Mr. Bryan C. Hanson  
Senior VP, Exelon Generation Company, LLC  
President and CNO, Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL  60555

SUBJECT:  CLINTON POWER STATION—NRC INTEGRATED INSPECTION REPORT  
05000461/2018003

Dear Mr. Hanson:

On September 30, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Clinton Power Station. On October 11, 2018, the NRC inspectors discussed the results of this inspection with Mr. T. Stoner and other members of your staff. The results of this inspection are documented in the enclosed report.

Based on the results of this inspection, the NRC has identified one issue that was evaluated under the risk significance determination process as having very-low safety significance (Green). The NRC did not identify a violation associated with this issue.

If you disagree with a cross-cutting aspect assignment or a finding not associated with a regulatory requirement 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 U.S. Nuclear Regulatory Commission, ATTN:  Document Control Desk, Washington, DC 20555–0001; with copies to the Regional Administrator, Region III; and the NRC Resident Inspector at Clinton Power Station.

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

Sincerely,

/RA/

Karla Stoedter, Chief  
Branch 1  
Division of Reactor Projects

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

Enclosure:  
Inspection Report 05000461/2018003

cc:  Distribution via LISTSERV®
Letter to Bryan Hanson from Karla Stoedter dated November 7, 2018

SUBJECT: CLINTON POWER STATION—NRC INTEGRATED INSPECTION REPORT
      05000461/2018003

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REGION III

Docket Numbers: 50–461

License Numbers: NPF–62

Report Numbers: 05000461/2018003

Enterprise Identifier: I–2018–003–0028

Licensee: Exelon Generation Company, LLC

Facility: Clinton Power Station

Location: Clinton, IL

Dates: July 1 through September 30, 2018

Inspectors: E. Sanchez Santiago, Senior Resident Inspector
D. Sargis, Resident Inspector
V. Meghani, Reactor Inspector
C. Phillips, Project Engineer

Approved by: K. Stoedter, Chief
Branch 1
Division of Reactor Projects

Enclosure
SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee’s performance by conducting an integrated quarterly inspection at Clinton Power Station, Unit 1 in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC’s program for overseeing the safe operation of commercial nuclear power reactors. Refer to https://www.nrc.gov/reactors/operating/oversight.html for more information. Findings and violations being considered in the NRC’s assessment are summarized in the table below.

List of Findings and Violations

<table>
<thead>
<tr>
<th>Cornerstone</th>
<th>Significance</th>
<th>Cross-Cutting Aspect</th>
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The inspectors identified a Green finding for the failure to revise an operability evaluation when no longer meeting a compensatory measure, in accordance with OP–AA–115, “Operability Determinations,” Revision 21. Specifically, the licensee failed to revise the operability evaluation documented in Engineering Change 387664 when no longer maintaining the Division 1 and Division 2 safety-related buses in a split bus configuration from November 2017 through June 2018.

Additional Tracking Items

<table>
<thead>
<tr>
<th>Type</th>
<th>Issue Number</th>
<th>Title</th>
<th>Report Section</th>
<th>Status</th>
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</thead>
<tbody>
<tr>
<td>LER</td>
<td>05000461/2017–002–02</td>
<td>Failure of the Division 1 Diesel Generator Ventilation Fan Load Sequence Relay Circuit During Concurrent Maintenance of RHR Division 2 Results in an Unanalyzed Condition</td>
<td>71153</td>
<td>Closed</td>
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<tr>
<td>LER</td>
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<td>71153</td>
<td>Closed</td>
</tr>
<tr>
<td>VIO</td>
<td>05000461/2017002</td>
<td>Failure to Perform Adequate Evaluation of Crane Rail Clips</td>
<td>92702</td>
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PLANT STATUS

The unit operated at full achievable power (approximately 99 percent power) for the majority of the inspection period with the following exceptions:

On July 5, 2018, reactor power was lowered to approximately 89 percent due to average discharge flume temperature approaching the National Pollutant Discharge Elimination System (NPDES) limit of 110.7 °F. The unit returned to full power later that day.

On July 8, 2018, reactor power was lowered to approximately 90 percent to perform scram time testing and main steam isolation valve testing. The unit returned to full power later that day.

On August 20, 2018, reactor power was lowered to approximately 78 percent power due to nearing the NPDES thermal discharge limits (limited to 90 days per year >99°F at the discharge flume second drop structure). The unit maintained reduced power between approximately 78 percent and 88 percent through September 7, 2018. The unit returned to full power on September 8, 2018.

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, “Light-Water Reactor Inspection Program - Operations Phase.” The inspectors performed plant status activities described in IMC 2515 Appendix D, “Plant Status” and conducted routine reviews using IP 71152, “Problem Identification and Resolution.” The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

REACTOR SAFETY

71111.01—Adverse Weather Protection

  External Flooding (1 Sample)

  The inspectors evaluated readiness to cope with external flooding on July 31, 2018.

