January 30, 2006

Mr. Christopher M. Crane
President and Chief Nuclear Officer
Exelon Nuclear
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: CLINTON POWER STATION
NRC INTEGRATED INSPECTION REPORT 05000461/2005009

Dear Mr. Crane:

On December 31, 2005, the US Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Clinton Power Station. The enclosed report documents the inspection findings which were discussed on January 12, 2006, with Mr. R. Bement and other members of your staff.

This inspection examined activities conducted under your license as they relate to safety and to 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 inspectors identified two findings of very low safety significance (Green). Both of these findings involved violations of NRC requirements. However, because these violations were of very low safety significance and because the issues have been entered into the licensee's corrective action program, the NRC is treating these issues as non-cited violations, in accordance with Section VI.A.1 of the NRC's Enforcement Policy.

If you contest the subject or severity of a non-cited violation, 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, US Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Lisle, IL 60532-4352; the Director, Office of Enforcement, US Nuclear Regulatory Commission, Washington, DC 20555-0001; and the Resident Inspector Office at the Clinton Power Station Facility.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Mark A. Ring, Chief
Branch 1
Division of Reactor Projects

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

Enclosure: Inspection Report No. 05000461/2005009
w/Attachment: Supplemental Information

cc w/encl: Site Vice President - Clinton Power Station
Plant Manager - Clinton Power Station
Regulatory Assurance Manager - Clinton Power Station
Chief Operating Officer
Senior Vice President - Nuclear Services
Vice President - Operations Support
Vice President - Licensing and Regulatory Affairs
Manager Licensing - Clinton Power Station
Senior Counsel, Nuclear, Mid-West Regional Operating Group
Document Control Desk - Licensing

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No.:	50-461
License No.:	NPF-62
Report No.:	05000461/2005009
Licensee:	AmerGen Energy Company, LLC
Facility:	Clinton Power Station
Location:	Clinton, IL 61727
Dates:	October 1 through December 31, 2005
Inspectors:	B. C. Dickson, Senior Resident Inspector D. Tharp, Resident Inspector A. Barker, Project Engineer D. Melendez-Colon, Reactor Engineer M. Wilk, Reactor Engineer T. Ploski, Senior Emergency Preparedness Analyst D. McNeil, Reactor Engineer C. Zoia, Reactor Engineer M. Mitchell, Radiation Specialist C. Matthews, Illinois Emergency Management Agency Inspector
Approved by:	Mark Ring, Chief Branch 1 Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000461/2005009; AmerGen Energy Company LLC; 10/01/2005 - 12/31/2005; Clinton Power Station; Post Maintenance Testing and Surveillance Testing.

This report covers a 3-month period of baseline resident inspection and announced baseline inspections on radiation protection, emergency preparedness and licensed operator requalification. The inspection was conducted by Region III inspectors and the resident inspectors. Two Green findings involving two non-cited violations (NCVs) were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be "Green" or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. Inspector-Identified and Self Revealing Findings

Cornerstone: Mitigating Systems

- Green. A self-revealing finding involving a non-cited violation (NCV) of Technical Specification 5.4.1 "Procedures," was identified. On September 30, 2005, the Division III emergency diesel generator failed to properly run following maintenance activities, due to the inadequate maintenance instructions. The inadequate maintenance instructions resulted in air being trapped in the governor oil system during the replacement of the governor's servo booster motor. The licensee determined that this issue was the result of a maintenance planner's failure to follow administrative guidelines for technical review during the development of the maintenance instructions. This issue resulted in extended outage and unavailability time for the emergency diesel generator.

  The inspectors determined that despite the fact that the issue involved work in progress, this issue was more than minor because the finding affected the Mitigating Systems Cornerstone objective of ensuring the availability of mitigating systems to prevent undesirable consequences. The issue resulted in the emergency diesel generator being unavailable for longer than expected by the plant staff. Following the initial maintenance run of the diesel generator, operators declared that the diesel generator was available for use if needed to respond to an event. Corrective actions by the licensee included developing lesson-learned information to share with other maintenance planners. Additionally, the licensee planned to add technical guidance related to venting air from the diesel governor to the diesel maintenance training material. The finding also affected the cross cutting area of human performance since the licensee's maintenance personnel failed to request technical guidance from the site engineering staff as directed by the licensee's administrative procedures. (Section 1R19)

- Green. The inspectors identified a finding involving a non-cited violation for inadequate corrective action. The licensee's failure to properly identify and correct a degraded electrical circuit in 2004, involving a high resistance connection on a fuse holder, resulted in the Division II emergency diesel generator subsystem being vulnerable to electrical circuit failure if called upon to complete its support function. The high resistance connection was caused by degraded grease-like material and dirt. This issue also resulted in the Division II diesel generator failure during a subsequent surveillance test.

  The inspectors determined that the finding was greater than minor because the finding affected the Mitigating Systems Cornerstone objective of ensuring the availability, reliability, and capability of mitigating systems to prevent undesirable consequences. The Division II emergency diesel generator 125 VDC system is a backup to the AC oil system in case of a loss of offsite power. Offsite power was not lost, therefore, there was not an actual loss of safety function for the diesel. Corrective actions by the licensee included replacing the fuse and fuse holder and expediting actions to address the extent of condition relative to the as-found condition of the fuse and fuse holder. The finding also affected the cross cutting area of problem identification and resolution since the licensee failed to adequately address the degraded circuit condition in a timely manner. (Section 1R22)

B. Licensee-Identified Violations

No findings of significance were identified.

REPORT DETAILS

Summary of Plant Status

The plant operated at approximately 95.5 percent rated thermal power (maintaining 103 percent electrical output) throughout most of the inspection period. On November 18, 2005, reactor power was reduced to 85 percent to reseat a potentially stuck open moisture separator reheater relief valve. On November 19, 2005, plant operators returned reactor power to 95.5 percent. On December 2, 2005, operators lowered reactor power to 49 percent in response to a ruptured main condenser tube and returned power to 95.5 percent on December 4, 2005. On December 18, 2005, operators lowered reactor power to 90 percent for a planned rod pattern adjustment (All rods out). Power was restored to 95 percent on December 18, 2005, and maintained there through the end of the inspection period.

1. REACTOR SAFETY

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

1R01 Adverse Weather (71111.01)

a. Inspection Scope

The inspectors reviewed the licensee's seasonal readiness preparation checklist for cold weather and to verify that it adequately covered risk-significant equipment and ensured that the equipment was in a condition to meet the requirements of Technical Specifications (TS), the Operations Requirements Manual (ORM), and the Updated Safety Analysis Report (USAR) with respect to protection from low temperatures. The inspectors verified that minor issues identified during the inspection were entered into the licensee's corrective action system by reviewing the associated Condition Reports (CR). The inspectors conducted more detailed system reviews and walkdowns for the reactor core isolation cooling storage tank and service air compressor intake. The inspectors also reviewed several issue reports related to main condenser tube leaks that seem to occur more frequently at the onset of cold weather. These issue reports and other documents reviewed during the inspection are listed at the end of this report. This activity represents one inspection sample.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignments (71111.04)

.1 Complete Semi-Annual

a. Inspection Scope

The inspectors conducted a complete system alignment inspection of the low pressure core spray (LPCS) system. This system was selected based on its high risk significance and mitigating systems function. The inspectors reviewed plant procedures, drawings, and the USAR to identify proper system alignment and visually inspected system valves, instrumentation, and electrical supplies to verify proper alignment, component accessibility, availability, and current material condition. The inspectors also completed a review of corrective action documents, work orders, and operator work around and challenges to ensure there were no current operability concerns with the system. Documents reviewed during this inspection are listed in the Attachment. These activities completed one inspection sample.

b. Findings

No findings of significance were identified.

