005-03, Failure to Complete an Adequate Extent Condition Review and to Correct a Previously Identified Design Problem Resulted in a Trip of the Emergency Reserve Auxiliary Transformer).** The licensee entered this finding into its corrective action program as AR 01408282.

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

.1 (Closed) LER 05000461/2012-001-00, "Loss of Secondary Containment Differential Pressure Due to Transformer Trip"

On September 2, 2012, electrical maintenance craftsmen were troubleshooting to isolate the source of a 100 volt ground on DC MCC 1F. Heavy rains had created conditions for DC power system grounds. The troubleshooting activities included the use of a ground test device connected from the DC MCC 1F positive bus to ground. As electrical maintenance craftsmen raised the current on the ground test device, the ERAT's 63SPX sudden pressure seal-in relay actuated and tripped the ERAT and ERAT SVC.

Immediately following the trip, the ERAT deluge system actuated and fire pumps started. Safety related 4160 volt bus 1A1, which had been powered by the ERAT, momentarily lost power and transferred to the RAT. Due to the momentary loss of power several plant safety systems were affected including: (1) Fuel Building ventilation lost power and dampers closed causing a loss of secondary containment differential pressure and loss of safety function; (2) the running fuel pool cooling and cleanup system pump tripped, causing the upper containment pool level to drop; (3) the drywell fission product monitor isolated; (4) several radiation monitors lost power; and (5) the running Control Room ventilation chiller shut down.

Secondary containment differential pressure increased above the 0.25 inches vacuum required by TS 3.6.4.1, "Secondary Containment," resulting in a loss of safety function. Operators entered Emergency Operating Procedure 8, "Secondary Containment Control," and manually started the VG system to restore secondary containment differential pressure within about 17 minutes. The licensee completed an 8-hour notification call on September 3rd to report this event in accordance with 10 CFR 50.72(b)(3)(v)(C) as an event or condition that at the time of discovery could have prevented the fulfillment of a safety function of SSCs that are needed to control the release of radioactive material (Event Notification 48269). The licensee originally reported that upper containment pool level had dropped below the minimum level required by TS 3.6.2.4, "Suppression Pool Makeup System," to maintain the safety function. Although the upper containment pool level dropped when the running fuel pool cooling and cleanup system pump tripped, the level did not drop below the minimum level required by TS 3.6.2.4 and the licensee subsequently provided a correction to the original Event Notification on October 26th.

The licensee submitted LER 05000461/2012-001-00 to report this event in accordance with 10 CFR 50.73(a)(2)(v)(C) as an event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to control the release of radioactive material. The inspectors reviewed the licensee's root cause evaluation for this event. The cause of the event was due to the presence of a latent design error identified with seal-in relays in the ERAT's control circuitry and the licensee's failure to adequately evaluate and correct it during its extent of condition review of the problem after it was identified in September 2002. The inspectors did not identify any significant safety issue that was neglected in the licensee's root cause evaluation for this event. To correct the latent design problem, the licensee removed the ground connection from terminal 13 on both the 63SPX and 63FPX seal-in relays before returning the ERAT to service. In addition, a temporary modification was installed that disabled the 63SPX trip function in order to mitigate the risk of an invalid ERAT trip until

a permanent modification can be installed that will provide 2-out-of-2 trip logic with both the 63SPX and 63FPX seal-in relays. The inspectors determined that the information provided in LER 05000461/2012-001-00 did not raise any new issues. The performance issues related to this event, the licensee's root cause evaluation, and corrective actions are discussed in more detail in Section 4OA2.2.b.1 of this inspection report.

LER 05000461/2012-001-00 is closed.

This inspection constituted one event follow-up inspection sample as defined in IP 71153.

.2 (Closed) LER 05000461/2012-002-00, "Condition Prohibited by Technical Specifications Due to Ventilation Damper Coupling Disconnected"

On March 1, 2012, operators started the Division 1 DG for a monthly surveillance test and immediately noted a lack of expected air flow in the room from the ventilation supply fan and that the doors between the DG rooms did not have the usual high differential pressure between them. Operators secured the Division 1 DG and DG room supply fan after the engine had been running for about 45 minutes. With the ventilation fan secured, the licensee discovered that the ventilation supply damper hydramotor coupling was disconnected, causing the damper not to open (or to fail closed) when the ventilation fan started. Operators declared the Division 1 DG inoperable upon discovering the failed damper.

The licensee completed an equipment apparent cause evaluation for the damper failure and concluded that maintenance craftsmen had failed to sufficiently tighten a locknut on the coupling when the hydramotor was replaced on September 29, 2010, due to inadequate guidance in the maintenance procedure. The Division 1 DG and DG room supply fan had last operated satisfactorily during monthly testing on January 25, 2012.

The licensee submitted LER 05000461/2012-002-00 to report this event in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition which was prohibited by the plant's TS for an inoperable DG longer than the TS completion time for restoration and 10 CFR 50.73(a)(2)(v)(B) as a condition that could have prevented the fulfillment of a safety function of a system that is needed to remove residual heat. Technical Specification 3.8.1, "AC Sources – Operating," Condition B required, in part, that with one required DG inoperable restore it to operable status within 14 days and Condition E required, in part, that with two required DGs inoperable restore one DG to operable status within 2 hours. Between January 25th and March 1st, the Division 2 DG was also inoperable for approximately 15 hours during scheduled maintenance and testing. Having both DGs inoperable concurrently during the 15-hour period resulted in the loss of safety function of a system that is needed to remove residual heat.

The inspectors previously reviewed this issue and documented a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings" in NRC Inspection Report 05000461/2012004 for the licensee's failure to establish an adequate procedure to perform maintenance on the damper. The inspectors determined that the information provided in LER 05000461/2012-002-00 did not raise any new issues or change the conclusion of the initial review. Therefore, the violation of TS 3.8.1 described above and in the LER will not be separately documented.

The performance issues related to the licensee's initial failure to report this event as required by 10 CFR 50.73(a)(1), "Licensee Event Report System," the associated apparent cause evaluation, and corrective actions are discussed in more detail in Section 1R15.b.1 of this inspection report.