71111.04—Equipment Alignment

  Partial Walkdown (4 Samples)

  The inspectors evaluated system configurations during partial walkdowns of the following systems/trains:

  (1) Control Room Ventilation (VC) ‘A’ during unplanned VC ‘B’ outage on August 3, 2018;
(3) High Pressure Core Spray (HPCS) during Division 2 System Outage Window (SOW) on September 20, 2018;
(4) Standby Gas Treatment (VG) ‘A’ following planned maintenance on August 31, 2018; and
(5) Division 2 Emergency Diesel Generator (EDG) during Division 1 SOW on September 18, 2018.

71111.05AQ—Fire Protection Annual/Quarterly

Quarterly Inspection (4 Samples)

The inspectors evaluated fire protection program implementation in the following selected areas:

(1) Fire Zone M–4, Fire Pump ‘A’ Room—Elevation 699′–0” on September 13, 2018;
(2) Fire Zone A–2n, Division 1 Switchgear Room—Elevation 781′–0” on August 14, 2018;
(3) Fire Zone D–3, Division 2 Diesel Generator Fuel Tank Room—Elevations 712′–0” and 719′–0” on August 15, 2018; and
(4) Fire Zone CB–4, Division 1 Cable Spreading Room—Elevation 781′–0” on August 14, 2018.

71111.06—Flood Protection Measures

Internal Flooding (2 Samples)

The inspectors evaluated internal flooding mitigation protections in the following selected areas:

(1) Division 2 Service Water (SX) Pump Room on September 13, 2018; and
(2) Reactor Core Isolation Cooling (RCIC) Pump Room on September 27, 2018.

Cables (1 Sample)

The inspectors evaluated cable submergence protection in:

- Division 1 Cable Vault OSHA 1D;
- Division 2 Cable Vault OSHA 1B; and
- Division 3 Cable Vault OSHA 1C on September 5, 2018.

71111.11—Licensed Operator Requalification Program and Licensed Operator Performance

Operator Requalification (1 Sample)

The inspectors observed and evaluated the Crew ‘B’ licensed operator requalification training crew performance evaluation on August 22, 2018.

Operator Performance (1 Sample)

The inspectors observed and evaluated a control rod sequence exchange on August 24, 2018.
71111.12—Maintenance Effectiveness

Routine Maintenance Effectiveness (2 Samples)

The inspectors evaluated the effectiveness of routine maintenance activities associated with the following equipment and/or safety significant functions:

(1) EDG reverse power relay Part 21 on July 27, 2018; and
(2) Fire protection system on September 6, 2018.

Quality Control (1 Sample)

The inspectors evaluated maintenance and quality control activities associated with the following equipment performance issues:

(1) Fuel pool cooling and cleanup system on August 17, 2018.

71111.13—Maintenance Risk Assessments and Emergent Work Control (5 Samples)

The inspectors evaluated the risk assessments for the following planned and emergent work activities:

(1) HPCS load driver card replacement risk assessment on August 8, 2018;
(2) Division 2 battery charger load test risk assessment on July 2, 2018;
(3) Planned Yellow risk for Division 2 EDG SOW on September 19, 2018;
(4) Residual Heat Removal (RHR) 53B Valve temporary leak seal risk assessment on September 1, 2018; and
(5) Planned Yellow risk for Division 2 Shutdown SX SOW on September 24, 2018.

71111.15—Operability Determinations and Functionality Assessments (3 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

(1) Action Request (AR) 4158457: 1TITVX002 Controller Found in Manual;
(2) AR 4088766: Revise Documents to Allow Non-Split Bus Configuration; and
(3) AR 4158854: 1SXB5BA—2018 UT Results Lower than Expected.

71111.18—Plant Modifications (1 Sample)

The inspectors evaluated the following temporary or permanent modifications:

(1) Engineering Change (EC) 624143: Temporary Power for Backup Power for 0SS12E from 1AP25E.

71111.19—Post Maintenance Testing (5 Samples)

The inspectors evaluated the following post maintenance tests:
(1) Testing of Division 4 Nuclear Safety Protection System after maintenance on September 19, 2018;
(2) Testing of fire pump ‘A’ following battery replacement on July 13, 2018;
(3) Testing of HPCS injection valve after repair on July 2, 2018;
(4) Testing of VC–B following SOW on September 6, 2018; and

71111.22—Surveillance Testing

The inspectors evaluated the following surveillance tests:

Routine (4 Samples)

(1) Clinton Power Station (CPS) 9054.01C004: Combined RCIC High Pressure Operability Checks and RCIC Cold Quick Restart on July 23, 2018;
(2) CPS 9080.12: Fuel Oil Transfer Pump Operability on August 20, 2018;
(3) CPS 9015.01: Standby Liquid Control Pump Operability on September 7, 2018; and
(4) CPS 9053.07: Residual Heat Removal ‘C’ Pump Operability on September 8, 2018.

