

January 24, 2005

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 05000461/2004008

Dear Mr. Crane:

On December 31, 2004, the U.S. 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 13, 2005, 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, no findings of significance were identified.

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Sincerely,

*/RA/*

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

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

Enclosure: Inspection Report No. 05000461/2004008  
w/Attachment: Supplemental Information

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C. Crane

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REGION III

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

Report No: 05000461/2004008

Licensee: AmerGen Energy Company, LLC

Facility: Clinton Power Station

Location: Route 54 West  
Clinton, IL 61727

Dates: October 1 through December 31, 2004

Inspectors: B. Dickson, Senior Resident Inspector  
C. Brown, Resident Inspector  
D. Tharp, Resident Inspector  
R. Skokowski, Senior Resident Inspector, Byron  
S. Ray, Senior Resident Inspector, Braidwood  
R. Alexander, Radiation Protection Specialist  
B. Palagi, Senior Operations Engineer  
D. Zemel, Illinois Emergency Management Agency  
Inspector

Approved by: M. Ring, Chief  
Branch 1  
Division of Reactor Projects

Enclosure

## SUMMARY OF FINDINGS

IR 05000461/2004008, 10/01/2004 - 12/31/2004, Clinton Power Station. Routine Integrated Inspection Report.

This report covers a 3-month period of baseline resident inspection and announced baseline inspections on radiation protection and licensed operator requalifications. The inspection was conducted by Region III inspectors and the resident inspectors. No findings of significance 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**

No findings of significance were identified.

### **B. Licensee-Identified Violations**

No findings of significance were identified.

## REPORT DETAILS

### Summary of Plant Status

The plant was operated at approximately 95 percent rated thermal power (maintaining maximum electrical output) throughout the inspection period.

#### 1. REACTOR SAFETY

##### **Cornerstone: Initiating Events, Mitigating Systems, and Barrier Integrity**

#### 1R01 Adverse Weather (71111.01)

##### a. Inspection Scope

The inspectors verified that the licensee had completed its seasonal preparations for cold weather in a timely manner before the cold weather actually presented a challenge. The inspectors reviewed the licensee's completed freezing temperature annual surveillance and verified that it adequately covered risk-significant equipment and ensured that the equipment was in a condition to meet the requirements of Technical Specifications (TSs), 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 (CRs). Based on their importance for availability as mitigating systems, the inspectors conducted more detailed system reviews and walkdowns for the shutdown service water system, the reactor core isolation cooling system, and the emergency diesel generator air intake structure.

These activities completed 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 Division 1, 2, and 3 emergency diesel generators including the associated fuel oil and air start systems. These systems were selected because of their high risk significance and mitigating systems function. The inspection encompassed the following activities:

Documents reviewed during this inspection are listed in the Attachment.

- Reviewed plant procedures, drawings, and the USAR to identify proper system alignment,
- Reviewed the system valves, instrumentation, and electrical supplies to verify proper alignment, component accessibility, availability, and current material condition,
- Reviewed the CR database to verify that there were no current operability concerns,
- Reviewed open work orders (WOs) to verify that there were no conditions impacting availability and that deficiencies have been identified,
- Reviewed selected system abnormal operating procedures to verify system configuration control, and
- Reviewed operator work-arounds and operator challenges related to the system.

These activities completed one inspection sample and consisted of the following activities:

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 at the end of this report 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 condition reports (CRs) 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 the following.

- Reactor core isolation cooling (RCIC) system in anticipation of maintenance on the high pressure core spray system;
- Residual heat removal (RHR) B during Division 1 low pressure emergency core cooling systems outage; and
- Low pressure core spray system (LPCS) during Division 2 RHR systems outage.

These activities completed three samples.



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 initiate 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 unobstructed, 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 (FPER) and the USAR to verify consistency in the documented analysis with installed fire protection equipment at the station.

The inspectors completed two samples by inspecting the following areas:

- Fire Zones D-4a, 5a, 6a, diesel generator (DG) rooms at elevation 737 feet; and
- Fire Zones D-4b, 5b, 6b, DG fuel oil day tank rooms at elevation 737 feet.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors verified that flooding mitigation plans and equipment were consistent with the design requirements and risk analysis assumptions. The inspectors reviewed USAR Section 3.4.1 for internal flooding events and reviewed condition reports and work orders on the following:

- Division 2 emergency core cooling systems (RHR 'B' and 'C') and RCIC rooms flood protection measures while performing work on RHR 'A' and LPCS systems.

These activities completed one inspection sample.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Regualification Program (71111.11Q)

.1 Quarterly Review of Licensed Operators' Regualification Training Activities

a. Inspection Scope

The inspectors reviewed licensed-operator regualification training (LORT) 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:

- OP-AA-101-111, "Roles and Responsibilities of On-Shift Personnel," Revision 001;
- OP-AA-102-102, "Operator Rounds," Revision 004;
- OP-AA-103-102, "Watchstanding Practices," Revision 003;
- OP-AA-104-101, "Communications," Revision 001; and
- OP-AA-106-101, "Significant Event Reporting," Revision 004

In particular, the inspectors observed simulator dynamic exam ESG-LOR-69, Revision 01a, which included internal flooding, suppression pool low level, plant blow down, and an ATWS [anticipated trip without scram] transient. The inspectors also assessed the performance of the training staff evaluators involved in the regualification 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 one inspection sample.

b. Findings

No findings of significance were identified.

.2 Annual Operating Test Results

a. Inspection Scope

The inspector reviewed the overall pass/fail results of individual Job Performance Measure (JPM) operating tests, and simulator operating tests (required to be given per 10 CFR 55.59(a)(2)) administered by the licensee during calendar year 2004. The overall results were compared with the significance determination process in accordance with NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process (SDP)."

