

December 21, 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 EVALUATION OF CHANGES, TESTS, OR EXPERIMENTS AND  
PERMANENT PLANT MODIFICATIONS BASELINE INSPECTION REPORT  
05000461/2006010(DRS)

Dear Mr. Crane:

On November 30, 2006, the U.S. Nuclear Regulatory Commission (NRC) completed a combined baseline inspection of the Evaluation of Changes, Tests, or Experiments and Permanent Plant Modifications at the Clinton Power Station. The enclosed report documents the results of the inspection, which were discussed with Mr. B. Hanson, and others of your staff at the completion of the inspection on November 30, 2006.

The inspectors examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations, and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel. Based on the results of the inspection, no findings of significance were identified.

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document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-room/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

David E. Hills, Chief  
Engineering Branch 1  
Division of Reactor Safety

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

Enclosure: Inspection Report 05000461/2006010(DRS)  
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  
Assistant Attorney General  
Illinois Emergency Management Agency  
State Liaison Officer, State of Illinois  
Chairman, Illinois Commerce Commission

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Manager Licensing - Clinton Power Station  
Senior Counsel, Nuclear, Mid-West Regional Operating Group  
Document Control Desk - Licensing  
Assistant Attorney General  
Illinois Emergency Management Agency  
State Liaison Officer, State of Illinois  
Chairman, Illinois Commerce Commission

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 05000461/2006010(DRS)

Licensee: AmerGen Energy Company, LLC

Facility: Clinton Power Station

Location: Clinton, IL

Dates: November 13, 2006, through November 30, 2006

Inspectors: A. Dunlop, Senior Reactor Inspector  
M. Munir, Reactor Inspector

Approved by: D. Hills, Chief  
Engineering Branch 1  
Division of Reactor Safety (DRS)

## **SUMMARY OF FINDINGS**

IR 05000461/2006010(DRS); 11/13/2006 through 11/30/2006; Clinton Power Station. Routine engineering baseline inspection.

The inspection covered a 2-week announced baseline inspection on evaluations of changes, tests, or experiments and permanent plant modifications. The inspection was conducted by two regional based engineering inspectors. No violations were identified. 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-Revealed Findings**

**Cornerstone: Mitigating Systems**

No findings of significance were identified.

**B. Licensee-Identified Violations**

No findings of significance were identified.

## **REPORT DETAILS**

### **1. REACTOR SAFETY**

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

1R02 Evaluations of Changes, Tests, or Experiments (71111.02)

.1 Review of 10 CFR 50.59 Evaluations and Screenings

a. Inspection Scope

From November 13 through November 30, 2006, the inspectors reviewed four evaluations performed pursuant to 10 CFR 50.59. The inspectors reviewed the evaluations to confirm that they were thorough and that prior NRC approval was obtained as appropriate. The inspector could not review the minimum sample size of five evaluations because the licensee only performed four evaluations during the biennial sample period. The inspectors also reviewed sixteen screenings where licensee personnel had determined that a 10 CFR 50.59 evaluation was not necessary. In addition, three procedure changes were reviewed to verify they did not meet the applicability requirements for a screening. The evaluations and screenings were chosen based on risk significance, safety significance, and complexity. The list of documents reviewed by the inspectors are included as an attachment to this report.

The inspectors used, in part, Nuclear Energy Institute (NEI) 96-07, "Guidelines for 10 CFR 50.59 Implementation," and Revision 1, to determine acceptability of the completed evaluations, and screenings. The NEI document was endorsed by the NRC in Regulatory Guide 1.187, "Guidance for Implementation of 10 CFR 50.59, Changes, Tests, and Experiments," dated November 2000. The inspectors also consulted Part 9900 of the NRC Inspection Manual, "10 CFR Guidance for 10 CFR 50.59, Changes, Tests, and Experiments."

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17B)

.1 Review of Permanent Plant Modifications

a. Inspection Scope

From November 13 through November 30, 2006, the inspectors reviewed seven permanent plant modifications that had been installed in the plant during the last two years. In addition, the inspectors reviewed three equivalency evaluations and one commercial grade dedication. The modifications were chosen based upon risk significance, safety significance, and complexity. As per inspection procedure 71111.17B, one modification was chosen that affected the barrier integrity cornerstone. The inspectors reviewed the modifications to verify that the completed design changes

were in accordance with the specified design requirements, and the licensing bases, and to confirm that the changes did not adversely affect any systems' safety function. Design and post-modification testing aspects were verified to ensure the functionality of the modification, its associated system, and any support systems. The inspectors also verified that the modifications performed did not place the plant in an increased risk configuration.