.2 Partial Walkdowns

a. Inspection Scope

The inspectors performed partial walkdowns of accessible portions of divisions of risk-significant mitigating systems equipment during times when the divisions were of increased importance due to the redundant divisions or other related equipment being unavailable. The inspectors utilized the valve and electric breaker checklists listed in the Attachment to verify that the components were properly positioned and that support systems were lined up as needed. The inspectors also examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors reviewed outstanding work orders and CR associated with the divisions to verify that those documents did not reveal issues that could affect division function. The inspectors used the information in the appropriate sections of the USAR to determine the functional requirements of the systems. The documents listed at the end of this report were also used by the inspectors to evaluate this area. The inspectors performed two samples by verifying the alignment of the following divisions:

- Auxiliary power system
- Reactor core isolation cooling system

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05Q)

a. Inspection Scope

The inspectors conducted fire protection walkdowns which were focused on availability, accessibility, and the condition of fire fighting equipment, the control of transient combustibles and ignition sources, and on the condition and operating status of installed fire barriers. The inspectors selected fire areas for inspection based on their overall contribution to internal fire risk, as documented in the individual plant examination of external events with later additional insights, their potential to impact equipment which could cause a plant transient, or their impact on the licensee's ability to respond to a security event. The inspectors used the documents listed at the end of this report to verify that fire hoses and extinguishers were in their designated locations and available for immediate use, that fire detectors and sprinklers were not obstructed, that transient material loading was within the analyzed limits, and that fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors verified that minor issues identified during the inspection were entered into the licensee's corrective action program.

The inspectors reviewed portions of the licensee's fire protection evaluation report and the USAR to verify consistency in the documented analysis with installed fire protection equipment at the station.

The inspectors completed four samples by inspection of the following areas:

- Fire zone A - 1a: Elevation 707' 6", General Access Area (North)
- Fire zone A - 2a: Elevation 707' 6", RCIC Pump Room
- Fire zone A - 6: Elevation 707' 6", General Access Area (South)
- Fire zone CB-6a: Elevation 800' Main Control Room Complex

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

.1 Facility Operating History

a. Inspection Scope

The inspectors reviewed the plant's operating history from January 2004 through October 2005 to assess whether the licensed operator requalification training program had identified and addressed operator performance deficiencies at the plant.

b. Findings

No findings of significance were identified.

.2 Licensee Requalification Examinations

a. Inspection Scope

The inspectors performed a biennial inspection of the licensee's licensed operator requalification training test/examination program. The operating examination material reviewed consisted of four operating tests, each containing approximately two dynamic simulator scenarios and approximately five job performance measures. The written examinations reviewed consisted of four written examinations, each containing approximately 35 questions. The inspectors reviewed the annual requalification operating test and biennial written examination material to evaluate general quality, construction, and difficulty level. The inspectors assessed the level of examination material duplication from week-to-week during the current year operating test, and compared the operating test material from this year's operating tests (2005) with last year's operating tests (2004). The annual operating tests were conducted in September/October/November 2004 and September/October/November 2005. The examiners assessed the amount of written examination material duplication from week-to-week for the written examination administered in September/October/November 2005. The inspectors reviewed the methodology for developing the examinations, including the licensed operator requalification training program two year sample plan, probabilistic risk assessment insights, previously identified operator performance deficiencies, and plant modifications.

b. Findings

No findings of significance were identified.

.3 Licensee Administration of Requalification Examinations

a. Inspection Scope

The inspectors observed the administration of a requalification operating test to assess the licensee's effectiveness in conducting the test. The inspectors evaluated the performance of one shift crew in parallel with the facility evaluators during two dynamic simulator scenarios and evaluated various licensed crew members concurrently with facility evaluators during the administration of several job performance measures. The inspectors assessed the facility evaluators' ability to determine adequate crew and individual performance using objective, measurable standards. The inspectors observed the training staff personnel administer the operating test, including conducting pre-examination briefings, evaluations of operator performance, and individual and crew evaluations upon completion of the operating test. The inspectors evaluated the ability of the simulator to support the examinations. A specific evaluation of simulator performance was conducted and documented under Section 1R11.9, "Conformance With Simulator Requirements Specified in 10 CFR 55.46," of this report.

b. Findings

No findings of significance were identified.

.4 Examination Security

a. Inspection Scope

The inspectors observed and reviewed the licensee's overall licensed operator requalification examination security program related to examination physical security (e.g., access restrictions and simulator considerations) and integrity (e.g., predictability and bias). The inspectors also reviewed the facility licensee's examination security procedure, any corrective actions related to past or present examination security problems at the facility, and the implementation of security and integrity measures (e.g., security agreements, sampling criteria, bank use, and test item repetition) throughout the examination process.

b. Findings

No findings of significance were identified.

.5 Licensee Training Feedback System

a. Inspection Scope

The inspectors assessed the methods and effectiveness of the licensee's processes for revising and maintaining its licensed operator requalification training program up to date, including the use of feedback from plant events and industry experience information. The inspectors reviewed the licensee's quality assurance oversight activities, including licensee training department self-assessment reports. The inspectors evaluated the licensee's ability to assess the effectiveness of its licensed operator requalification training program and the licensee's ability to implement appropriate corrective actions.

b. Findings

No findings of significance were identified.

.6 Licensee Remedial Training Program

a. Inspection Scope

The inspectors assessed the adequacy and effectiveness of the remedial training conducted since the previous biennial requalification examinations and the training planned for the current examination cycle to ensure that the licensee addressed weaknesses in licensed operator or crew performance identified during training and plant operations. The inspectors reviewed remedial training procedures and individual remedial training plans.

b. Findings

No findings of significance were identified.

.7 Conformance With Operator License Conditions

a. Inspection Scope

The inspectors reviewed the facility and individual operator licensees' conformance with the requirements of 10 CFR Part 55. The inspectors reviewed the facility licensee's program for maintaining active operator licenses and to assess compliance with 10 CFR 55.53 (e) and (f). The inspectors reviewed the procedural guidance and the process for tracking on-shift hours for licensed operators and which control room positions were granted watch-standing credit for maintaining active operator licenses. The inspectors reviewed the facility licensee's licensed operator requalification training program to assess compliance with the requalification program requirements as described by 10 CFR 55.59 (c). Additionally, medical records for 16 licensed operators were reviewed for compliance with 10 CFR 55.53 (i).

b. Findings

No findings of significance were identified.

.8 Annual Operating Test Results

a. Inspection Scope

The inspector reviewed the overall pass/fail results of the annual operating examination which consisted of job performance measure and simulator operating tests (required per 10 CFR 55.59(a)(2)) administered by the licensee. The inspectors reviewed the overall pass/fail results for the biennial written examination (required per 10 CFR 55.59(a)(2)) administered by the licensee. The overall results were compared with the significance determination process in accordance with NRC Manual Chapter 0609I, “Operator Requalification Human Performance Significance Determination Process (SDP).” This represented one sample.

b. Findings

No findings of significance were identified.