These activities completed one inspection sample.

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. These systems were selected based on their designation as risk significant under the MR, 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:

- Pseudo-system 89, secondary containment monitoring.
- High pressure core spray system.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

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 four samples by assessing the effectiveness of risk management activities for the following work activities or work weeks:

- Troubleshooting of an emergent failure of direct current power to components of the Division 2 diesel generator;
- High pressure core spray planned maintenance with highly elevated risk, including walking down protected equipment and reviewing contingency plans;
- Bus 1A 6.9 kV breaker swap (WO 00018521); and
- Division 4 battery charger emergent work.

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 five samples of operability determinations and evaluations by reviewing the following:

- Issues with instantaneous trip values for the high pressure core spray water leg pump molded case circuit breaker;
- Standby gas treatment (SBGT) B room cooler;
- Operability Evaluation 197833, "Division 3 Degraded Voltage Time Delay TS Allowable Value";
- High pressure core spray water-leg pump making an unusual noise; and
- Operability Evaluation 219491-03, Division 1 shutdown service water piping and components were classified as Safety Class "O" [other] vice ASME, Section III, Class 3.

b. Findings

No findings of significance were identified.

1R16 Operator Work-Arounds (71111.16)

a. Inspection Scope

The inspectors reviewed the licensee's work-around list and interviewed operators to identify any potential effects on the functionality of mitigating systems or human reliability in responding to an initiating event caused by an operator work-around. The inspectors utilized Procedure OP-AA-102-103, "Operator Work-Around Program," Revision 1, during the review.

The inspectors completed one sample by reviewing the operator actions for RHR B/C water leg pump discharge pressure reading high on the RHR 'C' pump discharge pressure instrumentation.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed the post maintenance testing (PMT) 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.

The inspectors completed two samples by observing and evaluating the tests subsequent to the following activities:

- Standby gas treatment system 'B' after system maintenance; and
- Residual heat removal system 'A' pump discharge check valve after maintenance.

b. Findings

No findings of significance were identified.

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 completed two samples by evaluating the following surveillance tests:

- Division 2 emergency diesel generator overspeed trip test; and
- Drywell leakage determination.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed and evaluated the following temporary plant modifications on risk-significant equipment:

The inspectors reviewed these 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 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 listed at the end of this report.

The inspectors completed two inspection samples by reviewing the following temporary modifications:

- Change LPCS and LPCI internal vessel line breakage setpoints; and
- Install Astromed recorder on Division 4 battery charger.

b. Findings

No findings of significance were identified.

## **Cornerstone: Emergency Preparedness**

### 1EP6 Drill Evaluation (71114.06)

#### a. Inspection Scope

The inspectors observed the emergency response activities associated with the 2004 Off-Year Exercise (Earthquake results in flooding in RHR room) conducted on October 13, 2004. 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 drill in the Technical Support Center.

These activities constituted one inspection sample.

#### b. Findings

No findings of significance were identified.

## **2. RADIATION SAFETY**

### **Cornerstone: Occupational 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 reporting of occupational exposure control cornerstone performance indicator (PI) occurrences to determine whether or not the conditions surrounding the PI occurrences had been evaluated and identified problems had been entered into the corrective action program for resolution. For the time period of the 4th Quarter 2003 through the 2nd Quarter 2004, the licensee identified one locked high radiation area occurrence under the Occupational Exposure Control Effectiveness PI which occurred in February 2004 (see Inspection Report 05000461/2004002, Section 2OS1.1).

This review represented one inspection sample.

#### b. Findings

No findings of significance were identified.

.2 Problem Identification and Resolution

a. Inspection Scope

As discussed in Section 2OS1.1, for the time period of the 4th Quarter 2003 through the 2nd Quarter 2004, the licensee identified one locked high radiation area occurrence under the Occupational Exposure Control Effectiveness PI. As such, the inspectors reviewed licensee root cause evaluation for that PI event to determine if the event involved dose rates greater than 25 rem per hour at 30 centimeters, or greater than 500 rad per hour at 1 meter. Barriers were evaluated for failure and to determine if there were any barriers left to prevent personnel access.

This review represents one inspection sample.

b. Findings

No findings of significance were identified.

**Cornerstone: Public Radiation Safety**

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems (71122.01)

.1 Inspection Planning

a. Inspection Scope

The inspectors reviewed the calendar years 2002 and 2003 Annual Effluent Reports to verify that the program was implemented as described in Radiological Effluent Technical Specifications (RETS)/Offsite Dose Calculation Manual (ODCM) and to determine if ODCM changes were made in accordance with Regulatory Guide 1.109 and NUREG-0133. The inspectors reviewed the Annual Effluent Reports and ODCM, to determine if any changes to the design and/or operation of the radioactive waste systems changed the dose consequence to the public. The inspectors also reviewed technical and/or 10 CFR 50.59 evaluations performed, when required, for any such modifications and determined whether radioactive liquid and gaseous effluent radiation monitor setpoint calculation methodology changed since completion of the modifications. The inspectors determined if anomalous results reported in the current Annual Effluent Reports, if any, were adequately resolved.

These reviews represented one inspection sample.

b. Findings

No findings of significance were identified.



.2 Onsite Inspection - Walkdown of Effluent Control Systems, System/Program Modifications, Air Cleaning System Surveillances, and Instrument Calibrations

a. Inspection Scope

The inspectors walked down the major components of the gaseous and liquid release systems (e.g., radiation and flow monitors, demineralizers and filters, tanks, and vessels) to observe current system configuration with respect to the description in the Updated Safety Analysis Report (USAR), ongoing activities, and to assess equipment material condition.