LER 05000461/2012-002-00 is closed.

This inspection constituted one event follow-up inspection sample as defined in IP 71153.

.3 (Closed) LER 05000461/2011-008-01, "Reactor Protection System Actuation And Loss Of Shutdown Cooling," Supplement 1

On December 18, 2011, the licensee was conducting restoration activities following a reactor pressure vessel (RPV) hydrostatic pressure test. While lowering RPV level to a target level, a low RPV level (Level 3) reactor protection system (RPS) actuation occurred resulting in isolation of the operating residual heat removal (RHR) train, and a subsequent loss of shutdown cooling. RPV level was immediately restored above the Level 3 setpoint using the control rod drive system. Operators reset the RHR isolation logic within minutes of the scram signal and shutdown cooling was fully restored within 26 minutes. RCS temperature increased approximately 3°F during the event. The cause of the event was inadequate filling and venting of the permanent, common reference leg standpipe of the shutdown and upset RPV level instruments. The licensee reported this event as an 8-hour reportable event for a valid actuation of the RPS under 10 CFR 50.72 (b)(3)(iv)(A) and also under 10 CFR 50.72 (b)(3)(v)(B) as an event that at the time of discovery could have prevented the fulfillment of a safety function needed to remove residual heat. The event was also reportable under the provisions of 10 CFR 50.73 (a)(2)(iv)(A) due to a valid actuation of the RPS and in accordance with 10 CFR 50.73(a)(2)(v)(B) as an event that could have prevented the fulfillment of the safety function of structures or systems that are needed to remove residual heat.

The performance issue related to this event was discussed in NRC Inspection Report 05000461/2012-003. The inspectors documented a finding of very low safety significance as a result of the licensee's failure to establish instructions appropriate for the installation of shutdown and upset RPV level instrumentation.

The licensee submitted Supplement 1 to the original LER to include an additional cause for the RPV water level control event and to update the corrective actions that were implemented. The inspectors determined that the information provided in LER 05000461/2011-008-01 did not raise any new issues or change the conclusion of the initial review.

LER 05000461/2011-008-01 is closed.

This inspection constituted one event follow-up inspection sample as defined in IP 71153.

40A5 Other Activities

.1 (Closed) URI 05000461/2011005-03, Review of Licensee's Compliance with TS 3.6.4.3 During Operations with the Potential to Drain the Reactor Vessel (OPDRV)

During the C1R13 refueling outage on December 6, 2011, the licensee performed OPDRV activities. Entry into this operational condition changes the applicability of many TSs, such that several TS systems are required to be operable prior to commencing OPDRV activities that otherwise would not be required to be operable with the unit shutdown. Among several requirements during OPDRV activities, TS 3.6.4.3, "Standby Gas Treatment System," requires two VG subsystems (or trains) to be operable. Of the two trains of VG, only the 'B' train was operable at the time. The 'A' VG train had been inoperable since an emergent equipment issue was found during the performance of a Division 1 DG integrated surveillance test.

In order to perform OPDRV activities prior to restoring VG train 'A' to an operable status, the licensee chose to apply TS 3.0.4.a. TS 3.0.4.a states that, "When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time." If the licensee was to commence OPDRV activities, TS 3.6.4.3 would not be met since only one VG subsystem was operable. Condition 'A' of TS 3.6.4.3 requires that if one subsystem of VG is inoperable, the other subsystem shall be returned to operable status within 7 days. If that action cannot be met during its 7-day completion time with OPDRVs in progress, then TS 3.6.4.3 Condition 'C' would require the operable VG subsystem be placed in operation or initiate actions to suspend OPDRVs. In support of OPDRV activities, on December 6th at 12:06 a.m., the licensee placed the operable 'B' VG subsystem into service.

On December 6th at 9:53 a.m., with VG train 'B' in operation, the licensee commenced OPDRV activities and, according to Control Room logs, entered TS 3.6.4.3 Actions A.1 (restore the inoperable VG subsystem to operable within 7 days) and C.1 (place the operable VG subsystem in operation immediately). Later that day, at 2:37 p.m., operators secured the 'B' VG subsystem but continued to perform OPDRV activities. Control Room logs stated that the 'B' VG subsystem was secured; but operators did not document exiting TS 3.6.4.3 Action C.1, nor did they describe the basis for making that decision. Later the same day at 7:45 p.m., the licensee exited the OPDRV condition, thereby making TS 3.6.4.3 no longer applicable.

When the inspectors questioned why VG 'B' had been secured during OPDRV conditions and while in TS 3.6.4.3 Action C.1, the shift manager informed the inspectors that the decision to secure VG 'B' was made because open primary containment penetrations with VG in service were adversely impacting the operation of the containment ventilation system. Another reason provided to inspectors at the time was that a request had been made to perform welding within the secondary containment boundary, which would by procedure CPS 3319.01, "Standby Gas Treatment (VG)," Revision 16, require an engineering evaluation to be performed. The same procedure also stated that welding and grinding have no detrimental effect on the efficiency of VG charcoal absorbers. The licensee subsequently reviewed the inspectors' questions and documented an answer in AR 01298874, "NRC Question Concerning Use of ITS 3.0.4." The action request stated that the decision to secure VG 'B' was made in order to utilize

the 7-day clock provided by TS 3.6.4.3 Condition A. The licensee concluded that although Action C.1 was entered, it was not necessary to do so, and this, therefore, permitted exiting Action C.1 until the 7-day completion time of Condition A had expired.

The inspectors discussed this sequence of events with staff in the Technical Specification Branch of the NRC Office of Nuclear Reactor Regulation (NRR). Through these discussions, the inspectors and NRR staff agreed that the actions taken in regard to the licensee's interpretation and application of TS 3.0.4.a and TS 3.6.4.3 warranted further review. Specifically, the inspectors questioned whether the licensee was required by TS 3.0.4.a to enter TS 3.6.4.3, Condition C prior to commencing OPDRV activities.