In-Service (1 Sample)

(1) CPS 9069.01: Shutdown Service Water Operability Test on August 15, 2018.

71114.06—Drill Evaluation

Emergency Planning Drill (1 Sample)

The inspectors evaluated the annual exercise for Crew ‘C’ on August 28, 2018.

OTHER ACTIVITIES – BASELINE

71151—Performance Indicator Verification (3 Samples)

The inspectors verified licensee performance indicators submittals listed below:

(1) MS05: Safety System Functional Failures–1 Sample (07/01/2017–06/30/2018);
(2) MS09: Residual Heat Removal Systems–1 Sample (07/01/2017–06/30/2018); and
(3) MS10: Cooling Water Support Systems–1 Sample (07/01/2017–06/30/2018).

71152—Problem Identification and Resolution

Annual Follow-Up of Selected Issues (1 Sample)

The inspectors reviewed the licensee’s implementation of its corrective action program (CAP) related to AR 4110222, “NRC 2017006 NRC Identified an HU [human performance] Cross-Cutting Theme.”
Licensee Event Reports (3 Samples)

The inspectors evaluated the following licensee event reports which can be accessed at [https://lersearch.inl.gov/LERSearchCriteria.aspx](https://lersearch.inl.gov/LERSearchCriteria.aspx):

1. Licensee Event Report (LER) 05000461/2017–002–02, Failure of the Division 1 Diesel Generator Ventilation Fan Load Sequence Relay Circuit during Concurrent Maintenance of RHR Division 2 Results in an Unanalyzed Condition. The original LER was closed in NRC Integrated Inspection Report 05000461/2017004 (ML18043A594);
2. LER 05000461/2018–001–00, Degraded Personnel Airlock Interlock Results in Loss of Primary Containment. A minor violation was identified as a result of this issue and is documented in the inspections results section of this report; and
3. LER 05000461/2018–002–00, Division 2 Diesel Generator Inoperability Due to Air Receiver Remaining Isolated Following Clearance Removal Resulting in Unplanned Shutdown Risk Change. This event was the subject of an Apparent Violation documented in Inspection Report 05000461/2018050 (ML18235A170).

OTHER ACTIVITIES—TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL

The inspectors reviewed the licensee’s response to NOV 05000461/2017002–02 and determined the reason for the violation, the corrective actions taken and planned to address recurrence, and the date when full compliance will be achieved for this violation is adequately addressed and captured on the docket.

INSPECTION RESULTS

Failure to Revise an Operability Evaluation When No Longer Meeting a Compensatory Measure

<table>
<thead>
<tr>
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<th>Significance</th>
<th>Cross-Cutting Aspect</th>
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The inspectors identified a Green finding for the failure to revise an operability evaluation when no longer meeting a compensatory measure, in accordance with OP–AA–115, “Operability Determinations,” Revision 21. Specifically, the licensee failed to revise the operability evaluation documented in EC 387664 when no longer maintaining the Division 1 and Division 2 safety-related buses in a split bus configuration from November 2017 through June 2018.
On January 30, 2012, Byron Nuclear Station Unit 2 tripped on a reactor coolant pump under-voltage condition. The under-voltage condition was initiated by a component failure in the switchyard which resulted in a phase-C open circuit. As a result, the NRC issued Bulletin 2012–01, “Design Vulnerability in Electric Power System,” which required licensees to respond to multiple questions on equipment response during a similar scenario. Clinton Station responded to Bulletin 2012–01 in Exelon Letter RS–12–156. One of the questions in the bulletin was: “If the design does not detect and automatically respond to a single open phase circuit condition or high impedance ground fault condition on a credited offsite power circuit or another power source, describe the consequence of such an event and the plant response.” Clinton’s response stated, in part, “An open single phase on RAT [reserve auxiliary transformer] ‘B’ would affect both Division 2 and Division 3. Division 1 is redundant to Division 2. Division 1 would be unaffected and could accomplish the intended DBA [design basis accident] safety function. An open single-phase on the ERAT [emergency reserve auxiliary transformer] would only affect Division 1, leaving both Divisions 2 and 3 available to respond to a DBA.” They also stated, “The following interim compensatory actions were taken to promptly diagnose and respond to degraded offsite power sources due to single-phase open circuit conditions: ….f. Aligned normal configuration of ESF [engineered safety features] bus 1A1 (Division 1) on one offsite source with bus 1B1 (Division 2) on the other offsite source.” A similar response was provided for other questions posed by Bulletin 2012–01.