The inspectors reviewed the licensee's technical justification for any changes made by the licensee to the ODCM, as well as to the liquid or gaseous radioactive waste system design, procedures, or operation since the last inspection to determine whether the changes affected the licensee's ability to maintain effluents as-low-as-reasonably-achievable and whether changes made to monitoring instrumentation resulted in non-representative monitoring of effluents.

The inspectors reviewed air cleaning system surveillance test results to ensure that the system was operating within the licensee's acceptance criteria. Specifically, the inspectors reviewed the most recent results of the Ventilation Filter Testing Program for the Control Room Ventilation and Standby Gas Treatment Systems to verify that test methodology, frequency and test results met Technical Specification requirements. The inspectors reviewed and discussed the test results of in-place high efficiency particulate air (HEPA) and charcoal adsorber penetration tests, laboratory tests of charcoal adsorber methyl iodide penetration, and in-place combined HEPA filter and charcoal adsorber train pressure drop tests for the system with radiation protection and system engineering staff.

The inspectors reviewed records of instrument calibrations performed since the last inspection for each point-of-discharge effluent radiation monitor and flow measurement device, and reviewed any completed system modifications and the current effluent radiation monitor alarm setpoint values for conformance with RETS/ODCM requirements. These included:

- Plant Service Water Process Radiation Monitor (PR036) and Flow Rate Device (PR052);
- Radioactive Waste Liquid Discharge Process Radiation Monitor (PR040);
- Station Heating, Ventilation, and Air Conditioning (HVAC) Process Radiation Monitor (PR001) and Flow Rate Device (PR051-151-6);
- Standby Gas Treatment System (SGTS) Process Radiation Monitor (PR004) and Flow Rate Device (PR051-151-1);
- HVAC Accident Range Monitor (PR008); and
- SGTS Accident Range Monitor (PR012).

The inspectors also reviewed calibration records of radiation measurement (i.e., chemistry counting room) instrumentation associated with effluent monitoring and release activities and the quality control records for those instruments.

These reviews represented four inspection samples.

b. Findings

No findings of significance were identified.

.3 Onsite Inspection - Effluent Release Packages, Abnormal Releases, Dose Calculations, and Laboratory Quality Control and Assurance

a. Inspection Scope

As the licensee has reported that zero radioactive liquid effluents were released since 1993 (and thus no public dose contributions from station liquid effluents), the inspectors were unable to review any current radioactive liquid waste release permits. In lieu of these reviews, the inspectors evaluated the physical and administrative controls employed by the licensee to ensure that radioactive liquid effluents have not and are not inadvertently released from the station.

Though there were no routine batch radioactive gaseous releases conducted during the on-site inspection, the inspectors reviewed several weekly continuous radioactive gaseous effluent release permits, including the projected doses to members of the public, to verify that appropriate treatment equipment was used and that the radioactive gaseous effluent was processed and released in accordance with RETS/ODCM and procedure requirements.

The licensee did not identify any abnormal releases, or releases made with inoperable effluent radiation monitors, since the last inspection in this area. As such, the inspectors were unable to review the licensee's actions for such releases.

The inspectors reviewed a selection of monthly, quarterly, and annual dose calculations to ensure that the licensee properly calculated the offsite dose from radiological effluent releases and to determine if any annual RETS/ODCM (i.e., Appendix I to 10 CFR Part 50 values) limits were exceeded.

The inspectors reviewed the results of the interlaboratory comparison program to verify the quality of radioactive effluent sample analyses performed by the licensee. The inspectors reviewed the licensee's quality control evaluation of the interlaboratory comparison test and associated corrective actions for any deficiencies identified. The inspectors reviewed the licensee's assessment of any identified bias in the sample analysis results and the overall effect on calculated projected doses to members of the public. In addition, the inspectors reviewed the results from the licensee's Nuclear Oversight (quality assurance) audits to determine whether the licensee met the requirements of the RETS/ODCM and 10 CFR Part 20.

These reviews represented four inspection samples.

.4 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed any available licensee self-assessments, audits, and Special Reports related to the radioactive effluent treatment and monitoring program since the last inspection to determine if identified problems were entered into the corrective action program for resolution. The inspectors also verified that the licensee's self-assessment program was capable of identifying repetitive deficiencies or significant individual deficiencies in problem identification and resolution.

The inspectors also reviewed corrective action reports from the radioactive effluent treatment and monitoring program since the previous inspection, interviewed staff, and reviewed documents to determine if the following activities were being conducted in an effective and timely manner commensurate with their importance to safety and risk:

- 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; and
- Implementation/consideration of risk significant operational experience feedback.

These reviews represented one inspection sample.

b. Findings

No findings of significance were identified.

**4 OTHER ACTIVITIES (OA)**

4OA1 Performance Indicator Verification (71151)

To perform a periodic review of performance indicator (PI) data to determine its accuracy and completeness.

**Cornerstones: Mitigating Systems, Barrier Integrity**

.1 Reactor Safety Strategic Area

a. Inspection Scope

The inspectors sampled the licensee's submittals for performance indicators (PIs) and periods listed below. The inspectors used PI definitions and guidance contained in

Revision 2 of Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," to verify the accuracy of the PI data. The following PI was reviewed:

- RHR Unavailability
- Reactor Coolant System (RCS) Specific Activity

The inspectors reviewed the licensee's assessment of its performance indicator for RCS specific activity by reviewing Chemistry Department records and selected isotopic analyses (October 2003 through June 2004) to verify that the greatest Dose Equivalent Iodine (DEI) value obtained during those months corresponded with the value reported to the NRC. The inspectors also reviewed selected DEI calculations to verify that the appropriate conversion factors were used in the assessment as required by Technical Specifications. Additionally, on November 3, 2004, the inspectors observed a chemistry technician obtain, prepare, and analyze a reactor coolant sample for DEI to verify adherence with licensee procedures for the collection and analysis of reactor coolant system samples.