The NRR staff completed its review of this issue in Task Interface Agreement 2012-06, "Clinton Power Station Technical Specification 3.6.4.3 Compliance during Operations with the Potential for Draining the Reactor Vessel." The NRR staff concluded that the licensee was not required by TS 3.0.4.a to enter TS 3.6.4.3, Condition C prior to commencing OPDRV activities and therefore did not violate TS 3.6.4.3, Condition C, when it secured the 'B' VG train without completing Actions C.2.1 and C.2.2.

URI 05000461/2011005-03 is closed.

.2 (Discussed) Temporary Instruction 2515/182 – Review of the Industry Initiative to Control Degradation of Underground Piping and Tanks

a. Inspection Scope

Leakage from buried and underground pipes has resulted in ground water contamination incidents with associated heightened NRC and public interest. The industry issued a guidance document, NEI 09-14, "Guideline for the Management of Buried Piping Integrity" (ADAMS Accession No. ML 1030901420) to describe the goals and required actions (commitments made by the licensee) resulting from this underground piping and tank initiative. On December 31, 2010, NEI issued Revision 1 to NEI 09-14, "Guidance for the Management of Underground Piping and Tank Integrity," (ADAMS Accession No. ML 110700122), with an expanded scope of components which included underground piping that was not in direct contact with the soil and underground tanks. On November 17, 2011, the NRC issued Temporary instruction (TI) 2515/182 "Review of the Industry Initiative to Control Degradation of Underground Piping and Tanks" to gather information related to the industry's implementation of this initiative.

The inspectors reviewed the licensee's programs for buried pipe, underground piping and tanks in accordance with TI-2515/182 to determine if the program attributes and completion dates identified in Sections 3.3A and 3.3 B of NEI 09-14, Revision 1, were contained in the licensee's program and implementing procedures. For the buried pipe and underground piping program attributes with completion dates that had passed, the inspectors reviewed records to determine if the attribute was in fact complete and to determine if the attribute was accomplished in a manner which reflected good or poor practices in program management.

Based upon the scope of the review described above, Phase I of TI-2515/182 was completed.

b. Observations

The licensee's buried piping and underground piping and tanks program was inspected in accordance with Paragraphs 03.01.a through 03.01.c of TI-2515/182 and was found to meet all applicable aspects of NEI 09-14, Revision 1, as set forth in Table 1 of the TI.

c. Findings

No findings of significance were identified.

.3 (Discussed) Temporary Instruction 2515/187 – Inspection of Near-Term Task Force Recommendation 2.3 – Flooding Walkdowns

On August 20, 2012, the inspectors commenced activities to verify that Clinton Power Station conducted external flood protection walkdown activities using an NRC-endorsed walkdown methodology. These flooding walkdowns are being performed at all sites in response to Enclosure 4 of a letter from the NRC to licensees entitled, "Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident," dated March 12, 2012 (ADAMS Accession No. ML12053A340). The results of this temporary instruction will be documented in a future inspection report.

.4 (Discussed) Temporary Instruction 2515/188 – Inspection of Near-Term Task Force Recommendation 2.3 – Seismic Walkdowns

On September 10, 2012, the inspectors commenced activities to verify that Clinton Power Station conducted seismic walkdown activities using an NRC-endorsed seismic walkdown methodology. These seismic walkdowns are being performed at all sites in response to Enclosure 3 of a letter from the NRC to licensees entitled, "Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident," dated March 12, 2012 (ADAMS Accession No. ML12053A340). The results of this temporary instruction will be documented in a future inspection report.

4OA6 Management Meetings

.1 Resident Inspectors' Exit Meeting

The inspectors presented the inspection results to Mr. W. Noll and other members of the licensee's staff at the conclusion of the inspection on January 17, 2013. The licensee acknowledged the findings presented. Proprietary information was examined during this inspection, but is not specifically discussed in this report.

.2 Interim Exit Meetings

Interim exit meetings were conducted for:

- The Review of the Industry Initiative to Control Degradation of Underground Piping and Tanks (TI -2515/182) with Mr. B. Taber and other members of the licensee's staff on October 11, 2012. The licensee confirmed that none of the potential report input discussed was considered proprietary.
- The Radiological Hazard Assessment and Exposure Controls, and Radiological Environmental Monitoring Inspection with Mr. W. Noll and other members of the licensee's staff on October 26, 2012. The licensee confirmed that none of the potential report input discussed was considered proprietary.
- This licensed operator requalification training annual operating test results were discussed with Mr. R. Bedford via telephone on October 24, 2012.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

R. Bair, Shift Operations Superintendent
K. Baker, Regulatory Assurance Manager
R. Bedford, Licensed Operator Requalification Lead Training Instructor
J. Cunningham, Operations Director
A. Darelus, Emergency Preparedness
C. Dunn, Training Director
R. Frantz, Regulatory Assurance
M. Friedman, Radiation Protection Operations Manager
N. Hightower, Radiation Protection Manager
K. Leffel, Operations Support Manager
D. Kemper, Engineering Director
S. Kowalski, Senior Manager Design Engineering
S. Mohundro, Engineering Programs Manager
J. Mulvey, ODCM Program Owner
W. Noll, Site Vice President
S. O'Riley, Emergency Preparedness
T. Parrent, Fire Protection & IST Program Engineer
J. Peterson, Regulatory Assurance
C. Rocha, Nuclear Oversight Manager
R. Schenck, Work Management Director
D. Shelton, Operations Services Manager
J. Smith, Senior Manager Plant Engineering
T. Stoner, Maintenance Director
J. Stovall, Chemistry, Environmental & Radwaste Manager
D. Szymkiewicz, Clinton Buried Piping Program Owner
B. Taber, Plant Manager
J. Ufert, Fire Marshall
R. Zacholski, Nuclear Oversight Lead Assessor