The licensee also performed an operability evaluation documented in EC 387664. This operability evaluation concluded the impacted electrical components were operable but non-conforming since the components were not able to automatically respond to a degraded voltage condition due to an open phase. The licensee also documented and implemented multiple compensatory measures in response to this conclusion. Compensatory measure #6 stated, “Issue the expectation to maintain the 4kV ESF buses (the Division 1 and Division 2 safety buses) in a split configuration to the extent possible until this issue is resolved. It is recognized that surveillances, maintenance or other operating conditions may require other configurations for limited periods of time.” The operability evaluation also listed the effects of the compensatory action to be “reduced plant vulnerability by ensuring the availability of at least one ESF bus.”

In October 2017, Ameren commenced work on building a ring bus to increase the reliability of the 138kV line supplying power to the ERAT. Exelon personnel reached out to Ameren to inquire on the potential impacts to the 138kV line during this construction. Ameren informed Exelon there would be no impact other than when they needed to take the 138kV line out of service due to work in close proximity to the lines, and they communicated specific dates when this was set to occur. On November 5, 2017, the ERAT static Var (Volt-amperes resistance) compensator tripped due to the breaker supplying the 138kV line tripping and reclosing. Ameren stated the breaker trip and reclosure was caused by weather and unrelated to the work being performed to build the ring bus. After this occurrence, the licensee transferred the Division 1 4kV bus from the ERAT to RAT ‘B’. When this occurred the licensee was no longer meeting the operability evaluation compensatory measure since both the Division 1 and Division 2 safety buses were being powered by RAT ‘B’. In addition, the licensee decided to leave both safety-related buses on the RAT rather than keep them in a split bus configuration for the duration of the time Ameren was building the ring bus offsite.
On December 31, 2018, a senior reactor operator wrote AR 4088766, “Revise Documents to Allow Non-Split Bus Configuration.” In the AR, the senior reactor operator requested EC 387664 and Operations Standing Order 2012–01 be revised since both safety buses were aligned to the RAT. The senior reactor operator also stated this configuration was contrary to the guidance provided in the documents discussed above, including EC 387664. The licensee created an action for engineering to perform an evaluation, but this action was moved. It was ultimately decided the evaluation was not necessary because the due date was set after the May refueling outage, at which point the Division 1 and 2 safety-related buses would be returned to a split bus configuration.

On May 30, 2018, the licensee contacted Ameren to inquire when construction of the ring bus would be complete. Ameren stated the work was scheduled for completion in a couple of days but did not provide an exact date. Exelon did not reach out to Ameren again until June 21, 2018, at which point Ameren confirmed they were done with work for the summer and would resume again in the fall. Clinton returned the Division 1 and 2 safety buses to a split bus configuration on June 28, 2018, at which point they were back in compliance with the compensatory measure contained in the operability evaluation (EC 387664) and standing order.

Procedure OP–AA–108–115, Section 4.3.1 stated, “An Operability Evaluation should be revised, as a minimum, to correct errors, to incorporate pertinent updated information, to evaluate changes in conditions or known causes of degradation/nonconformance, or for associated compensatory measure/corrective action due date changes.” The inspectors discussed this procedure statement with the licensee and verified operability evaluation revisions were expected due to changes in compensatory measures. Though the licensee recalls discussing the decision to place both safety buses on one offsite source, no formal evaluation or revision to the operability evaluation or standing order was performed to support keeping the safety buses on the same offsite source for more than a limited period of time.

Corrective Actions: The licensee restored the Division 1 and Division 2 safety buses to a split bus configuration by powering the Division 1 bus from the ERAT and the Division 2 bus from RAT ‘B’.

Corrective Action Reference: Action Request 4185326, “NRC 3Q16 Proposed Green Finding for Open Phase”

Performance Assessment:

Performance Deficiency: The inspectors determined the licensee’s failure to revise an operability evaluation when no longer meeting a compensatory measure, in accordance with OP–AA–108–115, “Operability Determinations,” Revision 21 was a performance deficiency. Specifically, the licensee failed to revise the operability evaluation documented in EC 387664 when no longer maintaining the Division 1 and Division 2 safety buses in a split bus configuration from November 2017 through June 2018.

Screening: The inspectors determined the performance deficiency was more than minor because it adversely affected the equipment reliability attribute of the Mitigating Systems Cornerstone and its objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the purpose for maintaining the safety buses separate was to reduce plant vulnerability by ensuring the availability of at least one safety bus if a loss of single phase occurred. By not
evaluating the potential impacts of maintaining the Division 1 and Division 2 safety buses on one offsite source for an extended period of time, the licensee did not ensure the availability of the safety buses on the loss of a single open phase. No additional compensatory measures for this specific aspect were planned or evaluated.

Significance: The inspectors assessed the significance of the finding using SDP Appendix A, “The Significance Determination Process for Findings At-Power,” Exhibit 2, “Mitigating Systems Screening Questions.” The finding screened as having very low safety significance (Green) because it did not result in the loss of operability or functionality of the electrical distribution system.