These reviews represented two inspection samples.

### **Cornerstone: Occupational and Public Radiation Safety**

#### **.2 Radiation Protection Strategic Area**

##### **a. Inspection Scope**

The inspectors sampled the licensee's submittals for performance indicators (PIs) and periods listed below. The inspectors used PI definitions and guidance contained in Revision 2 of Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," to verify the accuracy of the PI data. The following PIs were reviewed:

- Occupational Exposure Control Effectiveness; and
- RETS/ODCM Radiological Effluent.

The inspectors previously reviewed the one locked high radiation area occurrence under the Occupational Exposure Control Effectiveness PI which occurred in February 2004 (see Inspection Report 05000461/2004002, Section 2OS1.1). Since no additional reportable events were identified by the licensee for the 4th Quarter 2003 through 2nd Quarter 2004, the inspectors compared the licensee's data with the corrective action program database and the radiological controlled area exit electronic dosimetry transaction records for these time periods, to verify that there were no unaccounted for occurrences in the PI. Additionally, the inspectors conducted walkdowns of accessible locked high radiation areas and very high radiation area entrances to verify the adequacy of controls in place for these areas.

Since no reportable RETS/ODCM radiological effluent PI occurrences were identified by the licensee for the 4th Quarter 2003 through 2nd Quarter 2004, the inspectors

compared the licensee's data and reviewed corrective action documents generated during the time period to identify any potential occurrences such as unmonitored, uncontrolled or improperly calculated effluent releases that may have impacted offsite dose. Also, concurrent with the reviews discussed in Section 2PS1.3 of this report, the inspectors evaluated the licensee's methods for determining offsite dose and selectively verified that liquid and gaseous effluent release data and associated offsite dose calculations performed since this indicator was last reviewed were accurate.

These reviews represented two inspection samples.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

Review of Prompt Investigations for Trends, Rigor, and Common-Cause Attributes

Introduction

The inspectors noted a slight increase in the number of plant issues involving poor human performance and inadequate configuration control. Some of these issues resulted in prompt investigations and apparent cause evaluations being performed by the licensee. The inspectors selected four issue reports (IR) with approved prompt investigations from June 2004 through December 2004 for a review of the licensee's problem identification and resolution program.

a. Inspection Scope

The inspectors reviewed the IRs and the associated prompt investigations for any discernible trends, common-cause attributes, and lack of rigor. The IRs were as follows:

- IR 264698, Division 2 Diesel Generator Lockout Relay Activated During Troubleshooting, dated October 21, 2004;
- IR 260605, Auto Start of Division 2 Shutdown Service Water Pump, dated October 15, 2004;
- IR 240212 Steam Bypass Valve Electro-hydraulic Control Pump Breaker Discovered to be Tripped, dated August 3, 2004; and
- IR 269291, Reactor Water Cleanup Pump Both Tripped, dated November 3, 2004.

The inspectors reviewed the above IRs and the associated prompt investigations to verify that the licensee's identification of the problems were complete, accurate, and timely, and that the consideration of extent of condition review, generic implications, common cause, and previous occurrences was adequate. The inspectors also

considered the licensee's evaluation and disposition of performance issues, evaluation and disposition of operability issues, and application of risk insights for prioritization of issues.

These reviews completed one inspection sample.

b. Findings

No findings of significance were identified. The inspectors did not identify a trend or common-cause for the issues documented by the selected IRs. Two IRs involved human performance issues by operators, both in the field and in the control room. The others were caused by equipment failures. The inspectors reviewed the proposed corrective actions for the selected IRs to ensure that generic implications were addressed and that the corrective actions were appropriately focused on correcting the identified problems.

4OA3 Event Follow-up (71153)

(Closed) LER 05000461/2004005-00: Automatic Start of Division 2 Shutdown Service Water Pump Due to Unknown Cause.

On October 6, 2004, the plant was in Mode 1 with reactor power at 95 percent (which is the maximum power achievable under the authorized power uprate). A planned maintenance outage was in progress for the Division 1 emergency diesel generator (EDG). Several systems were in a protected status due to the EDG outage including the Divisions 2 and 3 shutdown service water (SX) systems. The Division 1 SX system was out of service and Divisions 2 and 3 SX system pumps were in standby; plant service water (WS) was providing steady pressure to Divisions 2 and 3 SX through crosstie piping. Operators were securing from a flush of the Divisions 2 and 3 EDG heat exchangers for corrosion prevention when various alarms in the main control room (MCR) indicated the Division 2 SX pump had automatically started unexpectedly. An operator was dispatched to the SX system equipment and verified proper operation of the equipment. In the MCR, operators observed various alarms for the auto-start, including one for a low-pressure condition in the SX system. A prompt investigation was initiated including identifying the location of workers in the plant and their activities. No plant activity was in progress that could have caused the automatic start of the Division 2 SX pump. Condition Report 260905 was initiated to investigate the cause of the automatic pump start and to identify corrective actions.