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

05000461/2012005-01	NCV	Failure to Perform Preventive Maintenance on Standby Gas Treatment System Relay 0UAY-VG506D (Section 1R12.1.b.1)
05000461/2012005-02	NCV	Failure to Satisfy 10 CFR 50.73 Reporting Requirements for a Condition Prohibited by Technical Specifications (Section 1R15.b.1)
05000461/2012005-03	FIN	Failure to Complete an Adequate Extent Condition Review and to Correct a Previously Identified Design Problem Resulted in a Trip of the Emergency Reserve Auxiliary Transformer (Section 4OA2.2.b.1)

Closed

05000461/2012005-01	NCV	Failure to Perform Preventive Maintenance on Standby Gas Treatment System Relay 0UAY-VG506D (Section 1R12.1.b.1)
05000461/2012005-02	NCV	Failure to Satisfy 10 CFR 50.73 Reporting Requirements for a Condition Prohibited by Technical Specifications (Section 1R15.b.1)
05000461/2012004-03	URI	Past Operability/Reportability Determination for Inoperable Division 1 DG Due to Ventilation System Damper Failure (Section 1R15.b.1)
05000461/2012005-03	FIN	Failure to Complete an Adequate Extent Condition Review and to Correct a Previously Identified Design Problem Resulted in a Trip of the Emergency Reserve Auxiliary Transformer (Section 4OA2.2.b.1)
05000461/2012-001-00	LER	Loss of Secondary Containment Differential Pressure Due to Transformer Trip (Section 4OA3.1)
05000461/2012-002-00	LER	Condition Prohibited by Technical Specifications Due to Ventilation Damper Coupling Disconnected (Section 4OA3.2)
05000461/2011-008-01	LER	Reactor Protection System Actuation And Loss Of Shutdown Cooling, Supplement 1 (Section 4OA3.3)
05000461/2011005-03	URI	Review of Licensee's Compliance with TS 3.6.4.3 During Operations with the Potential to Drain the Reactor Vessel (Section 4OA5.1)

Discussed

2515/182	TI	Review of the Industry Initiative to Control Degradation of Underground Piping and Tanks (Section 4OA5.2)
2515/187	TI	Inspection of Near-Term Task Force Recommendation 2.3 – Flooding Walkdowns (Section 4OA5.3)
2515/188	TI	Inspection of Near-Term Task Force Recommendation 2.3 – Seismic Walkdowns (Section 4OA5.4)

LIST OF DOCUMENTS REVIEWED

The following is a list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspectors reviewed the documents in their entirety, but rather, that selected sections or portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

1R01 Adverse Weather Protections

- CPS 1860.01C001, "Operations Department Cold Weather Preparations Checklist," Revision 6d
- CPS 1860.01C003, "Cold Weather Heater and Heat Trace Operability Checklist," Revision 1
- CPS 9069.03, "Shutdown Service Water Flow Path Verification," Revision 26
- WO 01505692, "Initiate Cold Weather Preparations IAW 1860.01," November 1, 2012
- AR 01313018, "Heat Trace Circuits Found Not Operating"
- AR 01347049, "0AP28EB6: EOID – Breaker Found Tripped"
- AR 01406657, "CW Travelling Screens Need Focused Screen Mesh Inspection"
- AR 01415943, "Summer Readiness Critique Lesson Learned"
- AR 01420468, "Recurring Action For Seasonal Readiness"
- AR 01421977, "EOID – Winter Preps – 1HT02JA Heat Trace Panel Problems"
- AR 01429666, "Cold Weather Operation of New CY Tank"
- AR 01432434, "Commitments Missing"
- AR 01442031, "CPS 1860.01C004 Does Not Meet Expectations For Use"
- AR 01450654, "Loss of Heat Trace RWT Building"
- AR 01452564, "During 1860.01C003 Cold Weather Preps Found 0WM08PB Not Working"

1R04 Equipment Alignment

- CPS 3309.01, "High Pressure Core Spray (HPCS)," Revision 16d
- CPS 3309.01E001, "High Pressure Core Spray Electrical Lineup," Revision 8
- CPS 3309.01V001, "High Pressure Core Spray Valve Lineup," Revision 11b
- CPS 3319.01, "Standby Gas Treatment (VG)," Revision 16
- CPS 3319.01E001, "Standby Gas Treatment Electrical Lineup," Revision 10c
- CPS 3319.01V001, "Standby Gas Treatment Valve Lineup," Revision 8
- CPS 3310.01, "Reactor Core Isolation Cooling (RI)," Revision 28
- CPS 3310.01E001, "Reactor Core Isolation Cooling Electrical Lineup," Revision 15
- CPS 3310.01V002, "Reactor Core Isolation Cooling Instrument Valve Lineup," Revision 9e
- CPS 3310.01V001, "Reactor Core Isolation Cooling Valve Lineup," Revision 12e
- M05-1079, "P&ID Reactor Core Isolation Cooling (RCIC) (RI)," Sheet 1, Revision AH
- M05-1079, "P&ID Reactor Core Isolation Cooling (RCIC) (RI)," Sheet 2, Revision AJ

1R05 Fire Protection

- Clinton Power Station Updated Final Safety Analysis Report, Appendix E, "Fire Protection Evaluation Report – Clinton Power Station Unit 1," Revision 14
- Clinton Power Station Updated Final Safety Analysis Report, Appendix F, "Fire Protection Safe Shutdown Analysis – Clinton Power Station Unit 1," Revision 14
- OP-AA-201-009, "Control of Transient Combustible Material," Revision 11
- CPS 1893.04M623, "737 Radwaste: Radwaste Operations Center Prefire Plan," Revision 4
- CPS 1893.04M400, "712 Fuel Building Basement Prefire Plan," Revision 5

- CPS 1893.04M133, "781 Auxiliary (East): Div 1 Containment Electrical Penetrations Prefire Plan," Revision 5