Cross-Cutting Aspect: The finding had a cross-cutting aspect in the Change Management component of the Human Performance cross-cutting area, which states, “leaders use a systematic process for evaluating and implementing change so that nuclear safety remains the overriding priority.” Specifically, the licensee did not use a systematic approach in the decision making process when changing the configuration of the safety buses for an extended period of time. (H.3)

Enforcement:

The inspectors did not identify a violation of regulatory requirements associated with this finding since the operability evaluation/determination process was not required by the NRC.

71152—Problem Identification and Resolution

<table>
<thead>
<tr>
<th>Observation</th>
<th>71152 – Annual Sample Review</th>
</tr>
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</table>

On March 1, 2018, the licensee issued IR 4110222, “NRC 2017006 NRC Identified An HU Cross-Cutting Theme.” This IR documented the NRC had identified 22 findings over the previous 12 months caused by human performance deficiencies. The inspectors reviewed IR 4110222 and found information indicating the corrective actions to address the human performance cross-cutting theme were included in IR 4089490.

The licensee generated IR 4089490, “R.1 Performance Not Meeting Action Plan Objectives and Goals,” on January 2, 2018. Under this IR the Regulatory Assurance group was tasked with generating a recovery plan to get the station back on track in addressing the issues identified in corrective action program evaluation (CAPE) 3970178. However, this CAPE was subsequently cancelled by the licensee.

After CAPE 3970178 was cancelled, the licensee captured the issue of more than 20 Human Performance cross-cutting issues in the previous 12 months in IR 3996571,”Clinton Power Station Reduced Regulatory Margin,” dated April 7, 2017. The licensee completed a CAPE for this IR on December 7, 2017 and determined the human performance issues occurred due to Clinton personnel having an inadequate level of sensitivity to regulatory requirements, weakness in knowledge of regulatory requirements, and the failure to reinforce expectations for compliance. The corrective actions associated with this CAPE were to conduct training to all levels of management and individual contributors regarding the station’s position (at that time) compared to their industry peers and within the NRC’s Action Matrix. The corrective
actions associated with this CAPE were completed in 2017. The licensee planned to review the effectiveness of these corrective actions by the end of January 2019.

On February 5, 2018, the licensee performed a self-assessment documented under IR 4090740, “Clinton – Equipment Performance.” The purpose of the self-assessment was to “identify underlying and/or latent gaps in behaviors and process implementation that have collectively resulted in or contributed to equipment performance issues.” Licensee management informed the resident inspectors that the corrective actions associated with this self-assessment were meant to address the Human Performance cross-cutting theme identified by the NRC at the end of 2017. Corrective actions from the self-assessment included: 1) performing training to emphasize corrective actions program procedures and 2) reviewing any corrective actions closed to one time training to determine whether a need for ongoing, periodic training existed.

On May 17, 2018, the licensee issued IR 4138790, “CC: Division 2 DG [diesel generator] Air Receivers Found Isolated During Rounds.” This was a human performance configuration control event that resulted in the Division 2 diesel generator being inoperable and unavailable at the same time the Division 1 diesel generator was out of service for refueling outage related maintenance. The NRC initiated a special inspection team (SIT) to review this event. The findings of the team were issued in NRC inspection report 05000461/2018050. The SIT found the event occurred due to multiple examples of the failure to follow work instructions/procedures.

The corrective actions taken by the licensee after the configuration control event included:

- Operations Director sent memos to the operations shift managers related to accountability and procedure use and adherence. These memos, which were required to be acknowledged by all operations department personnel and briefed by the operations shift managers, covered various administrative procedural requirements including: procedure use and adherence, control of plant equipment, stop work criteria, operations decision making and operability procedure requirements.
- Face to face discussions were held with Operations Department leaders and the Operations Director.
- Just-in-time training was given to all operators on the requirements of HU–AA–104, Procedure Use and Adherence.
- Changed the clearance and tagging methodology to include signed restoration steps. Restoration steps were previously included as restoration instruction "notes." These notes were expected to be completed as a procedure, however, the clearance order was allowed to be closed without documenting these restoration steps had been completed.
- Created a "Procedure-in-Progress" program.
- Conducted a three Day Stand-down with all station personnel following the outage – covered case studies and learnings from the event.
- Revised the equipment operator rounds points to include logging emergency diesel generator starting air pressures down-stream of the air receiver isolation valves.
- Operations shift managers are reviewing logs and at least two completed procedures at the end of each shift.
- Performing training assessments - operator training will included procedural compliance.
• Equipment operator training on general area checks and operator rounds.