The Division 2 SX system remained operable during and after the event based on the system responding as expected to the valid low pressure signal. No automatic or manually initiated safety-system responses were necessary to place the plant in a safe and stable condition. No inoperable equipment or components directly affected this event. A root cause could not be determined for the auto-start of the Division 2 SX pump. The cause investigation identified that a low-pressure condition occurred in the SX system, most likely caused by an operator closing the WS to SX crosstie valve, resulting in the auto-start of the SX pump. The cause investigation included: investigating operator performance; reviewing other plant activities in progress at the time of the event; completing a troubleshooting plan for components, logic, and

controls having a potential to cause an auto-start of the Division 2 SX pump; and completing a failure analysis on the hand-switch for the WS to SX system crosstie valve due to industry operating experience. No equipment deficiencies were found. Corrective actions included replacing the hand-switch for the WS to SX crosstie valve as a precaution, placing the EDG flushing activities on the plant schedule, having the operators demonstrate proper peer and self checking activities, and placing a hard plastic protective cover over the crosstie valve hand switch. The LER was reviewed by the inspectors and no findings of significance were identified. This LER is closed.

#### 4OA6 Meetings

##### .1 Exit Meeting

The inspectors presented the inspection results to Mr. R. Bement and other members of licensee management at the conclusion of the inspection on January 13, 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:

- Radiation Protection (RETS/ODCM) inspection with Mr. M. McDowell on November 5, 2004.
- Annual NRC Licensed Operator Requalification examination with Mr. M. Baetz, Licensed Operator Requalification Training Group Lead, on December 29, 2004, via telephone.

#### **ATTACHMENT: SUPPLEMENTAL INFORMATION**

## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee

M. Baetz, Licensed Operator Requalification Training Group Lead  
R. Bement, Site Vice President  
R. Campbell, REMP/RETS  
W. Carsky, Shift Operations Superintendent  
R. Coon, Nuclear Oversight Manager  
J. Cunningham, Work Management Director  
R. Davis, Radiation Protection Director  
J. Domitrovich, Maintenance Director  
R. Frantz, Regulatory Assurance Representative  
M. Hiter, Access Control Supervisor  
W. Iliff, Regulatory Assurance Director  
J. Madden, Chemistry Manager  
M. McDowell, Plant Manager  
R. Peak, Site Engineering Director  
D. Schavey, Operations Director  
T. Shortell, Training Manager  
C. Williamson, Security Manager

### LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

#### Opened and Closed

None

#### 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 or portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

### 1R01 Adverse Weather

WC-AA-107, Seasonal Readiness, Revision 0  
CPS 1860.01Revision Cold Weather Operation, Revision 5b  
CPS 1860.01C001, Cold Weather Preparations Checklist, Revision 4b  
WO 531058, OVA02A Fourth stage heater light cycles three times per second  
WO 708847, 1AP58E-12DL Breaker found tripped  
IR 273638, 2004 Winter readiness exceptions open as of November 15, 2004  
IR 273598, Underground fire protection piping leak, November 15, 2004  
IR 273379, 0HS01AG (MWP Unit Heater G) Fan does not work, November 14, 2004

### 1R04 Equipment Alignments

CPS 3310.01E001, Reactor Core Isolation Cooling Electrical Lineup, Revision 14a  
CRS 3310.01V001, Reactor Core Isolation Cooling Valve Lineup, Revision 12b  
CPS 3310.01V002, RCIC Instrument Valve Lineup, Revision 9c  
CR 212795, 1E51C003 RCIC Water Leg Pump Dark Oil in Bubbler, April 2, 2004  
CR 228748, RCIC Throttle Linkage Potential Movement Restriction, June 15, 2004  
CR 240608, Oil Leak/Loose Nuts Discovered on RCIC Shaft Driven Oil Pump, July 31, 2004  
CR 241661, Identify and Fix Oil Seepage - RCIC Turbine Lube Oil System, August 4, 2004  
Engineering Change 350620, Seepage Issue from RCIC Turbine Lube Oil System Identified Under CR 240608, Revision 0  
CPS 3506.01P001, Division 1 diesel generator operations, Revision 0c  
CPS 3506.01V001, Diesel generator and support systems valve lineup, Revision 13A  
CPS 3506.01E001, Diesel generator and support systems electrical lineup, Revision 18a  
CPS 3403.01E001, Diesel generator HVAC electrical lineup, Revision 7a  
CPS 3506.01V002, Diesel generator and support systems instrument lineup, Revision 11b  
CPS 3403.01V002, Diesel generator HVAC instrument valve lineup, Revision 4  
CPS 3313.01, Low Pressure Core Spray, Revision 15c  
CPS 3313.01E001, Low Pressure Core Spray Electrical Lineup, Revision 11a  
CPS3313.01V001, Low Pressure Core Spray Valve Lineup, Revision 13  
CPS 1893.04M101, 707 to 712 Auxiliary: LPCS Pump Room Prefire Plan, Revision 4  
CPS 8500.18, LPCS Pump Motor Feed Breaker Protective Relays Functional Test, Revision 0a  
CR 267012Revision WO574477-02 Potential configuration control challenge, October 26, 2004

CR 223647, Adverse trend in configuration control events, May 25, 2004  
CR 216287, Configuration control trap in DG procedure, April 22, 2004  
CR 216370, Low level configuration control event in Chemistry, April 22, 2004  
CPS 3312.01, Residual Heat Removal, Revision 36a  
CPS 3312.01V001, Residual Heat Removal Valve line-up, Revision 15d  
CPS 3312.01E001, Residual Heat Removal Electrical line-up, Revision 14  
CPS 3312.01V002, Residual Heat Removal Instrument Valve line-up, Revision 9  
CR 227997, 1E12F0063A Indicates intermediate in the MCR, June 12, 2004  
CR 212289, Configuration Control hoses found attached to drain valves, April 1, 2004  
CR 145537, Potential inoperability of Cnmt isolation valve 1E12F004B,  
February 20, 2003

1R05 Fire Protection

USAR App. E, Fire Protection Evaluation Report, section 3.5.4, 3.5.5, and 3.5.6,  
Revision 5  
USAR App. E, Fire Protection Evaluation Report, Figure FP10-b, Revision 9  
NFPA Fire Protection Handbook, Sections 7, 17, and 19, Fifteenth Edition