1R12 Maintenance Effectiveness

- Regulatory Guide 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Revision 2
- NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Revision 2
- Clinton Power Station Updated Safety Analysis Report, Revision 14
- ER-AA-310, "Implementation of Maintenance Rule," Revision 8
- ER-AA-310-1001, "Maintenance Rule Scoping," Revision 4
- ER-AA-310-1003, "Maintenance Rule Performance Criteria Selection," Revision 3
- ER-AA-310-1004, "Maintenance Rule – Dispositioning Between (a)(1 and (a)(2)," Revision 6
- MA-AA-716-210, "Performance Centered Maintenance (PCM) Process" Revision 12
- NNOE 1403682-18-01, "Failure of Normally Energized Agastat GP Series Relay Due to No Replacement Preventive Maintenance Activity"
- Equipment Apparent Cause Evaluation #1403682, Annunciator 5050-5H, Trouble SGTS Electric Heater 'A' was received unexpectedly," August 22, 2012
- Prompt Investigation #1403682, "Unexpected Annunciator 5050-5H, Trouble SGTS Electric Heater 'A'"
- Equipment Apparent Cause Evaluation AR 01424407, "B018 Failed to Open"
- (a)(1) Determination AR 01313153, 'Reactor Scrams Exceed Maintenance Rule Performance Criteria"
- (a)(1) Determination AR 01398313, "VC System Requires a Maintenance Rule (A)(1) Determination"
- (a)(1) Determination AR 01424793, "SY System Exceeds Maintenance Rule Reliability Criteria"
- AR 00925961, "Fleet CCA – Review Causes of Protective and Control Relay Failures within the Exelon Fleet During the Past 12 Months"
- AR 00976654, "2009 Summer Assessment"
- AR 01157980, "Relay Preventive Maintenance/Replacement Strategies/Recommendations – Equipment Reliability"
- AR 01403682, "Unexpected Annunciator 5050-5H, Trouble SGTS Electric Heater 'A'"
- AR 01422382, "Relay 0UAYVG508D Should Be Replaced Due to Age"
- AR 01425443, "OPRM F LPRM Inputs Not Updating at a Continuous Rate"
- AR 01424407, "0AP95E: ERAT Circuit Switcher B018 Identified As a Critical Component Failure"
- AR 01408332, "ERAT Circuit Switcher B018 Phases Remain Closed After Trip"
- AR 01414692, "Failure to Start 'B' Containment Continuous Purge Filtered Mode (Auto) Per 3408.01"
- AR 01398313, "VC System Requires a Maintenance Rule (A)(1) Determination"
- AR 01394393, "Unexpected Trip of 1VX03CA Fan"
- AR 01321553, "DG Maintenance Implementation Process Review"
- AR 01253320, "Nuclear Oversight Identified Technical Justification for Critical Preventive Maintenance Retirement"
- AR 01247016, "Determine the Cause for Fuel Building Ventilation Differential Pressure Failure"
- AR 01308737, "Reactor Water Cleanup System Isolation (Division 2) During 9532.17B"
- AR 01309195, "CPS 4.0 Critique for Event Response to Reactor Water Cleanup Pump Trips"
- AR 01314745, "Preventive Maintenance Deferral Justification Inadequate"

- AR 01313153, 'Reactor Scrams Exceed Maintenance Rule Performance Criteria'
- AR 01445763, "NRC ID: MRule Failure Incorrectly Classified As Not MPFF"

1R13 Maintenance Risk Assessments and Emergent Work Control

- Clinton Power Station Technical Specifications
- OP-AA-108-117, "Protected Equipment Program," Revision 2
- ER-AA-600, "Risk Management," Revision 6
- ER-AA-600-1012, "Risk Management Documentation," Revision 9
- ER-AA-600-1014, "Risk Management Configuration Control," Revision 6
- ER-AA-600-1042, "On-Line Risk Management," Revision 7
- WC-AA-101, "On-Line Work Control Process," Revision 19
- WC-AA-104, "Integrated Risk Management," Revision 18
- Calculation VY-47, "Evaluate ECCS Room Cooling With One Cooler Operating," Revision 0
- EC 354296, "Review Acceptability of One Cooler Operation for ECCS System Availability, Revision 0
- AR 01433886, "Loss of Brokaw Line – Trip of 4502 and 4506"
- AR 01316637, "VG B Surveillance Required to Be Performed in a Division 1 Work Week"
- AR 01324697, "SX Work in Work Week 1213 Requires Draining Division 3 SX"
- AR 01327134, "Apparent Inconsistent Results from Paragon Reviews"
- AR 01329583, "RHR Availability with a Room Fan Out of Service"
- AR 01349329, "New Parts for ERAT SVC Battery Charger B Not Like for Like"
- AR 01350209, "Calculated Heat Up Rate of Spent Fuel Pool Conservative"
- AR 01201283, "Work Week 1116 WO 1174160-02 Secondary Containment Issue"
- AR 01176461, "Division 1 DG Common Cause Actions Remaining"09

1R15 Operability Evaluations

- Clinton Power Station Technical Specifications
- Clinton Power Station Updated Final Safety Analysis Report, Revision 14
- NRC Regulatory Issue Summary 2005-20, "Revision to NRC Inspection Manual Part 9900 Technical Guidance, 'Operability Determinations & Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety,'" Revision 1
- NUREG 1022, "Event Reporting Guidelines 10 CFR 50.72 and 50.73," Revision 2
- Apparent Cause Evaluation AR 01427242, "Missed Reporting of 1VD01YA Damper Failure"
- EC 390764, "Significance Determination of 1VD01YA Damper Failure," Revision 0
- Operability Evaluation AR 01424449, "1E22F015 Motor Operated Valve Analysis Error Identified," Revision 0
- Operability Evaluation AR 01424449, "1E22F015 Motor Operated Valve Analysis Error Identified," Revision 1
- Control Room Logs, October 12, 2012
- EC 390517, "Past Operability of VG Butterfly Damper 1VG02YA," Revision 0
- AR 01401926, "Questions Regarding Past Operability of EDG Ventilation System"
- AR 01334761, "1VD01YA Hydramotor Coupling Disconnected (Division 1 DG Run)"
- AR 01417591, "Questions Re: Division 1 DG Ventilation Damper 1VD01YA Failure"
- AR 01427242, "Missed Reporting of Damper Failure"
- AR 01406143, "Noticed 1/8" Gap at Operator Mount Brackets, On Both Sides"
- AR 01424449, "1E22F015 Motor Operated Valve Analysis Error Identified"
- AR 01431245, "High Pressure Core Spray Motor Operated Valve Operability Evaluation Revision"