.9 Conformance With Simulator Requirements Specified in 10 CFR 55.46

a. Inspection Scope

The inspectors assessed the adequacy of the licensee’s simulation facility (simulator) for use in operator licensing examinations and for satisfying experience requirements as prescribed in 10 CFR 55.46, “Simulation Facilities.” The inspectors also reviewed a sample of simulator performance test records (i.e., transient tests, scenario test and discrepancy resolution validation test), simulator discrepancy and modification records, and the process for ensuring continued assurance of simulator fidelity in accordance with 10 CFR 55.46. The inspectors reviewed and evaluated the discrepancy process to ensure that simulator fidelity was maintained. Open simulator discrepancies were reviewed for importance relative to the impact on 10 CFR 55.45 and 55.59 operator

actions as well as on nuclear and thermal hydraulic operating characteristics. The inspectors conducted interviews with members of the licensee's simulator staff about the configuration control process and completed the IP 71111.11, Appendix C, checklist to evaluate whether or not the licensee's plant-referenced simulator was operating adequately as required by 10 CFR 55.46 (c) and (d).

b. Findings

No findings of significance were identified.

.10 Quarterly Resident Inspector Review

a. Inspection Scope

The inspectors reviewed licensed-operator requalification training to evaluate operator performance in mitigating the consequences of a simulated event, particularly in the areas of human performance. The inspectors evaluated operator performance attributes which included communication clarity and formality, timely performance of appropriate operator actions, appropriate alarm response, proper procedure use and adherence, and senior reactor operator oversight and command and control.

Crew performance in these areas was compared to licensee management expectations and guidelines as presented in the following documents:

- ESG-LOR-85 - "Loss of 6.9 kV Bus 1B, ATWS - Drywell Leak"
- ESG-LOR-74 - "Steam Leak, Drywell Leak, Figure N Blowdown"
- OP-AA-101-111, "Roles and Responsibilities of On-shift Personnel," Rev 0
- OP-AA-103-102, "Watchstanding Practices," Rev 2
- OP-AA-104-101, "Communications," Rev 1
- OP-AA-106-101, "Significant Event Reporting," Rev 2

The inspectors also assessed the performance of the training staff evaluators involved in the requalification process. For any weaknesses identified, the inspectors observed that the licensee evaluators also noted the issues and discussed them in the critique at the end of the session. The inspectors verified all issues were captured in the training program and licensee corrective action process.

These activities completed two inspection samples.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12Q)

The inspectors reviewed the effectiveness of the licensee's maintenance efforts in implementing the Maintenance Rule (MR) requirements, including a review of scoping, goal-setting, performance monitoring, short and long-term corrective actions, and current equipment performance problems. Systems were selected based on their

designation as risk significant under the maintenance rule, or being in the increased monitoring (MR category (a) (1)) group. In addition, the inspectors interviewed the system engineers and maintenance rule coordinator. The inspectors also reviewed condition reports and associated documents for appropriate identification of problems, entry into the corrective action system, and appropriateness of planned or completed actions. The documents reviewed are listed at the end of the report. The inspectors completed two samples by reviewing the following:

- Reactor protection system
- Containment ventilation system and continuous containment purge system

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessment (71111.13)

The inspectors observed the licensee's risk assessment processes and considerations used to plan and schedule maintenance activities on safety-related structures, systems, and components, particularly to ensure that maintenance risk and emergent work contingencies had been identified and resolved. The inspectors completed five samples by assessing the effectiveness of risk management activities for the following work activities or work weeks:

- Emergency reserve auxiliary transformer system outage
- Standby liquid control (both trains) inoperable due to the performance of limit switch maintenance on 1C41-F031 (WO# 668279)
- Division I diesel generator ventilation fan control in pull-to-lock to support troubleshooting activities concurrent with planned maintenance on division 1 essential switchgear heat removal (WR# 189992)
- Cumulative review of licensee risk management assessments following transfer of 1B1 Bus to the reserve auxiliary transformer and then back to the emergency reserve auxiliary transformer for post maintenance test on 1AP09EC synch check relay as directed by WO# 758834-02, division II standby gas treatment system out of service for planned maintenance, and division II essential switchgear heat removal fan and chiller out of service for planned maintenance
- Licensee risk assessment activities and redundant system protection activities following a trip of the division III diesel during a monthly run

b. Findings

No findings of significance were identified.

1R14 Non-routine Evolutions (71111.14)

a. Inspection Scope

The inspectors reviewed personnel performance during planned and unplanned plant evolutions and selected licensee event reports focusing on those involving personnel

response to non-routine conditions. The review was performed to ascertain that operator responses were in accordance with the required procedures. In particular, the inspectors completed one sample by reviewing personnel performance during the following plant event:

- Plant Operations activities in response to main condenser tube failure

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the following operability determinations and evaluations affecting mitigating systems to determine whether operability was properly justified and the component or system remained available such that no unrecognized risk increase had occurred. The inspectors completed three samples of operability determinations and evaluations by reviewing the following:

- Division II diesel generator - failure of division II DC oil pumps to keep running due to a high current overload on F5-1 fuse
- Reactor core isolation cooling tank vortex issue
- High pressure core spray suppression pool suction valve

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (71111.16)

.1 Review of selected workaround issue

a. Inspection Scope

The inspectors assessed the following operator workaround issue to determine the potential effects on the functionality of the corresponding system:

- Condensate pump suction pressure - condensate pump suction pressure is degraded

During this inspection, the inspectors reviewed the technical adequacy of the workaround documentation against the updated safety analysis report and other design information to assess whether the workaround conflicted with any design basis information. The inspectors compared the information in abnormal or emergency operating procedures to the workaround information to ensure that the operators maintained the ability to implement important procedures when needed.

This represented one inspection sample.

b. Findings

No findings of significance were identified.

.2 Semi-annual Review of the Cumulative Effects of Operator Workarounds

a. Inspection Scope

The inspectors reviewed all operator workarounds and challenges to identify any potential effect on mitigating systems ability to function as required during emergencies and ensure that operators would be able to respond in a correct and timely manner to plant transients and accidents. The inspectors utilized procedure OP-AA-102-103, "Operator Work-Around Program," revision 1, during the review. The inspectors also reviewed issue reports and work orders related to corrective actions to remove the workarounds or compensatory actions.

The inspectors completed one sample by reviewing the following workarounds and challenges:

- N66-D006B off gas regenerator dryer thermostatic trap
- 1FW01 PB turbine-driven reactor feed pump 1B
- 1WS026 turbine oil cooler temperature control valve
- Condensate pump suction pressure
- 1G33-D001 reactor water cleanup orifice letdown to main condenser
- Modification to improve feedwater system control post scram
- 1B21-F437A steam jet air ejector 1A steam inlet control valve bypass
- 0WE01FA (B) [C] radwaste filters A (B) [C]

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed the post maintenance testing activities associated with maintenance or modification of important mitigating, barrier integrity, and support systems that were identified as risk significant in the licensee's risk analysis. The inspectors reviewed these activities to verify that the post maintenance testing was performed adequately, demonstrated that the maintenance was successful, and that operability was restored. During this inspection activity, the inspectors interviewed maintenance and engineering department personnel and reviewed the completed post maintenance testing documentation. The inspectors used the appropriate sections of the TS and USAR, as well as the documents listed at the end of this report, to evaluate this area.