Based on the information provided above, the inspectors concluded the licensee’s corrective actions taken during 2017 and the first half of 2018 to prevent human performance events were ineffective. Specifically, the licensee’s actions were focused improving general knowledge regarding regulatory margin, corrective action procedures, and the need for training rather than focusing on correcting and improving human performance related behaviors. As a result, weaknesses in human performance behaviors (such as the use of and compliance with licensee procedures/work instructions) continued to occur and resulted in a safety-related diesel generator unknowingly being rendered inoperable. The SIT determined the licensee’s immediate corrective actions for this event were appropriate. However, the effectiveness of other, longer-term corrective actions taken after the Division 2 EDG configuration control event have not yet been evaluated.

71153—Follow-Up of Events and Notices of Enforcement Discretion

Minor Violation – Failure to Perform Repairs and the Post Maintenance Test in Accordance with Station Procedures

Minor Violation: Title 10 CFR 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” requires, in part, that activities affecting quality be prescribed by documented procedures of a type appropriate to the circumstances and be accomplished in accordance with these procedures. The licensee established procedure CPS 8219.01, “Personnel Airlock Maintenance”, Revision 19, as the implementing procedure for performing maintenance on a safety-related personnel airlock, an activity affecting quality.

Procedure CPS 8219.01, Section 2.1.4 states in part, “Personnel Airlock Maintenance Checklist, shall be filed with completed work documents.”

Contrary to the above, on March 30, 2018, the licensee failed to follow Section 2.1.4 of procedure CPS 8219.01. Specifically, the licensee failed to file the personnel airlock maintenance checklist with the completed work documents. After the inspectors questioned the whereabouts of the checklist, it was discovered that it was not used when performing the repair or post maintenance test on the personnel airlock even though the procedure directs personnel to record pertinent data on the checklist during the maintenance activity.

Screening: The inspectors determined the performance deficiency was minor because it was determined to be a documentation issue and the values required to be documented in the checklist were satisfactory, therefore, there was no adverse impact. The licensee documented this issue in AR 4126058, “NRC ID: Documentation Deficiency Identified.”

Violation: This failure to comply with 10 CFR 50 Appendix B, Criterion V, “Instructions, Procedures, and Drawings” constitutes a minor violation that is not subject to enforcement action in accordance with the NRC’s Enforcement Policy.

Licensee Event Report 05000461/2018–001–00 is closed.
EXIT MEETINGS AND DEBRIEFS

The inspectors confirmed that proprietary information was controlled to protect from public disclosure. No proprietary information was documented in this report.

- On October 11, 2018, the inspectors presented the quarterly integrated inspection results to Mr. T. Stoner, and other members of the licensee staff.
- On July 13, 2018, the inspector presented the NOV 05000461/2017002–02 response inspection results to Mr. T. Stoner, and other members of the licensee staff.

DOCUMENTS REVIEWED

71111.04—Equipment Alignment
- AR 4161275; VC ‘B’ Chiller Oil Level Dropped Out of Sight During Startup
- AR 4161378; EOID: VC ‘B’ (0VC13CB) Tripped on Low Oil Pressure During Start
- AR 4160639; EOID: VC ‘B’ Chiller Tripped Due to Failure of 1SX019B
- CPS 3402.01V001; Control Room HVAC Valve Lineup; Revision 17a
- CPS 3402.01V002; Control Room HVAC Instrument Valve Lineup; Revision 6
- CPS 3402.01E001; Control Room HVAC Electrical Lineup; Revision 10e
- CPS 3506.01P005; Placing Division 2 Diesel Generator 1B in Standby; Revision 0
- CPS 3506.01C002; Diesel Generator 1B Pre-Start Checklist; Revision 12a
- CPS 3506.01V001; Division 2: Diesel Generator and Support Systems Valve Lineup; Revision 13a
- CPS 3319.01E001; Standby Gas Treatment Electrical Pump; Revision 11
- CPS 3319.01V001; Standby Gas Treatment Valve Lineup; Revision 8
- CPS 3319.01; Standby Gas Treatment (VG); Revision 17b

71111.05AQ—Fire Protection Annual/Quarterly
- CPS 1893.04M803; 699’ Screen House: ‘A’ (North) Fire Pump Room Prefire Plan; Revision 6

71111.06—Flood Protection Measures
- CC–AA–309–1001; Internal Flooding Analysis; Revision 8
- CY–CL–3221–02; Operating Cable Vault Pumping Stations; Revision 15
- CPS 1003.01F003; Engineering Change Notice; Revision 4
- CPS 5013.08; Alarm Panel 5013 Annunciators—Row 8; Revision 25c
- CPS 4304.01; Flooding; Revision 6c
- CPS 8378.01; Inspection of Cable Vault and Cable Vault Sump Pumps; Revision 2
- Drawing M01–1600, Sheet Number 6; Environmental Zone Map Auxiliary, Fuel & Containment Basement Floor Plan El. 707‘-6” & 712‘0”; Revision A
- Drawing No. AB–707–11, Sheet No. 3
- Drawing No. AB–707‘-6” & 712‘-0”; Auxiliary Building Barrier
- WO 1944812–01; Perform Manhole Cable Trays Inspection (Siesmic—Div. 2)
- WO 1944813–01; Perform Manhole Cable Trays Inspection (Siesmic—Div. 1)
- AR 4160042; 0SHC–1C Cable Vault Requires Immediate Pumping
- AR 4160041; 0SHA–1D (DIV I) Cable Vault “Advisory” Level (Cables Dry)
71111.12—Maintenance Effectiveness