- AR 01291378, "Incorrect Actuator Weight in Seismic Qualification of Motor Operated Valve 1E22F015"
- AR 01419638, "SC 12-18 Part 21 60-Day Interim Report Notification"
- AR 01451468, "1VF04CA Tripped Unexpectedly"

1R19 Post-Maintenance Testing

- WO 1587328, "1TSDG260 Div 3 EDG Stby Oil Temp Outside Desired Band"
- WO 1593729, "Breaker Cycled Continually, 0AP06E-4D (0VC13CB) Smoke"
- WO 1594226, "Div 1 Diesel Generator MCR Handswitch Failed to Shutdown DG"
- WO 01575147-01, "Per EC 390556 Install Shorting Switch (E51A-S35A) and Indicating Lights to Defeat RHR Valve 1E51F068 from Spuriously Closing"
- WO 01284767-01, "Electrical Maintenance 1E12-F064A Clean & Inspect / Thrust Verification"
- WO 01284767-03, "Electrical Maintenance PMT 1E12-F064A Thermal Overload Bypass Test – CPS 9381.01"
- WO 01284767-04, "Operations PMT – Stroke 1E12-F064A (9053.04) & Verify Position Indication Lights"
- WO 01591620-02, "Mechanical Maintenance 1G33C001B: Repair Pump Mechanical Seal Leak"
- WO 01591620-03, "Operations PMT for 1G33C001B Rebuild"
- WO 01591620-06, "Component Maintenance Optimization PMT 1G33C001B – Perform Vibration Monitoring"
- WO 01591620-11, "Engineering Programs VT2 for 1G33C001B Rebuild"
- WO 01575147-06, "OP Perform PMT Testing, per EC 390556"
- CPS 3402.01, "Control Room HVAC (VC)," Revision 26
- CPS 3402.01P001, "Control Room HVAC (VC) Train Shifting," Revision 4
- CPS 3506.01, "Diesel Generator and Support Systems (DG)," Revision 35
- CPS 3506.01P001, "Division 1 Diesel Generator Operations," Revision 4
- CPS 9381.01, "MOV [Motor Operated Valve] Thermal Overload Bypass Verification," Revision 37
- CPS 9053.04, "Residual Heat Removal (RHR) A/B/C Valve Operability Checks," Revision 45b
- M05-1035, "P & ID Diesel Generator Cooling System (DG)," Revision K
- E02-1DG99, Sheet 1, "Diesel Generator 1A PGCC/RS Interface Part 1," Revision T
- E02-1DG99, Sheet 8, "Diesel Generator 1A Control Part 1," Revision AD
- E02-1DG99, Sheet 9, "Diesel Generator 1A Control Part 2," Revision O
- E03-1PL12JA, Sheet 13, "Internal Wiring Diagram Diesel Generator 1A Control Panel 1PL12JA," Revision F
- EC 390556, "Add Shorting Switch To Prevent Spurious Opening of 1E51F068," Revision 0
- AR 01434741, "MSO Testing Results for RCIC Valve 1E51-F068"
- AR 01434929, "95 Relay Testing Not Performed as PMT for 1E51-F059"
- AR 01435289, "Legacy Issue Identified with MCR Wire Numbers"
- AR 1433502, "1TSDG260 Div 3 EDG Stby Oil Temp Outside Desired Band"
- AR 1444355, "Div 1 Diesel Generator MCR Handswitch Failed to Shutdown DG"
- AR 01430809, "Unable to Collect As Found Thrust Verification, 1E12F064A"
- AR 01442091, "Emergent Procedure Change Occurs During RT Pump Start Up"
- AR 01442218, "Leakage Identified During VT-2 Exam of RT 'B' Pump Seal"
- AR 01441996, "1G33-F045B Packing Leak"

1R22 Surveillance Testing

- Clinton Power Station Technical Specifications

- Clinton Power Station Updated Final Safety Analysis Report, Revision 14
- Clinton Nuclear Power Station Unit 1, "Inservice Testing Program Plan – Third Ten Year Interval," Revision 3
- American Society of Mechanical Engineers / American National Standards Institute (ASME/ANSI) Code for Operation and Maintenance of Nuclear Power Plants (OM), 2004 Edition
- NUREG 1482, "Guidelines for Inservice Testing at Nuclear Power Plants," Revision 1
- CPS 9080.01, "Diesel Generator 1A Operability - Manual and Quick Start Operability," Revision 53d
- CPS 9054.01, "RCIC System Operability Check," Revision 43
- CPS 9054.01C002, "RCIC (1E51-C001) High Pressure Operability Checks," Revision 6
- CPS 9054.01D002, "RCIC (1E51-C001) High Pressure Operability Checks Checklist," Revision 25
- CPS 9813.01, "Control Rod Scram Time Testing," Revision 40
- CPS 9813.01C001, "Control Rod Scram Time Testing Checklist," Revision 32f
- CPS 9813.01D003, "Scram Time Testing – Containment Data Sheet," Revision 31
- CPS 9813.01D004, "Scram Time Testing – Main Control Room Data Sheet," Revision 31b
- CPS 9813.01D005, "Control Rod Scram Timing / Stopwatch," Revision 31a
- CPS 9813.01D006, "Control Rod Scram Time Option B – 20% Insertion Calculation," Revision 31
- CPS 9813.01D007, "Control Rod Scram Time Option B – OLMCPR Calculation," Revision 31
- CPS 9071.01, "Diesel Driven Fire Pumps Operability Test," Revision 37
- CPS 9015.01, "Standby Liquid Control System Operability," Revision 41
- CPS 9015.01D001, "SLC Pump and Valve Date Sheet," Revision 38a
- CPS 9915.01, "Standby Liquid Control Chemical Sampling," Revision 40
- CPS 9915.01D001, "Standby Liquid Control Data Sheet," Revision 36a
- EC 389945, "GL 86-10 Evaluation for Use of a Dedicated, Qualified Operator As Alternate Compensatory Measures During CPS 9861.02D027 (LLRT for 1MC056) at Clinton Power Station," Revision 0
- WO 1562730, "9015.01B23 OP SLC Pump Operability (SLC Pump B)"
- WO 1588495, "Replace Turbocharger"
- AR 01339996, "1E12C003: 9053.07 RHR C Data in the Action Range"
- AR 01364285, "0VC03CA: 9070.05 Procedure Change Conflicts with UFSAR"
- AR 01359693, "Waterleg Comprehensive Pump Test Did Not Meet All Requirements"
- AR 01212668, "Modify IST Check Valve Open Exercise Surveillances"
- AR 01392559, "Did Not Perform LPCS/RHR Waterleg Pump Test Per Schedule"
- AR 01422434, "Nuclear Oversight Identified Differences in Snubber Acceptance Criteria"
- AR 01402622, "Revise 9861.02D027 for EC 389945"
- AR 01411045, "1SX01PC Pressure Indicator(OOS) Used for IST Data Collection"
- AR 01444548, "Clarify M&TE Requirements for SX Pump Surveillance 9069.01"
- AR 01453129, "Scram Valve Limit Switch Malfunctions"
- AR 01432868, "'B' Fire Pump (0FP01PB) Oil Dipstick Not Staying in Engine"
- AR 01433795, "EOID – CPS 9015.01 SLC System Operability Enhancement"
- AR 01435245, "Fire Pump 'B' Crankcase Pressure is High Above 30 inches H2O"
- AR 01437330, "Possible Delay in Fire Fighting Efforts"