Testing subsequent to the following activities was observed and evaluated to complete seven inspection samples:

- Reviewed completed CPS 3412.01, Essential switchgear heat removal, following completion of WO# 752802, 1SX202A relief valve and 1SX110BA pipe replacement
- Electrical Maintenance troubleshoot/rework/adjust to restore sat operation, standby liquid control test tank outlet valve limit switch WO# 668279
- Standby Gas Treatment Train B - containment draw down test following work to correct flow oscillations WO# 657204, OP 9065.02 OP secondary containment integrity; January 18, 2004, and WO# 655681, IM Flow indication oscillating +/- 400 scfm; November 22, 2005
- Division III diesel generator high water temperature switch replacement
- Reviewed Section 8.14.18 of CPS 9061.06C014 to ensure post maintenance testing adequacy following removal of deluge line flange and reinstallation of spool piece for 1SX073B standby gas treatment 1B deluge valve
- Reviewed CPS 3412.01, Essential switchgear heat removal, following completion of WO #616616, circuit breaker and bucket replacement
- Reviewed results of CPS 8731.12 following rod control and information system transponder card replacement WO# 647415

b. Findings

Introduction: A self-revealing Green finding involving a non-cited violation (NCV) of Technical Specification 5.4 “Procedures,” was identified. On September 30, 2005, the Division III emergency diesel generator (EDG) failed to properly run following maintenance activities, due to inadequate maintenance instructions. The licensee determined that this issue was the result of a maintenance planner’s failure to follow administrative guidelines for technical review during the development of the maintenance instructions. This issue resulted in extended outage and unavailability time of the EDG.

Discussion: On September 30, 2005, the Division III EDG was started for a maintenance run following a system outage window. During the initial start of the EDG, the start sequence was normal. Followup adjustments were then made on a newly installed shutdown solenoid. The licensee’s operations staff declared the diesel generator available if needed to response to an event. The licensee’s online risk profile changed from “Yellow” to “Green.” At this time compensatory actions such as the establishment of protected system pathways were removed.

During subsequent starts, the EDG exhibited abnormal starting indication. While starting the EDG for post maintenance test, the licensee observed a starting time of greater than 12 seconds. Additionally, unusual speed and voltage variations occurred when operators made adjustments to the diesel voltage regulator while the diesel was running.

A licensee investigation determined that due to a lack of technical rigor for EDG shutdown solenoid and servo booster replacement, the work instructions performing these tasks contained inadequate guidance which allowed air to be trapped in the servo

booster motor. The servo booster motor is a part of the governor. The air trapped on the oil side of the governor's operating piston resulted in the governor not being able to perform its designed function. This issue resulted in lengthening the time in which the Division III EDG was unavailable and inoperable.

The licensee's investigation also determined that the work instructions failed to contain adequate instructions for venting or draining air from the governor following the replacement of the servo booster. The licensee concluded that this issue would not have occurred if the work planner responsible for the work instructions would have contacted the appropriate engineering staff per the licensee's "Performance Centered Maintenance" (MA-AA-716-210) procedure. This procedure required the maintenance planner to route the work instructions to the licensee's engineering staff for a formal review of technical information.

Analysis: Failure to provide adequate maintenance and work instruction is a performance deficiency. The inspectors compared this finding to the findings identified in Appendix E, "Examples of Minor Issues," of IMC 0612, "Power Reactor Inspection Reports," dated September 30, 2005, to determine whether the finding was minor. The inspectors determined that no example contained in Appendix E was applicable to this situation. The inspectors then reviewed this finding against the guidance contained in Appendix B, "Issue Dispositioning Screening," of IMC 0612. The inspectors determined that despite the fact that this issue involved work in progress, this issue was more than minor because the finding affected the Mitigating Systems Cornerstone objective of ensuring the availability of mitigating systems to prevent undesirable consequences. The issue resulted in the emergency diesel generator being unavailable for longer than expected by the plant staff. Following the initial maintenance run of the diesel generator operators declared that the diesel generator was available for use, if needed to respond to an event. At this time, a number of compensatory actions such as the establishment of protected system pathways were eliminated. The inspectors completed a Phase 1 significance determination of this issue using IMC 0609, "Significance Determination Process," Appendix A, Attachment 1, dated November 22, 2005. The inspectors selected the Mitigating Systems Cornerstone. The inspectors answered "no" to all five questions. Therefore, the inspectors concluded that this issue was a finding of very low safety significance (Green).

Enforcement: Technical Specification 5.4.1, states that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Appendix A of Regulatory Guide 1.33, recommends that procedures for performing maintenance that can affect the performance of safety-related equipment should be properly preplanned and performed in accordance with written procedures, documented instructions, or drawings appropriate to the circumstances.

Contrary to the above, the licensee's procedures for performing maintenance on the Division III EDG were inadequate, in that, the work instruction did not prevent air from being trapped in the servo booster motor and did not vent the air following the servo booster replacement. On September 30, 2005, the licensee's failure to have adequate maintenance procedures resulted in the diesel generator not operating properly. This was a violation. Corrective actions by the licensee included developing lesson-learned

information so issues surrounding this finding would be shared with other licensee staff. Additionally, the licensee planned to add technical guidance related to venting air from the diesel governor to the licensee's diesel maintenance training material.

The finding also affected the cross cutting area of human performance since the licensee's maintenance personnel failed to request formal technical guidance from engineering staff as directed by licensee administrative procedures. Because the finding has been captured by the licensee's corrective action program (CR 379980), this violation is being treated as a non-cited violation **(NCV 05000461/200509-01(DRP))** consistent with Section VI.A.1 of the NRC Enforcement Policy.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors witnessed selected surveillance testing and/or reviewed test data to verify that the equipment tested using the surveillance procedures met the TS, the ORM, the USAR, and licensee procedural requirements, and demonstrated that the equipment was capable of performing its intended safety functions. The activities were selected based on their importance in verifying mitigating systems capability and barrier integrity. The inspectors used the documents listed at the end of this report to verify that the testing met the frequency requirements; that the tests were conducted in accordance with the procedures, including establishing the proper plant conditions and prerequisites; that the test acceptance criteria were met; and that the results of the tests were properly reviewed and recorded. In addition, the inspectors interviewed operations, maintenance and engineering department personnel regarding the tests and test results.

The inspectors evaluated the following surveillance tests to complete six inspection samples:

- CPS 9051.02 "High Pressure Core Spray Valve Operability Surveillance"
- CPS 9431.04C20, "Reactor Protection System Reactor Water Level" WO # 686384-01
- CPS 9057.02 "Secondary Containment Integrity"
- CPS 9053.01C001 "Residual Heat Removal Loop A Valve Operability"
- CPS 9080.02 "Diesel Generator 1B Operability - Manual Quick Start Operability"
- CPS 9080.03 "Diesel Generator 1C Operability - Manual Quick Start Operability"

b. Findings

Introduction: The inspectors identified a Green finding involving a non-cited violation for inadequate corrective action. The licensee's failure to properly identify and correct a degraded electrical circuit in 2004, resulted in the Division II EDG subsystem being vulnerable to electrical circuit failure if called upon to complete its support function. This issue also resulted in a Division II EDG failure during a subsequent surveillance test.

Discussion: On October 18, 2004, a blown fuse in the electrical circuit that supplies 125 VDC power to the Division II EDG DC oil pumps starter resulted in the failure of the pumps to operate. The Division II diesel generator was declared inoperable.

In Apparent Cause Evaluation (ACE) 267857, the licensee determined that the apparent cause of the F5-1 fuse failure was due to a high current overload combined with potential fatigue of the fuse. However, the ACE also concluded that discoloration in the F5 fuse holder could not be characterized as a high resistance point. The high current condition was determined to be caused by high inrush current. The ACE stated that the manufacturer does not recommend this fuse type for significant inrush current. Corrective actions included an evaluation to change the fuse type and an evaluation to do thermography on the fuse block during subsequent performance of CPS 3506.01. The evaluation concluded that no change of fuse was necessary and thermography was not viable. No other actions were recommended to determine the cause of the fuse failure.

On November 14, 2005, the Division II EDG DC oil pumps again failed to start during performance of CPS 3506.01 due to a failure of the 125 VDC circuit. This circuitry also powered the fuel priming pump and the field conditioning relay. During the investigation the licensee determined that the failure of the circuit was caused by a high resistance electrical connection within the F5 and F5-1 fuse block.