1R12 Maintenance Effectiveness

CPS 9065.01, Secondary Containment Access Integrity, Revision 28E  
CPS 9065.02, Secondary Containment Integrity, Revision 29A  
CPS 9067.01, Standby Gas Treatment System Train Flow/Heater Operability,  
Revision 30B  
WO 00452030, Op Secondary Containment Integrity  
WO 00740356, Verify Secondary Containment Access Integrity  
WO 00713759, Repair Caulking & Coatings at Gas Control Boundary  
Maintenance Rule Failure Record 194046, System 89, November 19, 2004  
IR 194046, Procedure 9065.02 step 8.8 figure 1 data unacceptable, January 8, 2004  
IR 194488, VG secondary containment drawdown test fails, January 10, 2004  
IR 230613, Repair Caulking and coatings at gas control boundary, June 22, 2004  
IR 241249, Maintenance Rule pseudo system 27-15 causes functional failure,  
August 3, 2004  
IR 272088, Action plan not completed for (a)(1) system within 60 days,  
November 10, 2004

1R13 Maintenance Risk Assessments and Emergency Work Control

Clinton's Archival Operations Narrative Logs, October 18-19, 2004  
CR 264610, Failure of Division 2 Diesel Generator Direct Current Oil Pumps to Keep  
Running dated October 18, 2004  
CR 264803, Division 2 Fuel Oil Priming Pumps dated October 18, 2004  
CR 264698, Division 2 Diesel Generator Lockout Relay Activated During  
Troubleshooting dated October 18, 2004  
CR 264856, Summary of Events and Repairs to Division 2 Diesel Generator Direct  
Current Lubricating Oil Pumps dated October 19, 2004  
CR 264857, Division 2 Diesel Generator High Resistance Fuse Connection dated  
October 19, 2004

Contingency Plan, HPCS System Outage Window Week 443  
CPS Plan of the Day, Tuesday, October 26, 2004  
Clinton Power Station Online Schedule for Work Week 0443  
CPS 3309.01, High Pressure Core Spray, Revision 14d  
CPS 1041.11, 6900/4160/480V Switchgear/Circuit breaker operability program, Revision 003A  
CPS 3501.01, High voltage auxiliary power system, Revision 025B  
CPS 8410.21, Westinghouse DHP 6900, 4160 volt power circuit breaker, Revision 005B  
Drawing E02-1AP03, Electrical Loading diagram Clinton Power Station Unit 1, Revision Z  
WC-CL-201, Contingency Planning, Division 4 Inverter room backup cooling system OOS for SX-448, Revision 0  
CPS 3412.01, Essential Switchgear Heat Removal (VX), Revision 14a  
WO 576675, Replace SX Relief Valve 1SX-203  
WO 760182, Division 4 charger does not work in equalize mode  
IR 278196, Division 4 DC Bus voltage adverse trend, December 1, 2004

#### 1R15 Operability Evaluations

CR 267356, Out of Tolerance Data Discovered During Supervisory Review, October 27, 2004  
CR 267375, Spare Breaker Failed Testing, October 27, 2004  
CR 267805, Lessons Learned From Restoring HPCS Operability, October 28, 2004  
Engineering Change 352022, Evaluate Instantaneous Trip Test Results for Molded Case Circuit Breaker 1E22S0022C Obtained Under Work Order 524780-01, Revision 0  
CPS 8410.04, Molded Case Circuit Breaker/Bucket Component Functional Testing and Maintenance, Revision 20A  
ER-AA-340-1002, Service Water heat exchanger and component inspection guide, Revision 2  
IR 274061, Air Gap 0VG05SB Cooling coils, VG B Room Cooler, November 16, 2004  
IR 213809, Air gaps on room cooler 1VY01S, April 7, 2004  
IR 251443, Air gaps on room cooler 0VG07SA, September 9, 2004  
IR 261060, Air gaps around cooling coils in 1VH07SA, October 7, 2004  
USAR Section 6.3.2.2.5, ECCS Discharge Line Fill System, Revision 10  
CPS 3309.01, High Pressure Core Spray, Revision 14d  
IR 275544, Spurious abnormal noise in HPCS pump room, November 21, 2004  
Engineering Work Request 98-06-018  
Engineering Work Request 98-06-019  
Procedure LS-AA-105, Operability Determination, Revision 01  
ASME, Section III, Class 3 code, 1977 edition including Winter 78 addenda

#### 1R16 Operator Work-Arounds

IR 231174, RHR B/C waterleg pump discharge pressure high, June 24, 2004  
IR 231302, 1E12-F063C Leaks by seat, June 24, 2004  
IR 256684, 1E12F063C Leaks by seat, September 24, 2004  
IR 284997, 1E12F063C Leaks by seat per 9053.07, December 22, 2004

CPS 9053.07, RHR B/C pumps and RHR B/C water leg pump operability, Revision 45b  
OP-AA-102-103, Operator Work-Around Program; Revision 1

1R19 Post Maintenance Testing

CPS 3319.01, Standby Gas Treatment, Revision 15a  
CPS 9067.01, Standby Gas Treatment System Train Flow/Heater Operability,  
Revision 30b  
CPS 9067.03, Standby Gas Treatment System Operability, Revision 26  
IR 269584, RHR A pump discharge check valve inspection findings; November 2, 2004  
IR 269724, Data taken during 1E12-F031A inspection; November 2, 2004  
IR 269751, Additional inspection problem - 1E12-F031A; November 3, 2004  
WO 477114, Inspect disc pins and bushings for signs of wear  
WO 744680, Op 9052.01A21 RHR A Pump Operability