1EP4 Emergency Action Level and Emergency Plan Changes

- EP-AA-112, "Emergency Response Organization (ERO) Emergency Response Facility (ERF) Activation and Operation," Revision 16
- EP-AA-112-200, "TSC Activation and Operation," Revision 8

- EP-AA-112-400, "Emergency Operations Facility Activation and Operation," Revision 11
- EP-AA-1000, "Standardized Radiological Emergency Plan," Revision 21

2RS1 Radiological Hazard Assessment and Exposure Controls

- RP-AA-301, "Radiological Air Sampling Program," Revision 5
- RP-AA-441, "Evaluation and Selection Process for Radiological Respirator Use"
- Radiation Work Permit and Associated ALARA Documents, RWP 10012113, C1R13 - ECCS/CTMT RHR/HP/LP/RI System Work, Revision 0
- AR01297060, "C1R13 LL RP ID Refuel Floor Airborne Condition"

2RS7 Radiological Environmental Monitoring Program

- CY-AA-170-100, "Radiological Environmental Monitoring Program," Revision 2
- CY-AA-170-1000, "Radiological Environmental Monitoring Program and Meteorological Program Implementation," Revision 6
- CY-AA-170-1100, "Quality Assurance for Radiological Monitoring Programs," Revision 1
- REMP-5, "Field Rotameter Calibration Worksheets," Various Dates
- REMP-6, "Pump Maintenance Worksheets," Various Dates
- Meteorological Monitoring Program Monthly Report, Various Dates
- AR 01385262, "Error Trap for Unmonitored Release to Environ"
- AR 01409637, "12kV Bus Outage Impact on ODCM REMP Monitors"
- AR 01377867, "AR/PR PT 15001 from Primary Met Tower Unsat As-Left"
- AR 01376001, "Results of 2012 Vendor Met Tower Inspections"

4OA1 Performance Indicator Verification

- CY-AA-130-3010; Dose Equivalent Iodine Determination; Revision 2
- CY-AA-3010-F-03, "Dose Equivalent Iodine Determination Worksheet," Various Dates
- LS-AA-2001, "Collecting and Reporting of NRC Performance Indicator Data," Revision 14
- LS-AA-2140, "Monthly Data Elements for NRC Occupational Exposure Control Effectiveness," Revision 5
- Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6
- AR 01428337, "Drywell Equipment Drain Pump Flow Erratic"
- AR 01308203, "Increase in Drywell Equipment Drain (RE) Inleakage"
- AR 01308778, "Drywell Equipment Drain Leakage Rising"
- AR 01309641, "Drywell Equipment Drain Vertical Piping Drains Past Check Valve"
- AR 01293052, "Main Control Room Annunciator 5067-6K Drywell Floor Drain Leak Rate Increase from Sump Flow"
- AR 01297923, "Proactive Approach to Manual Valves in Drywell"
- AR 01295626, "1B33F255C Valve Has a Packing Leak Resulting in a Steam Leak"
- AR 01292685, "Increased Drywell Floor Drain Flow from Sump Noted"

4OA2 Identification and Resolution of Problems

- Root Cause Evaluation AR 01408282, "Emergency Reserve Auxiliary Transformer and Emergency Reserve Auxiliary Transformer Static Var Compensator Tripped"
- Operations Decision Making AR 01408282, "Determine the Conditions for Reenergizing the ERAT," September 3, 2012
- Control Room Logs, September 2 through 3, 2012

- AR 00123247, "Design Flaw on Qualitrol Model 909-200-01 Circuit Card"
- AR 00123077, "Received Unexpected Annunciator 5010-5E Sudden Press Main Power"
- AR 01408332, "ERAT Circuit Switcher B018 Phases Remain Closed After Trip"
- AR 01408282, "ERAT and ERAT SVC Tripped"
- AR 01408472, "ERAT (0AP03E) Latent Design Error Identified"
- AR 01408952, "ERAT Single Point Vulnerability"
- AR 01409380, "Board Level Thermal Affects Noted on Qualitrol Card for ERAT"
- AR 01408186, "1DC17E: 5012-8B Ground 125V DC MCC 1F"
- AR 01408098, "1DC16E: 115V Ground on DC MCC 1E"
- AR 01408334, "Annunciator 5042-7G Lit With No Valid Reason"