Exelon PowerLabs report, CPS 83658 “Failure analysis of an ITE Gould, #FP32, 30A fuse block” concluded that dust and dirt accumulation internal to the fuse block stab connection area in combination with accumulated, dried grease-like material that provided a collection point for the dust and dirt caused the fuse block to fail. The PowerLabs report could not determine whether the grease-like material was from the fuse block manufacturer or not. The fuse block was original plant equipment. The PowerLabs report indicated that it was evident based on the amount of dust and dirt accumulated on the fuse block cover, that the environment in which the fuse was installed was very dusty, and there were a number of passages on the fuse block that would allow dust to accumulate.

An Apparent Cause Evaluation (ACE 398451) completed by the licensee stated that based on the results of the 2005 event and the PowerLabs report results, it was clear that the degraded internal fuse block connection existed in 2004 and most probably was the initiator of the 2004 event as well. Based on this information, the inspectors concluded that the high resistance condition remained in the diesel circuitry for over a year despite there being signs that it existed following the first failure.

The inspectors concluded that failure of Apparent Cause Evaluation 264857 to properly identify the cause of high resistance in the fuse connection resulted in a repetitive failure of the Division II 125V DC oil pumps (turbo soak back and circulating pumps) auto-start feature during the performance of CPS 3506.01.

Following a review of the PowerLabs report and ACE 398451, the inspectors were concerned with the licensee’s extent of condition review and subsequent corrective actions related to this issue. The inspectors noted that the ACE contained no information that addressed why this particular fuse and fuse holder was unique or had a

higher susceptibility of being found in this degraded condition (dried grease and dirt on contacts). As a result of questions by the inspectors related to extent of condition and subsequent corrective actions, the licensee developed actions to examine other fuse and fuse holders in the Divisions I and III 125 VDC electrical circuitry in an expedited manner.

Analysis: Failure to correctly identify the cause of the 2004 Division II EDG 125 VDC circuit failure was a performance deficiency. The inspectors determined that the finding was greater than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Disposition Screening," issued September 30, 2005. This issue was greater than minor because the finding affected the Mitigating Systems Cornerstone objective of ensuring the availability, reliability, and capability of mitigating systems to prevent undesirable consequences. The inspectors evaluated this finding using Manual Chapter 0609, "Significance Determination Process," Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," Phase 1 screening associated with the Mitigating Systems Cornerstone. The 125 VDC system is a backup to the AC oil system in case of a loss of offsite power. Offsite power was not lost, therefore, there was not an actual loss of safety function for the diesel. This was a Green issue.

Enforcement: 10 CFR 50, Appendix B, Criterion XVI, states that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and non-conformances are promptly identified and corrected. Contrary to the above, following a failure of the Division II EDG 125 VDC circuit on November 14, 2004, the licensee failed to identify and correct the deficiency that caused the failure. This was a violation. Corrective actions by the licensee included replacing the fuse and fuse holder and expediting actions to address the extent of condition relative to the as-found condition of the fuse and fuse holder.

The finding also affected the cross-cutting area of problem identification and resolution since the licensee failed to adequately address the degraded circuit condition in a timely manner. Because the finding has been captured by the licensee's corrective action program (CR 398451), this violation is being treated as a non-cited violation **(NCV 05000461/2005-09-02(DRP))** consistent with Section VI.A.1 of the NRC Enforcement Policy.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed temporary plant modifications to verify that the instructions were consistent with applicable design modification documents and that the modifications did not adversely impact system operability or availability. The inspectors interviewed operations, engineering and maintenance personnel as appropriate and reviewed the design modification documents and the 10 CFR 50.59 evaluations against the applicable portions of the USAR. The documents listed at the end of this report were also used by the inspectors to evaluate this area.

The inspectors reviewed the issues that the licensee entered into its corrective action program to verify that identified temporary modification problems were being entered into the program with the appropriate characterization and significance. The inspectors also reviewed the licensee's corrective actions for temporary modification related issues documented in selected condition reports. The condition reports are specified in the list of documents reviewed. The inspectors completed two inspection samples by reviewing the following temporary modifications:

- Install temporary power supply as a backup to power supply Item 69 in panel 1PA05J
- Division III emergency diesel generator high water temperature switch

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors performed a screening review of Revision 7 of the Clinton Power Station Annex to the Exelon Standardized Emergency Plan to determine whether the changes made in Revision 7 decreased the effectiveness of the licensee's emergency planning. The screening review of this revision did not constitute an approval of the changes and, as such, the changes are subject to future NRC inspection to ensure that the emergency plan continues to meet NRC regulations.

These activities completed one inspection sample.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors observed the emergency response activities associated with drills and focused training conducted on December 12, and 15, 2005. Specifically, the inspectors verified that the emergency classification and simulated notifications were properly completed, and that the licensee adequately critiqued the training. Additionally, the inspectors observed licensee activities during the site accountability drill in the designated assembly area at the Operational Support Center (OSC) to ensure the drill was conducted in accordance with licensee procedures. The inspectors reviewed issue

reports generated as a result of the drill and discussed these discrepancies with the site emergency preparedness manager. The inspectors completed two inspection samples by observing these emergency preparedness evolutions:

- Site accountability drill
- Table-top drill scenarios CPS PI #'s 3 & 4

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

2OS1 Access Control To Radiologically Significant Areas (71121.01)

.1 Review of Licensee Performance Indicators for the Occupational Exposure Cornerstone

a. Inspection Scope

The inspectors reviewed the licensee's occupational exposure control cornerstone Performance Indicators (PIs) to determine whether or not the conditions surrounding the PIs had been evaluated, and identified problems had been entered into the corrective action program for resolution. This review represented one sample.

b. Findings

No findings of significance were identified.

.2 Plant Walkdowns and Radiation Work Permit Reviews

a. Inspection Scope

The inspectors reviewed procedures and methods for controlling airborne radioactivity areas to evaluate barrier integrity and engineering controls performance (e.g., high efficiency particulate air (HEPA) ventilation system operation) and to determine if there was a potential for individual worker internal exposures of greater than 50 millirem committed effective dose equivalent. There were no airborne areas created as a result of major activities observed during the inspection. This review represented one sample.

The adequacy of the licensee's internal dose assessment process for internal exposures greater than 50 millirem committed effective dose equivalent was assessed. There were no internal exposures greater than 50 millirem. This review represented one sample.

b. Findings

No findings of significance were identified.

.3 Problem Identification and Resolution

a. Inspection Scope

The inspectors reviewed the licensee's self-assessments, audits, licensee event reports, and special reports related to the access control program to determine if identified problems were entered into the corrective action program for resolution. This review represented one sample.

The inspectors reviewed corrective action reports related to access controls and high radiation area radiological incidents (non-performance indicators identified by the licensee in high radiation areas less than 1R/hr). Staff members were interviewed and corrective action documents were reviewed to determine if follow-up activities were being conducted in an effective and timely manner commensurate with their importance to safety and risk based on the following:

- Initial problem identification, characterization, and tracking
- Disposition of operability/reportability issues
- Evaluation of safety significance/risk and priority for resolution
- Identification of repetitive problems
- Identification of contributing causes
- Identification and implementation of effective corrective actions
- Resolution of non-cited violations (NCVs) tracked in the corrective action system
- Implementation/consideration of risk significant operational experience feedback

This review represented one sample.

The inspectors evaluated the licensee's process for problem identification, characterization, and prioritization and determined if problems were entered into the corrective action program and resolved. For repetitive deficiencies and/or significant individual deficiencies in problem identification and resolution, the inspectors determined if the licensee's self-assessment activities were capable of identifying and addressing these deficiencies. This review represented one sample.