- AR 4162045; EOID: OFP01PA, Fire Pump A, Failed to Start for Operability
- AR 4138425; EOID: Fire Pump Did Not Start Within Expected Pressure Band
- AR 4155730; OFP01PA Failed to Start in Manual 1 Position
- AR 4166798; NRC ID MRule IR Review Did Not Contain Sufficient Detail
- AR 4139796; Incorrect Fuse Type Installed During MCC Clean & Inspects
- AR 4133764; Non-Safety Related Valve Operator Installed in Safety Relate
- ER–AA–310–1001; Maintenance Rule—Scoping; Revision 4
- Drawing E02–0FP99, Sheet Number 005; Fire Protection & Detection Sys. (FP) Diesel Fire Pump A (0FP01PA); Revision P

71111.13—Maintenance Risk Assessments and Emergent Work Control

- WO 1959497–02; 9382.09B22 VER 125V DC Charger Load Test (Div II) (1DC07E)
- WO 4798571–23; HPCS 1E22–F004 Valve Found Open
- WC–AA–101; On-Line Work Control Process; Revision 28
- OP–AA–111–101; Operating Narrative Logs and Records; Revision 13
- AR 4151844; W/O 4798571-23 Was Accidently Canceled in Passport
- AR 4149697; NRC Communications on Dedicated Operator for 1E22–F004
- AR 4158509; Manual Operator Actions Credited for System Availability

71111.15—Operability Determinations and Functionality Assessments

- IN 89–80; Potential for Water Hammer, Thermal Stratification, and Steam Binding in High-Pressure Coolant Injection Piping
- Drawing M10–9115, Sheet Number 001; P&ID/C&I Diagram Sw. Gear Heat Removal Sys (VX) Supply Fan Dmpr. Temp. Ind. & Alarm for Fan 1VX03CA, CB, CC; Revision B
- Drawing E02–1VX99, Sheet Number 005 Switch Gear Heat Removal Sys (VX) Swgr 1B & 1B1 Ht Removal Fan 1VX03CB & Battery Room 1B & 1B1 Exhaust Fan 1VX05CB; Revision X
- Drawing E02–1VX99, Sheet Number 008; Switch Gear Heat Removal Sys (VX) Switchgear Room 1B1 Heat Removal Damper 1VX03YB; Revision Z
- AR 4158457; 1TITVX002 Controller Found in Manual
- AR 4158854; 1SX5BA: 2018 UT Results Lower than Expected
- CPS 3412.01; Essential Switchgear Heat Removal (VX); Revision 15f
- CPS 3412.01C002; Temporary Exhaust Fan Use with Switchgear HVAC Out of Service (Div 2); Revision 0a
- CPS 3211.01; Filling, Venting, and Draining; Revision 32f
- CPS 3501.01H001; Loss of RAT SVC Actions Hard Card; Revision 0b
- CPS 5011.07; Alarm Panel 5011 Annunciators—Row 7; Revision 29d
- CPS 5009.03; Alarm Panel 5009 Annunciators—Row 3; Revision 29e
- OP–AA–108–115; Operability Determinations (CM–1); Revision 21
- EC 402610; Evaluation of Functionality of Critical AC Components Under Elevated Temperatures Due to Unavailability of VX Equipment; Revision 0
- CC–AA–309–1001; Division I, II and III SX Pipe Wall Thinning Analysis; Revision 9
- ER–AA–335–004; Ultrasonic Thickness Calibration Sheet; Revision 8
- OP–AA–108–115; Operability Evaluation; Revision 16
- WO 4571560; RAT B Open Phase Modification

71111.18—Plant Modifications

- EC 624143; Temp Power for Back Up Power for 0SS12E from 1AP25E (Unit Sub 1M); Revision 0