The inspectors also used applicable industry standards to evaluate acceptability of the modifications. The list of modifications and other documents reviewed by the inspectors is included as an attachment to this report.

b. Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES (OA)**

**4OA2 Identification and Resolution of Problems**

.1 Routine Review of Condition Reports

a. Inspection Scope

From November 13 through November 30, 2006, the inspectors reviewed ten Corrective Action Process documents that identified or were related to 10 CFR 50.59 evaluations and permanent plant modifications. The inspectors reviewed these documents to evaluate the effectiveness of corrective actions related to permanent plant modifications and evaluations for changes, tests, or experiments issues. In addition, corrective action documents written on issues identified during the inspection were reviewed to verify adequate problem identification and incorporation of the problems into the corrective action system. The specific corrective action documents that were sampled and reviewed by the inspectors are listed in the attachment to this report.

b. Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES**

**4OA6 Meetings**

.1 Exit Meeting

The inspectors presented the inspection results to Mr. B. Hanson and others of the licensee's staff, on November 30, 2006. Licensee personnel acknowledged the inspection results presented. Licensee personnel were asked to identify any documents, materials, or information provided during the inspection that were considered proprietary. No proprietary information was identified.

ATTACHMENT: SUPPLEMENTAL INFORMATION

**SUPPLEMENTAL INFORMATION**

**KEY POINTS OF CONTACT**

Licensee

B. Hanson, Site Vice President  
M. McDowell, Plant Manager  
J. Cunningham, Work Management Director  
R. Frantz, Regulatory Assurance Representative  
P. Marcum, Electrical/I&C Design Manager  
P. Simpson, Regulatory Assurance Director (Acting)  
R. Peak, Site Engineering Director  
O. Villireal, Nuclear Oversight  
R. Weber, Senior Manager Design Engineering

Nuclear Regulatory Commission

C. Pederson, Director, Division of Reactor Safety  
B. Dickson, Senior Resident Inspector  
D. Tharp, Resident Inspector

**ITEMS OPENED, CLOSED, AND DISCUSSED**

Opened, Closed, and Discussed

None

## LIST OF DOCUMENTS REVIEWED

The following is a list of licensee documents reviewed during the inspection, including documents prepared by others for the licensee. Inclusion on this list does not imply that 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 in this list does not imply NRC acceptance of the document, unless specifically stated in the inspection report.

IR02 Evaluation of Changes, Tests, or Experiments (71111.02)

10 CFR 50.59 Screenings

CL-2004-S-001; V-TIP Change to Add Allowance for Battery Equalizing at 2.5 VPC; dated January 7, 2004

CL-2004-S-007; Diesel Generator Diagnostic Testing; dated January 30, 2004

CL-2004-S-010; 24-Month - Revise Division I, II, and III 4.16 kV Buses Undervoltage Relays (Degraded Voltage Relays) Operate and Reset Voltage Set-points; dated February 4, 2004

CL-2004-S-021; Add SX Division I, II, and III Vacuum Breakers to Mitigate Water Hammer; dated February 26, 2004

CL-2004-S-029; Revise Setpoint for Ground Detection Relay 1X1R-DC090 in DC MCC 1F (1DC17E); dated March 18, 2004

CL-2004-S-035; 1SX303A/B; Active Safety Function; dated April 24, 2004

CL-2004-S-074; Redesign of Check Valve 1N66F130 and Installation of an Isolation Valve on Line 1OG92A-1; dated October 1, 2004

CL-2004-S-084; Changes to Bases Sections B3.3.4.1 and B3.3.6.1; dated November 18, 2004

CL-2005-S-002; Change the Sudden Pressure Relay Trip Logic for the Unit Auxiliary Transformers (1AP01EA and 1AP01EB) from a One-Out-Of-One (1/1) Scheme to a Two-Out-Of-Two (2/2) Scheme; dated March 10, 2005

CL-2005-S-008; ORM 2.4.9, Essential Switchgear Room (VX) Ventilation; dated May 25, 2005

CL-2005-S-009; Revise Delay Period for Missed Testing Requirements, Section 1.3.3; dated March 29, 2005

CL-2005-S-018r1; Reroute RCIC Head Spray Piping to Avoid Hydrogen Accumulation; dated November 7, 2005

CL-2005-S-046; Swing Battery Charger (1DC11E) to Supply 125 Vdc Power to Division 1 MCC 1A (1DC13E) While Division I Battery Charger (1DC06E) is Removed from Service for Preventive Maintenance; dated July 25, 2005

CL-2005-S-052; 24-Month Refuel Cycle Project - ORM 4.5.2.1a MOV Thermal Overload Protection - Frequency Change; August 15, 2005

CL-2005-S-060; USAR Change No. 2005-028; dated September 22, 2005

CL-2005-S-069; Bypass High Water Temperature Switch S11 for the Division III; dated November 21, 2005

10 CFR 50.59 Evaluations

CL-2004-E-078; RPV Core Shroud Repair; dated March 11, 2005

CL-2005-E-041; To Provide a Temporary Vent Path for the RHR Shutdown Cooling Suction Header; dated June 27, 2005

CL-2006-E-002; Interim Abandonment of RT Pump "C"; dated January 17, 2006

CL-2006-E-003; Increase ORM Acceptance Criteria for EFCVs 1CM066 and 1CM067; dated February 23, 2006

IR17 Permanent Plant Modifications (71111.17B)

Modifications

EC 348071; LPCS/RHR-A Internal Line Break Setpoint Revision for Transmitter 1E31N080A; Revision 0