The inspectors reviewed licensee documentation packages for all PI events occurring since the last inspection to determine if any of these PI events involved dose rates greater than 25 R/hr at 30 centimeters or greater than 500 R/hr at 1 meter. Barriers were evaluated for failure and to determine if there were any barriers left to prevent personnel access. There were no PI events occurring since the last inspection. This review represented one sample.

b. Findings

No findings of significance were identified.

.4 Job-In-Progress Reviews

a. Inspection Scope

Radiological work in high radiation work areas having significant dose rate gradients was reviewed to evaluate the application of dosimetry to effectively monitor exposure to personnel and to verify that licensee controls were adequate. These work areas involved areas where the dose rate gradients were severe which increased the necessity of providing multiple dosimeters and/or enhanced job controls. This review represented one sample.

b. Findings

No findings of significance were identified.

.5 High Risk Significant, High Dose Rate and Very High Radiation Area Controls

a. Inspection Scope

The inspectors held discussions with the radiation protection manager concerning high dose rate/high radiation area and very high radiation area controls and procedures, including procedural changes that had occurred since the last inspection, in order to determine if any procedure modifications did not substantially reduce the effectiveness and level of worker protection. This review represented one sample.

The inspectors discussed with Radiation Protection (RP) supervisors the controls that were in place for special areas that had the potential to become very high radiation areas during certain plant operations, to determine if these plant operations required communication beforehand with the RP group, so as to allow corresponding timely actions to properly post and control the radiation hazards. This review represented one sample.

The inspectors conducted plant walkdowns to evaluate the posting and locking of entrances to high dose rate and very high radiation areas. This review represented one sample.

b. Findings

No findings of significance were identified.

2OS2 As Low As Is Reasonably Achievable Planning And Controls (ALARA) (71121.02)

.1 Problem Identification and Resolutions

a. Inspection Scope

The licensee's corrective action program was reviewed to determine if repetitive deficiencies in problem identification and resolution were being addressed. This review represented one sample.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES (OA)

4OA1 Performance Indicator Verification (71151)

.1 Radiation Safety Strategic Area

a. Inspection Scope

The inspectors reviewed the licensee draft data collections used to prepare submittals for two PIs. The inspectors used PI guidance and definitions contained in Nuclear Energy Institute (NEI) Document 99-02, Revision 3, "Regulatory Assessment Performance Indicator Guideline," to evaluate the accuracy of the PI data. As part of the inspection, the documents listed in Appendix 1 were utilized to evaluate the accuracy of PI data. The inspectors' review included, but was not limited to, conditions and data from logs, licensee event reports, condition reports, and calculations for each PI specified.

The following PIs were reviewed:

- Occupational Exposure Control Effectiveness, for the period of January 2005 through October 2005

- RETS/ODCM Radiological Effluent Occurrence, for the period of September 2004 through July 2005

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Initial License Examination Root Cause

a. Inspection Scope

The inspectors reviewed the Clinton Power Station initial license training root cause analysis for poor performance on the NRC initial license examination conducted in July 2005 for correct identification of the causes of initial license training applicant performance. The inspectors compared applicant experience/background with initial license training program admission requirements. The inspectors reviewed the training program used to prepare the applicants for the initial operator license examination. The inspectors reviewed applicant written examination/quiz grades and performance reviews associated with their simulator control room integrated plant operations training. The inspectors reviewed the results of performance review committees and performance review boards for compliance with station procedures and initial license training program

academic requirements. The inspectors interviewed several station operations instructors, licensed operators, operations management, and training management to determine their understanding of program requirements, initial license training candidate progress, and the initial license training lead instructor contribution to the program. The inspectors reviewed the recommended corrective actions contained within the root cause analysis for adequacy and accuracy.

b. Findings

Discussion: The inspectors determined that the root cause analysis was thorough and identified the causes of poor performance by the initial operator license applicants. The inspectors determined that the applicants met all entrance requirements into the license class without exception. One clarification was received from Region III to ensure one applicant met all license requirements. The training program had been successfully used to train previous license classes and the initial license training lead instructor was attempting to emulate previous successful license classes by implementing the same schedule and program previously used. The inspectors determined that station management had failed to adequately support an inexperienced initial license training lead trainer during a critical portion of the license class training program. During that time the station's training director and operation's training manager were not present at the site to provide oversight for the initial license training program. The initial license training lead trainer had to make several critical decisions without the guidance of an experienced manager, and lacking experience, made decisions that resulted in a class inadequately prepared to take the NRC's initial license examination. The initial license training lead trainer's decisions resulted in remediation training not being completed in a timely manner with a resultant inadequate knowledge base upon which the applicants could build additional knowledge. Because of the lack of management supervision and initial license training lead trainer inexperience, inadequate documentation was provided to performance review boards to have applicants removed from the initial license training program. The inspectors noted that comments concerning the operational relevance of some of the written examination questions during the station's internal review were dismissed without adequate follow-up on the part of the examination author and others on the examination security agreement. The inspectors determined that the root cause analysis had discovered the failure causes for the poor performance and made accurate recommendations for corrective actions to prevent recurrence of the poor performance issues. The inspectors determined that if the recommended corrective actions are fully implemented and maintained, a recurrence of the poor performance will be avoided.

.2 Review and Assessment of Issue Report for Trends, Rigor, and Common-Cause Attributes

a. Inspection Scope

The inspectors noted a slight increase in the number of plant issues involving equipment reliability. Some of these issues resulted in issue reports (IR) being generated by the licensee. The inspectors reviewed issue reports with a focus on instrument out-of-tolerance IR with approved evaluations from January 2004 through November 2005.

b. Findings

No findings of significance were identified. However, the inspectors noted that the licensee failed to follow and meet the intent of the instrument trending program as described in licensee administrative procedure ER-AA-520 “Instrument Trending Program.” Specifically, the licensee engineering staff failed to meet the management and program expectations to have the trending report and engineering analysis completed 60 days after completion of a refueling outage. This expectation promotes a timely review and evaluation of instrumentation issues such as suitability for application. Timely evaluations would allow for adequate planning and work scheduling for replacement of unreliable instrumentation.

Specifically, Section 4.4 of ER-AA-520, “instrument performance trending,” stated that once per operating cycle, engineering would run a trend report on the condition report database. The procedure required system managers to review the report and evaluate instruments associated with their systems. Evaluations for what should be considered an adverse trend would be included in this report. This procedure also required that site design engineering evaluate the trend report for indication of common mode failures once per operating cycle and perform a drift analysis for those instruments in the As-Found/As-Left program. The procedure directed site design engineering to update the drift analysis for the make/model groups. Any issues identified related to common mode failures or instrumentation issues that would affect the drift analysis required corrective actions be created to correct the issue. As stated in ER-AA-520, this procedure provided the administrative process for the instrument trending program and it also provided control of the As-Found/As-left analysis program. This program maintained the analysis conducted as part of the 24-month cycle extension project as required by Generic Letter 91-04.

The licensee adopted ER-AA-520 in 2002 during Cycle 9. On November 16, 2005, inspectors requested a copy of the instrument trending program analysis completed in accordance with ER-AA-520. The licensee had not completed a finalized trend report or instrument analysis as directed by ER-AA-520. When questioned by the inspectors on why this report had not been completed, the licensee stated that the instrument trend report analysis was not completed due to poor program ownership by design engineering management.

The inspectors’ review of the corrective action system did not identify any evidence of an actual loss of safety function of any mitigating system due to an out-of-tolerance instrumentation issue. The ninth refueling cycle ended February 2004, and the tenth refueling cycle will end on January 30, 2006. Therefore, the licensee has until that time to be in compliance with the procedural requirement.