1R22 Surveillance Testing

CPS 9080.30, Diesel Generator Overspeed Test, Revision 3  
CPS 9000.01, Control Room Surveillance Log, Revision 33e  
CPS 9000.01D001, Control Room Surveillance Log - Mode 1, 2, 3, Revision 49b  
CPS 3315.02, Leak Detection, Revision 13c

1R23 Temporary Modifications

EC 348408, Change LPCS and LPCI internal vessel line break setpoints for transmitter  
1E31N080A, Revision 0  
WP 682745, Change LPCS/LPCI Internal vessel line break setpoints  
IR 278196, Div 4 DC Bus voltage adverse trend, December 1, 2004  
IR 279319, Div 4 Battery charger/bus low voltage, December 5, 2004  
CC-AA-112, Temporary Configuration Change, Revision 008

1EP6 Drill Evaluation

Clinton 2004 Off - Year Exercise Scenario  
EP-AA-1003, Radiological Emergency Plan Annex for Clinton Station, Revision 05  
EP-AA-111-F-07, Clinton Plant Based PAR flowchart, Revision A  
EP-MW-114-100-F-01, Nuclear Accident Reporting System (NARS) Messages,  
Revision A  
EP-AA-122-1004, Objectives and Demonstration Criteria, Revision 2

2OS1 Access Control to Radiologically Significant Areas

CPS Root Cause 200209-04; ED (Electronic Dosimeter) Dose Rate Alarm Received  
During Fuel Transfer; dated June 28, 2004

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems

AR 212278, New Scintillation Detector Has Cracked Crystal, dated April 1, 2004

AR 212956, AR/PR LAN Monitors Have Lost Their Communication Link, dated April 2, 2004  
AR 214549, Turbine Building Pressure is Positive, dated April 12, 2004  
AR 214683, Potential Unmonitored Release Path, dated April 12, 2004  
AR 215422, Enhancement - Potential Unmonitored Release Response, dated April 16, 2004  
AR 269885, Enhancement Notation for CPS 9437.63 and 9437.62, dated November 3, 2004 [NRC-Identified Issue]  
AR 269955, Shielding Plant Equipment for Operability, dated November 3, 2004 [NRC-Identified Issue]  
AR 270467, Enhancement to Rad Worker Practice During Filter Changeouts, dated November 4, 2004 [NRC-Identified Issue]  
Assessment No. 192867-22, NOS Objective Evidence Report - Template CJ3 - Gaseous Radwaste Program Controls, dated March 30, 2004  
CC-AA-112, Temporary Configuration Changes, Revision 8  
CC-CL-401, Maintenance Specification: Installation and Control of Temporary Shielding and Shielding Components, Revision 3  
Clinton Nuclear Oversight Monthly Issues [Report], dated April 1 - 30, 2004  
CPS 9432.45, Plant Service Water Effluent Flow Monitor 1FT-WS103 Channel Calibration, dated December 20, 2001  
CPS 9911.59, Gaseous Radioactive Effluent Surveillance - Monthly, dated February 7, 2003  
CPS 9911.59, Gaseous Radioactive Effluent Surveillance - Monthly, dated October 2, 2003  
CPS 9911.59, Gaseous Radioactive Effluent Surveillance - Monthly, dated December 4, 2003  
CPS 9911.59, Gaseous Radioactive Effluent Surveillance - Monthly, dated February 6, 2004  
CPS 9911.59, Gaseous Radioactive Effluent Surveillance - Monthly, dated June 3, 2004  
CPS 9911.60, Gaseous Radioactive Effluent Surveillance [Weekly Gaseous Permit], dated March 21, 2004  
CPS 9911.60, Gaseous Radioactive Effluent Surveillance [Weekly Gaseous Permit], dated October 29, 2004  
CPS Annual Radioactive Effluent Release Report, dated April 28, 2003  
CPS Annual Radioactive Effluent Release Report, dated March 30, 2004  
CPS Annual Radiological Environmental Operating Report, dated April 27, 2004  
CPS Offsite Dose Calculation Manual, Revision 19  
CPS Operability Restraint Database - Restraints/Work Orders for ODCM 2.7-1.1.a  
Liquid Effluent Monitoring Instrument Radwaste Discharge Monitor, dated November 3, 2004  
CPS Updated Safety Analysis Report - Chapter 11.5, Process and Effluent Radiological Monitoring and Sampling Systems, Revision 10  
FASA AT No. 229329-05, Check-In Self-Assessment Report - NRC Liquid and Gaseous Effluents, dated September 2, 2004  
NOSA-CPS-03-08, REMP, ODCM, Non-Radiological Effluent Monitoring, NPDES Audit Report, dated October 29, 2003  
TSR 2002-029, Temporary Shielding for 1RIX-PR005, dated June 5, 2003  
TSR 2002-030, Temporary Shielding for 1RIX-PR004, dated June 5, 2003