EC 359047; Issue Design for Alternate Motor for 0VC03CA Fan; Revision 0

EC 351756; PLU K1 Relay has a Scram Potential; Revision 0

EC 353793; Replace Obsolete BOP 1E DC Main Feed Breaker with Fused Disconnect Assembly; Revision 0

EC 357284; CO2/Diesel Generator Ventilation (VD) Relay Replacement EC Required for Closure of OP Evaluation IR 300035; Revision 0

EC 358913; Formalize Voltage Profile for MOV 1E22-F012; Revision 0

EC 359047; Issue Design for Alternate Motor for 0VC03CA Fan; Revision 0

Commercial Grade Dedications

CGD 46343; Diesel Generator Circulating Lube Oil Pump Discharge Check Valve Seal Kit; dated October 20, 2005

### Equivalency Evaluations

IEE 34648; Item Equivalency Evaluation for Using CR 120BD05041 Relay as an Alternate to the Existing ITE/Gould J13 Relay; Revision 0

IEE 36867; Item Equivalency Evaluation for a Molded Case Circuit Breaker Handle Material Change; Revision 0

IEE 50980; Item Equivalency Evaluation for a Molded Case Circuit Breaker Qualification; Revision 0

### Other Documents Reviewed During Inspection

#### Corrective Action Program Documents Generated As a Result of Inspection

IR00558772; 50.59 Inspection Identified Reference Error in CL-2004-S-029; dated November 16, 2006

IR00558788; USAR Chapter 3 References IWP Code That Is No Longer Used; dated November 16, 2006

IR00560840; 50.59 and USAR Inconsistency; dated November 21, 2006

#### Corrective Action Program Documents Reviewed During the Inspection

IR295012; Excessive Oil Leakage Observed for MPT "A"; dated January 27, 2005

IR342801 and Op Eval 342801-02; RHR Shutdown Cooling Suction Isolation Valves Leaking Past Their Seats; Revision 1

IR359292; Key Modification Objective Not Achieved; dated August 3, 2005

IR488071; Received Annunciator 5011-8F, ERAT SVC TROUBLE; dated May 8, 2006

IR448363; Excess Flow Check Valve 1CM066 Closed at 1.05 gpm; dated February 1, 2006

IR449951; EC347160 Not Routed for Ops DAR Yet Procedures are Impacted; dated December 12, 2006

IR494152; WO Pump Motor Breaker Settings Lower than Standard Practice; dated May 26, 2005

IR495509; Alarm Response Procedures Not Revised to Reflect Engineering Change; June 1, 2006

IR508667; 50.59 Screen Not Revised for Revision 3 of EC; dated July 17, 2006

IR 516896; Emergency Diesel Generator USAR Discrepancy; dated August 4, 2006

## Calculations

Analysis No. 19-AN-19; Calculations for Functional Requirements for 1<sup>st</sup> and 2<sup>nd</sup> Level Undervoltage Relays at 4 kV Buses 1A1, 1B1, and 1C1; Revision 3

Analysis No. 19-AK-13; Analysis of Load Flow, Short Circuit and Motor Starting Using ETAP Power Station; Revision 0

Analysis No. 19-D-08; 125V DC MCC 1E and 1F Circuit Breaker Settings; Revision 2D

Analysis No. 19-D-12; Setting for 125 VDC Ground Detecting Voltmeters; Revision 0

## Drawings

E02-1AP03; Electrical Loading Diagram; Revision Z

E02-1DC04; Key Diagram 125V DC MCC 1E (1DC16E); Revision 9

AE-CLT6-1DC09; DC MCC 1E 1DC16E Ground Fault; Revision 0

AE-CLT6-1DC090; DC MCC 1E 1DC17E Ground Fault; Revision 0

## Procedures

CPS 3310.01; Reactor Core Isolation Cooling (RI); Revision 26

CPS 3211.01; Shutdown Service Water (SX); Revision 6

CPS 3303.01; Reactor Water Cleanup (RT); Revision 30

CPS 5000.01; Alarm Panel 5000 Annunciators - Row 1; Revision 25a

CPS 9054.02; Reactor Core Isolation Cooling Valve Operability Checks; Revision 36

## Miscellaneous Documents

FASA AT No. 476070; Modifications and 10 CFR50.59 Reviews; dated July 13, 2006

IST Program Plan; dated October 18, 2006

## Work Orders

WO00751954; MPT 1C Oil Leak; dated February 21, 2005

WO00756473; MPT 1A Oil leaks; dated November 18, 2004

WO00906708; RHR Out-of-Service Alarm Due to 1E31-N680A; dated May 19, 2006

## **LIST OF ACRONYMS USED**

ADAMS	Agency-Wide Document Access and Management System
CFR	Code of Federal Regulations
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
EC	Engineering Change
IMC	Inspection Manual Chapter
IR	Inspection Report
MCC	Motor Control Center
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
ORM	Operations Requirements Manual
PARS	Publicly Available Records
RHR	Residual Heat Removal
SDP	Significance Determination Process
SR	Surveillance Requirement
TS	Technical Specifications
USAR	Updated Safety Analysis Report