4OA6 Meetings

.1 Exit Meeting

The inspectors presented the inspection results to Mr. Robert Bement and other members of licensee management at the conclusion of the inspection on January 12, 2005. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

.2 Interim Exit Meetings

Interim exits were conducted for:

- Emergency Preparedness inspection with Mr. M. Friedman on December 1, 2005
- Biennial Operator Requalification Program Inspection with Mr. R. Bement, Clinton Power Station Site Vice President, on November 23, 2005.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel
R. Bement, Site Vice President
M. McDowell, Plant Manager
J. Cunningham, Work Management Director
R. Davis, Radiation Protection Director
R. Frantz, Regulatory Assurance Representative
M. Friedman, Emergency Preparedness Manager
M. Hiter, Access Control Supervisor
W. Iliff, Regulatory Assurance Director
C. VanDenburgh, Nuclear Oversight Manager
J. Domitrovich, Maintenance Director
D. Schavey, Operations Director
J. Madden, Chemistry Manager
C. Williamson, Security Manager
R. Peak, Site Engineering Director
W. Carsky, Shift Operations Superintendent
M. Baetz, Licensed Operator Requalification Training Group Lead
J. Lindsey, Training Director
A. Bailey, Operations Training Manager

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

05000461/2005009-01	NCV	Failure to provide adequate maintenance and work instruction is a performance deficiency
05000461/2005009-02	NCV	Failure to correctly identify and correct the cause of the 2005 125 VDC circuit failure was a performance deficiency

Closed

05000461/2005009-01	NCV	Failure to provide adequate maintenance and work instruction is a performance deficiency
05000461/2005009-02	NCV	Failure to correctly identify and correct the cause of the 2005 125 VDC circuit failure was a performance deficiency

Discussed

NONE

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 of 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 pat of it, unless this is stated in the body of the inspection report.

Section 1R01: Adverse Weather

WC-AA-107, Seasonal Readiness; Revision 1
CPS 1860.01, Cold Weather Operations; Revision 6a
CPS 1860.01C001, Cold Weather Preparation Checklist; Revision 5a
CPS 1860.01C003, Cold Weather Heater and Heat Trace Operability Checklist; Revision 0b
IR 399014,2005 CPS Winter readiness exceptions open/tracked; November 15, 2005
Prompt Investigation 430053, Main Condenser Tube Leak; December 2, 2005
IR 430132, Condenser inspection showed one shared tube, seven tubes plugged; December 3, 2005
IR 284934, Repeat condenser tube leak after work in C1R09; December 21, 2004
CCA 291519, Condenser tube leak causes additional radiation exposure; March 2, 2005

Section 1R04: Equipment Alignments

CPS 3313.01; Low pressure core spray (LPCS); Revision 15c.
CPS 3313.01V001; Low pressure core spray valve lineup; Revision 13.
CPS 3313.01V002; Low pressure core spray instrument valve lineup; Revision 8a.
CPS 3313.01E001; Low pressure core spray electrical lineup; Revision 11a.
OP-AA-108-103; Locked equipment program; Revision 1.
CPS 3501.01, High voltage auxiliary power system; Revision 25e
CPS 3501.01E001, High voltage auxiliary power system electrical lineup; Revision 13
USAR section 3.11, Environmental qualification of mechanical and electrical equipment; Revision 11

Section 1R05: Fire Protection

Clinton's Updated Safety Analysis Report, Appendix E, "Fire Protection Evaluation Report"

Section 1R11: Licensed Operator Requalification

LS-AA-126-1001; Licensed operator requalification training NRC Pre 71111.11 Inspection Focused Area Self-Assessment Report; dated August 28, 2005
TQ-AA-106-0304; Attachment 1; Clinton Power Station 2004 - 2005 Licensed operator requalification training Program Classroom Summary; Revision 2
TQ-AA-106-0304; Attachment 2; Clinton Power Station 2004 - 2005 Licensed operator requalification training Program Simulator Summary; Revision 2
TQ-AA-106-0304; Attachment 3; Clinton Power Station 2004 - 2005 Licensed operator requalification training Category Subject Hours Distribution; Revision 2

TQ-AA-106-0304; Attachment 4; Clinton Power Station 2004-2005 Licensed operator requalification training Category Distribution; Revision 2
TQ-AA-106-0304; Attachment 5; Clinton Power Station Licensed operator requalification training Examination Question Distribution; Revision 2
TQ-AA-210-4102; Performance Review Committee Data Sheet; Various
Clinton Power Station Simulator Feedback Form; Various
Requalification Examinations (Operating) - Various; 2004 - 2005
Requalification Examinations (Written) - Various; 2003 - 2005
Clinton Power Station Simulator Test Procedure and Results - Various; 2003 - 2005
Simulator Malfunction Test (MF) procedures/results; Multiple
Simulator Certification Testing Schedule; Current, 2005
Simulator Work Requests (SWRs); Multiple
Cycle 10 Core Performance Testing; Current, 2005
Root Cause Report 345115; "High Initial License Training Exam Failure Rate for Clinton Power Station Initial license training Class 04-01" and Corresponding Corrective Actions.

Section 1R12: Maintenance Rule Implementation

MR database, Scoping/Risk significance - summary report for VR system - containment building HVAC
WO 476681, Containment building differential pressure not controlling in band in filtered mode; November 9, 2005
WO 835639, Numerous problems with manipulating continuous containment purge - 1HS-VR101; October 11, 2005
WO 475271, EQ-CL024-23 Replace solenoid valve 1FSVR109A; August 29, 2005
WO 839799, 1VR07CA breaker failed to trip; August 25, 2005
WO 521259, EQ-CL070 Replace o-rings, rod seals, and t-seals - 1VR006B; October 17, 2005
IR 342859; 1VR07CB fan tripped when shifting; June 10, 2005
IR 344364; 1VR07CB one time fuse replacement; June 15, 2005
IR 360014, MCR annunciator 5043- 1A HI TEMP CT BLG CCP SUP AIR; August 4, 2005
IR 360293, Numerous problems when manipulating CCP - 1HS-VR101; August 5, 2005
IR 352107, 1VR07CB tripped on startup on CCP in filtered mode; August 11, 2005
IR 362181, Excessive stroke time for 1VR 006B; August 11, 2005
IR 362362, 1VR07CA tripped on first attempt in manual mode; August 12, 2005
IR 364014, 1VR07CA breaker failed to trip; August 17, 2005
IR 371427, 0VQ02CB failed to start w/CCP in filtered mode auto; September 8, 2005
IR 376598, CCP failed to run in filtered mode, 0VQ24YB failed to open; September 22, 2005
IR 392769, CCP failed to start in unfiltered mode; October 31, 2005
IR 394409, 0VQ02CB shutdown when starting CCP in filtered mode; November 3, 2005
IR 396149, Containment d/p controlling below alarm setpoint for 5042-7C; November 8, 2005
IR 396480; CCP continues to fail to operate in filtered mode (auto); November 8, 2005
IR 294111; Potential level 3 scram setpoint process measurement error
IR 297921: Evaluate scram frequency reduction committee recommendation
IR 302395; Disable the level 3 scram with the mode switch in shutdown
IR 305130 E02-1RP99-021 and 024 GETARS CH'S 286 -289 IAW 24A1287 (Disparity exist between documents)
IR 310064; Work order reschedule due to lack of needed EC
IR 314700 1c71N652B ATM improperly marked per operator AID 90-02