40A3 Followup of Events and Notices of Enforcement Discretion

- Clinton Power Station Technical Specifications
- Clinton Power Station Updated Final Safety Analysis Report, Revision 14
- LER 05000461/2012-001-00, "Loss of Secondary Containment Differential Pressure Due to Transformer Trip," October 6, 2012
- Event Notification 48269, "Transfer of Emergency Reserve Auxiliary Transformer Isolating Fuel Pool Cooling and Cleanup System, and Fuel Building Ventilation System," September 3, 2012
- Event Notification 48269, "Transfer of Emergency Reserve Auxiliary Transformer Isolating Fuel Pool Cooling and Cleanup System, and Fuel Building Ventilation System," Revised October 26, 2012
- LER 05000461/2012-002-00, "Condition Prohibited by Technical Specifications Due to Ventilation Damper Coupling Disconnected," November 27, 2012
- LER 2011-008-00, "Reactor Protection System Actuation and Loss of Shutdown Cooling," February 6, 2012
- LER 2011-008-01, "Reactor Protection System Actuation and Loss of Shutdown Cooling," August 6, 2012
- EC 389496, "Alternate Shutdown Level Indication," Revision 0
- Root Cause Evaluation AR 01408282, "Emergency Reserve Auxiliary Transformer and Emergency Reserve Auxiliary Transformer Static Var Compensator Tripped"
- Operations Decision Making AR 01408282, "Determine the Conditions for Reenergizing the ERAT," September 3, 2012
- Control Room Logs, September 2 through 3, 2012
- AR 00123247, "Design Flaw on Qualitrol Model 909-200-01 Circuit Card"
- AR 00123077, "Received Unexpected Annunciator 5010-5E Sudden Press Main Power"
- AR 01408332, "ERAT Circuit Switcher B018 Phases Remain Closed After Trip"
- AR 01408282, "ERAT and ERAT SVC Tripped"
- AR 01408472, "ERAT (oAP03E) Latent Design Error Identified"
- AR 01408952, "ERAT Single Point Vulnerability"
- AR 01409380, "Board Level Thermal Affects Noted on Qualitrol Card for ERAT"
- AR 01408186, "1DC17E: 5012-8B Ground 125V DC MCC 1F"
- AR 01447193, "Review Past OPEX 19809 for CPS Enhancement"
- AR 01408098, "1DC16E: 115V Ground on DC MCC 1E"
- AR 01408334, "Annunciator 5042-7G Lit With No Valid Reason"

40A5 Other

- ER-AA-5400-1001, "Buried Piping and Raw Water Corrosion Program (BPRWCP) Guide," Revision 5

- ER-AA-5400-1003, "Buried Pipe and Raw Water Corrosion Program (BPRWCP) Performance Indicators," Revision 4
- ER-AA-5400-1002, "Buried Piping Examination Guide," Revision 4
- Buried Pipe and Raw Water Systems, Long Term Asset Management (LTAM) Strategy, Revision 5
- NES-G-01, "CPS Buried Piping Inspection Plan," Revision 1
- NDE Report 12-92, "UT Thickness Results for 1WS02E-36," August 14, 2012
- NDE Report 12-90, "UT Thickness Results for 1WS02E-36," August 13, 2012
- Memorandum from S. Bahadur, U.S. Nuclear Regulatory Commission, Office of Nuclear Reactor Regulation to G. Shear, U.S. Nuclear Regulatory Commission, Region III, Subject: Final Response to Task Interface Agreement 2012-06, Clinton Power Station Technical Specification 3.6.4.3 Compliance During Operations with the Potential for Draining the Reactor Vessel, November 26, 2012
- AR 01357866, "Buried Piping (NRC Inspection TI-2515/182) - Check-In Assessment"
- AR 01232246, "Indications of Degradation and Leakage in 0TF01B-6"
- AR 01398922, "2012 SX Buried Piping Project Placed on Hold"
- AR 01223705, "1CW02B – 156, Inspect CW Discharge Piping in C1R14"
- AR 01423651, "Division 1 SX Stand Pipe in Outfall 007 PIT, Leaking Water at 1GPM"
- AR 01381016, "Results From Direct Inspection of Reaction Tank Lines"
- AR 01400171, "Results of Raw Water Inspection of 1SX01AB-30"
- AR 01400172, "Results of Raw Water Inspection of 1WS14A-24"
- AR 01401838, "High Risk Buried Piping Identified During OPEX Review"
- AR 01421782, "Inspection Results From 0ST20T Buried Tank Inspection"
- AR 01309365, "Results from 2011 Buried Piping Surveys"

LIST OF ACRONYMS USED

ADAMS	Agency-wide Documents and Management System
AR	Action Request
CFR	Code of Federal Regulations
CNO	Chief Nuclear Officer
CPS	Clinton Power Station
DC	Direct Current
DG	Diesel Generator
EC	Engineering Change
EPIP	Emergency Plan Implementing Procedures
ERAT	Emergency Reserve Auxiliary Transformer
FIN	Finding
HRA	High Radiation Area
IMC	Inspection Manual Chapter
IP	Inspection Procedure
ISTS/ITS	Improved Standard Technical Specifications
LCO	Limiting Condition for Operation
LER	Licensee Event Report
MCC	Motor Control Center
MOV	Motor Operated Valve
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
NRR	Nuclear Reactor Regulation
ODCM	Offsite Dose Calculation Manual
OPDRV	Operations with the Potential to Drain the Reactor Vessel
PARS	Publicly Available Records
PCM	Performance Centered Maintenance
PM	Preventative Maintenance
RCIC	Reactor Core Isolation Cooling
RCS	Reactor Coolant System
REMP	Radiological Environmental Monitoring Program
RETS	Radiological Effluent Technical Specifications
RHR	Residual Heat Removal
RPS	Reactor Protection System
RPV	Reactor Pressure Vessel
SDP	Significance Determination Process
SSCs	Systems, Structures, and Components
SVC	Static VAR Compensator
TI	Temporary Instruction
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
VAR	Volt Amp Reactive
VC	Control Room Ventilation
VG	Standby Gas Treatment
WO	Work Order

M. Pacilio

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Sincerely,

/RA/

Robert J. Orlikowski, Acting Branch Chief
Branch 1
Division of Reactor Projects

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