71111.19—Post Maintenance Testing

- AR 4171722; WMID WW 1836 VC ‘B’ SOW LCO Index in Variance
- AR 4170721; 4.0 Critique for VC ‘B’ and RH ‘B’ SOW Schedule Adherence
- AR 4170426; VC Chiller ‘B’ Trip
- AR 4149697; NRC Communications on Dedicated Operator for 1E22–F004
- AR 4162785; IR Is to Document the Cause of W/O 4798571–23 Being Canceled
- AR 4133609; EOID Div 4 Inverter Shifted to Bypass to Load When Loaded
- WO 1585791–01; 8410.04 Molded Base Circuit Breaker/Bucket
- WO 4777598–01; 0PC–VC193 VC Chiller B Head Pressure Controller Oscillating
- WO 4777598–02; 0PC–VC193 VC Chiller B Head Pressure Controller Oscillating
- WO 4777598–04; 0PC–VC193 VC Chiller B Head Pressure Controller Oscillating
- WO 4777598–05; 0PC–VC193 VC Chiller B Head Pressure Controller Oscillating
- WO 1960170–04; 0FP01PA Replace Batteries
- WO 4666127–03; Perform Maintenance Checks on 0FP01PA
- WO 1960170–03; 0FP01PA Replace Batteries
- WO 1960170–01; 0FP01PA Replace Batteries
- WO 1960170–02; 0FP01PA Replace Batteries
- WO 4810882–04; 1TITVX002 Controller Found in Manual
- WO 4810882–03; 1TITVX002 Controller Found in Manual
- WO 4810882–02; 1TITVX002 Controller Found in Manual
- WO 4810882–01; 1TITVX002 Controller Found in Manual
- WO 4798571–04; HPCS 1E22-F004 Valve Found Open
- WO 4798571–05; HPCS 1E22-F004 Valve Found Open
- WO 1868121–03; Replace Components, Calibrate Inverter—1C71S001D
- WO 1868116–03; 8410.04 Testing (Required O.R.M. Test)—1C71P001D/CB20
- WO 1868118–03; 8410.04 Molded Case Circuit Breaker Testing—1C71P001D/CB17
- WO 1868119–03; 8410.04 Molded Case Circuit Breaker Testing—1C71P001D/CB19
- WO 1868121–06; Replace Components, Calibrate Inverter—1C71S001D
- CPS 9071.01; Diesel Driven Fire Pumps Operability Test; Revision 40e
- CPS 9377.02; Fire Protection Diesel 24 Vdc Battery Check; Revision 33
- Exelon Nuclear Issue 4157525; Administrative Error Identified During Package Review; 07/20/2018

71111.22—Surveillance Testing

- WC–AA–111–F–01; Suppression Pool Temperature Log; Revision 0
- WC–AA–104; Risk Screening/Mitigation Plan; Revision 23
- WC–AA–104; Integrated Risk Management; Revision 25
- AR 4157864; Surveillance Procedure 9054.01C004 Errors and is Inadequate
- WO 4597586–05; 9054.01D20 OP RCIC Pump Operability (Quick Start)
- WO 1954189–01; Perform LOOP 1VH003 Calibration (8801.02)
- WO 4809233–01; 9069.01A20 OP SX Pump Oper Test (SX Pump A)
- WO 4791845–01; 9015.01A23 OP SLC Pump Operability (SLC Pump A)
- WO 4612610–01; 9053.07, 1E12C002C Comprehensive Pump Test
- WO 4809233–05; 9069.01A20 OP SX Pump Oper Test (SX Pump A)
- WO 4809233–03; 9069.01A20 OP SX Pump Oper Test (SX Pump A)
- WO 4809233–02; 9069.01A20 OP SX Pump Oper Test (SX Pump A)
- WO 4809233–01; 9069.01A20 OP SX Pump Oper Test (SX Pump A)
- CPS 9054.01C004; Combined RCIC 1E51–C001) High Pressure Operability Checks and
RCIC Cold Quick Restart; Revision 5f
- CPS 3310.01; Reactor Core Isolation Cooling (RI); Revision 30c
- CPS 9054.01; RCIC System Operability Check; Revision 44b
- CPS 9053.07; RHR B/C Pumps & RHR B/C Water Leg Pump Operability; Revision 48b
- CPS 9053.07D001; RHR B/C Pump & RHR B/C Water Leg Pump Operability Data Sheet;
Revision 45e
- CPS 9069.01; Shutdown Service Water Operability Test; Revision 49f

71153—Follow-Up of Events and Notices of Enforcement Discretion

- CAPE 4121240; Containment 828 Personnel Airlock Interlock Failure

92702—Follow Up on Traditional Enforcement Actions Including Violations, Deviations,
Confirmatory Action Letters, Confirmatory Orders, and Alternative Dispute Resolution
Confirmatory Orders

- U–604368; Exelon Letter to NRC, Reply to a Notice of Violation IR 05000461/2017002–02;
09/07/2017
- SL–014220; S&L Report, Clinton Power Station Fuel Building Crane Compliance Review;
02/08/2018
- AR 4001089; NRC Cited Violation for Design Control; 04/21/2017
- SDQ15–24DG09; Mezzanine Floor—Design of Crane Girder; Revision 15
- IP–S–0328; Qualification of the Fuel Building Crane Rails, Rail Clips, Bolts and Splices;
Revision 0
- EC 62662; Fuel Building Crane Rail Evaluation; Revision 0