IR 318549 RPS procedure needs information on RPT bypass
IR 332656 1SIRP009; local output frequency meter sticking
IR 334655; Troubleshooting reveals several inverter anomalies
IR 347100; 1C71N650A; As found out of specification on 9030.01C023
IR 355523 ATM calibration not reset to as left tolerance

Section 1R15: Operability Evaluations

IR 00264610 “Failure of Division II Diesel Generator DC Oil Pumps to Keep Running”
IR 00264856 “Summary of Events and Repairs to Division II Diesel Generator DC Lube Oil Pumps”
IR 00264857 “Division II Diesel Generator High Resistance Fuse Connection”
IR 00274008 “Extent of Condition Action for Blown F5-1 Fuse in 1PL12JB”
IR 00274013 “Extent of Condition Action - Inspect 1AP61EB/C B-Contacts”
CPS 3506.01, “Diesel Generator and Support Systems (DG)”, Section 8.2.8 “Testing the DC Lube Oil Pumps Auto-Start Feature,” Revision 31b
Technical Specifications 3.8.1, “AC Sources - Operating”
Clinton’s Archival Operations Narrative Logs for 10/18-19/2004
IR 429583, NRC SSD&PC RCIC tank vortex issue; December 1, 2005
Operability evaluation 429583-02, NRC SSD&PC RCIC tank vortex issue; Revision 000
Calc IP—0384, Evaluation of vortex in the RCIC storage tank; Revision 1/A
DWG M06-1079, Reactor core isolation cooling piping; Revision AL
Calc VYC-1844, Vermont Yankee, HPCI and RCIC vortex height; Revision 0
IR 389791, 1E22-F015 HPCS suppression pool suction failed to indicate full open: October 25, 2005
IR 392614, 9051.02 procedure doesn’t address re-stroking the valve; October 31, 2005
IR 396862, Dual indication on 1E22-F015; November 9, 2005
ECR 372640, October 28, 2005

Section 1R16: Operator Workarounds

OP-AA- 102-103, Rev. 1, “Operator Work-Around Program”
CPS 3104.01,“Condensate/Condensate Booster (CD/CB),” Rev. 25a
IR 329215, “OTDM Fails to Process Hotwell Setpoint Change Per CC-AA-112"
OP-AA-102-103, Rev. 1, “Operator Work-Around Program”
EC 350535, “FW Setpoint Set Down Change”
ECR 372141, “Shop Request Per C. Henderson, Method to Align RT Flanges without Cutting Out Flanges (IE Apply Heat to Draw into Alignment). This is for RT Reject Bypass Line Orifice”
IR 244257, “Changes in FW System Result in Poor Level Control Post Scram”
IR 264090, “1FW01KA - Perform Adjustment to Valve Gear Settings”
IR 299159, “1G33D001 RT Reject Bypass Orifice Small Leak”
IR 327160, “1G33D001 (RT Orifice Flange) Leak Worsening”
IR 361403, “TDRFP 1B LP Stop Valve did not Open when Feed Pump was Reset”
IR 378860, “Unexpected alarm 5130-2E Regen Gas Dryer Heatup Temp Failure”
IR 388235, “Design Issue: Valve Trim for WS Reg Valve 1WS026"
WO 747188, “CT 1FW01KA - Adj Valve Gear
WO 777396, “Water from Unknown Source Running into Suppression Pool”
WO 780559, “Replace 1WS026 Turb Lube Oil Cooler Temp Control Valve”

WO 793588, “Perform Loop Cals for Hotwell Level Loops 1CD057 and 1CD068"
WO 803554, “Setpoint S et Down Change per EC 350535"
WO 803556, “Modify SJAE 6" Bypass Line and Control Logic per EC 347137"
WO 841875, “Inspect TDRFP-B LP Control Valve Poppets & Linkages”
WO 860301, “Unexpected Alarm 5130-2E Regen Gas Dryer Heatup Temp Failure”

Section 1R19: Post Maintenance Testing

WO 668279, Electrical maintenance troubleshoot/rework/adjust to restore sat operation; November 8, 2005
WO 818454, OP PMT 1C41C001B return to service, verify op w/no oil leak; November 9, 2005
IR 202999, SLC pump B started 15 seconds later than expected (9015.02); February 20, 2004
CPS 9067.01,“Standby Gas Treatment System Train Flow/Heater Operability”, Rev 30b
WO 701994, “Hydramotor Preventative Maintenance”
WO 701995, “Hydramotor Preventative Maintenance”
WO 760183, “EQ-CL044-02 Perform Annual EQ Hydramotor PM”
WO 760184, “EQ-CL044-01 Perform Annual EQ Hydramotor PM”
EC 358727, Bypass high water temperature switch 1TS-DG255 trip function for the division III diesel generator; Revision 0
WO 869003-07, EM troubleshoot division III diesel generator tripped during 9080.03; November 21, 2005
WO 869003-09, EM install temp mod on division III EDG water temp switch EC 358272; November 22, 2005
IR 426309, Div 3 diesel generator tripped during 9080.03; November 21, 2005
WO 859003-01, Replace/Calibrate 1TSDG255 due to trip of div 3 DG; November 25, 2005
WO 859003-08, Reland trip lead lifted in task 7 for K12 relay; November 25, 2005
WO 869003-10, Remove temp mod EC 358272 to restore the high water temperature switch 1TS-DG255 (S11) trip function for the div-III diesel generator; November 25, 2005
CPS 9065.02D001, Secondary containment integrity data sheet; Revision 29
IR 427027, 9065.02 Secondary containment integrity enhancement; November 23, 2005
IR 427050, VG Train B oscillations; November 23, 2005
WO 657204, OP 9065.02 OP secondary containment integrity; January 18, 2004
WO 655681, IM Flow indication oscillating +/- 400 scfm; November 22, 2005
CPS 3319.01, Standby gas treatment; Revision 15c
CPS 9065.02, Secondary containment integrity; Revision 29a

Section 1R22: Surveillance Testing

WO 833100, 9051.02A21; OP high pressure core spray valve operability (stoke time); October 24, 2005
CPS 9051.02; High pressure core spray valve operability test; Revision 38c.
IR 389791, 1E22-F015; High pressure core spray suppression pool suction failed to indicate full open; October 25, 2005
IR 392614, 9051.02; Procedure doesn’t address re-stroking the valve; October 31, 2005
TCCP 357546; Install temporary power supply as a backup to power supply Item 69 in panel 1PA05J

Section 1R23: Temporary Plant Modifications

EC 358272, Bypass high water temperature switch 1TS-DG255 trip function for the division III diesel generator; Revision 0
WO 869003, Troubleshoot div 3 diesel generator tripped during 9080.03; November 21, 2005
IR 426309, Div 3 diesel generator tripped during 9080.03; November 21, 2005

Section 1EP4: Emergency Action Level and Emergency Plan Changes

Clinton Power Station Annex to the Exelon Standardized Emergency Plan; Revision 7

LIST OF ACRONYMS USED

ACE	apparent cause evaluation
ADAMS	Agency wide Documents Access and Management System
ALARA	as low as is reasonably achievable
CR	condition reports
EDG	emergency diesel generator
HEPA	high efficiency particulate air
IMC	Inspection Manual Chapter
IR	issue reports
LPCS	low pressure core spray
NCV	non-cited violation
NRC	Nuclear Regulatory Commission
MR	Maintenance Rule
NEI	Nuclear Energy Institute
ORM	Operations Requirements Manual
OSC	Operational Support Center
PARS	Publicly Available Records
PI	performance indicator
RP	radiation protection
SDP	Significant Determination Process
TS	Technical Specifications
USAR	Updated Safety Analysis Report