TSR 2002-032, Temporary Shielding for 1RIX-PR040, dated May 12, 2004  
Work Order 19768-04, Liquid Radwaste Discharge Process Radiation Monitoring  
0RIX-PR040 Channel Calibration Test, dated August 8, 2002  
Work Order 400203, HEPA Filter Test - 0VC095A/0VC095A, dated November 7, 2003  
Work Order 400506, Standby Gas Treatment System (SGTS) Flow Monitor  
0FT-VG001 Channel Calibration, dated June 6, 2003  
Work Order 402252, Main Stack Flow Monitor 0FT-VR500 Channel Calibration, dated  
June 17, 2003  
Work Order 427328, Charcoal Adsorber Leak Test - 0VG015A, dated  
December 11, 2003  
Work Order 429641, HEPA Filter Test - 0VG015A, dated December 11, 2003  
Work Order 433778, Accident Range Stack Monitor (AXM) 0RIX-PR008 [HVAC]  
Channel Calibration, dated July 10, 2003  
Work Order 462223, Charcoal Adsorber Sample - 0VC095B, dated February 3, 2004  
Work Order 470062, SGTS Exhaust PRM 0RIX-PR004 Channel Calibration Test,  
dated November 25, 2003  
Work Order 472933, Charcoal Adsorber Leak Test - 0VC095A/0VC075A, dated  
November 7, 2003  
Work Order 493980, Liquid Process Radiation Monitor 1RIX-PR036 (Plant Service  
Water Monitor) Calibration, dated April 6, 2004  
Work Order 514882, Charcoal Change Out for the 0VG08FB Filters, dated  
December 9, 2003  
Work Order 522940, Accident Range Stack Monitor (AXM) 0RIX-PR012 [SGTS]  
Channel Calibration, dated June 10, 2004  
Work Order 541028, HVAC System Exhaust PRM 0RIX-PR001 Calibration, dated  
August 5, 2004

#### 4OA1 Performance Indicator Verification

CPS 3222.10, Reactor Sample Station (1G33-Z020), Revision 8c  
CPS 6103.01, Gamma Spectroscopy, Revision 13c  
CPS 6721.01, Reactor Water Radioisotopic Analysis, Revision 8a  
CPS Chemistry Database - Weekly Dose Equivalent Iodine, dated November 7, 2003  
through June 30, 2004  
CPS Root Cause 200209-04, ED (Electronic Dosimeter) Dose Rate Alarm Received  
During Fuel Transfer, dated June 28, 2004  
Lab Sample No. 6071, CPS Chemistry HPGe Isotopic Analysis Report - 1C1 Anion,  
dated November 3, 2004  
Lab Sample No. 6171, CPS Chemistry HPGe Isotopic Analysis Report - 1C1 Anions  
200 mL Recount, dated November 3, 2004  
LS-AA-2140, Monthly Data Elements for NRC Occupational Exposure Control  
Effectiveness [and Supporting Data Files Maintained by the Radiation Protection  
Department], dated November 2003 through July 2004  
Clinton's Archival Operations Narrative Logs, Search Criteria "3.5.1, 3.5.2, 3.6.2.3,  
3.9.8, and 3.9.9", July 1, 2003, through September 30, 2004  
CR 175425, Enhancement - Management of Unavailability of RHR Heat Exchanger  
Function, September 11, 2003  
CR175463, Enhancement to Management of RHR Heat Exchanger Unavailability,  
September 12, 2003

CR 181761, 1E12-F024B Failed to Open, October 19, 2003  
CR 192528, Valve Failed to Stroke During 9053.04C002 Performance,  
December 26, 2003  
CR 193202, RHR NRC Performance Indicator for Unavailability at Exelon Action  
Region, January 2, 2004  
CR 207498, Maintenance Rule Functional Failure of 1E12F014A, Blown Fuse,  
March 10, 2004  
CR 212372, Clinton 0.6 Safety System Performance Indicator for Low Pressure (RHR)  
in Variance, April 1, 2004  
CR 212826, CPS C1R09 Shutdown Safety Analysis - RHR Unavailability, April 2, 2004  
CR 227997, 1E12F068A Indicates Intermediate in the Main Control Room,  
June 12, 2004  
CR 228499, Valve 1E12-F068A Repeat Maintenance, June 15, 2004  
CR 232509, Control Power Fuse for 1AP76E8A Appears to Have Failed, June 30, 2004  
CR 232763, Failure of Normally Energized Agastat Relay Impacts 1E12F048,  
June 30, 2004  
CR 235832, Reactor Pressure Vessel Reactor Scram During Shutdown Cooling  
Operations, July 14, 2004  
CR 236555, RHR B Pump Discharge Check Valve 1E12-F031B, July 16, 2004  
CR 240456, RHR System Unplanned Unavailability, C1F44, July 30, 2004  
CR 241061, RHR B Leak May Impact Shutdown Cooling Operability, August 3, 2004  
Excel Spreadsheets, RHR/LPCS Operating History, July 2003 through September 2004  
Engineering Change 350582, 1E12-F053B Body to Bonnet Leakage Evaluation,  
Revision 0

## LIST OF ACRONYMS USED

ADAMS	Agency wide Documents Access and Management System
CFR	Code of Federal Regulations
CRs	Condition Reports
DEI	Dose Equivalent Iodine
DG	Diesel Generator
DRS	Division of Reactor Safety
EDG	Emergency Diesel Generator
FPER	Fire Protection Evaluation Report
HEPA	High Efficiency Particulate Air [Filter]
HPCS	High Pressure Core Spray
HVAC	Heating, Ventilation, and Air Conditioning
IMC	Inspection Manual Chapter
JPM	Job Performance Measure
LORT	Licensed Operator Requalification Training
LPCS	Low Pressure Core Spray
MCR	Main Control Room
MR	Maintenance Rule
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
ORM	Operations Requirements Manual
PARS	Publicly Available Records
PI	Performance Indicator
PMT	Post Maintenance Testing
RCIC	Reactor Core Isolation Cooling
RCS	Reactor Coolant System
RETS	Radiological Effluent Technical Specifications
RHR	Residual Heat Removal
SBGT	Standby Gas Treatment
SDP	Significant Determination Process
SGTS	Standby Gas Treatment System
SX	Shutdown Service Water
TSs	Technical Specifications
USAR	Updated Safety Analysis Report
WO	Work Orders
WS	Service Water