

March 15, 2001

Mr. Michael Heffley
Vice President
Clinton Power Station
AmerGen Energy Company, LLC
RR 3
P. O. Box 228
Clinton, IL 61727

SUBJECT: CLINTON POWER STATION
NRC INSPECTION REPORT 50-461/01-03(DRP)

Dear Mr. Heffley:

On February 23, 2001, the NRC completed an inspection at your Clinton Power Station. The enclosed report documents the inspection findings which were discussed on February 23, 2001, with you and other members of your staff.

This inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

No findings of significance were identified.

In accordance with 10 CFR 2.790 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/NRC/ADAMS/index.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Thomas J. Kozak, Chief
Project Branch 4
Division of Reactor Projects

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

Enclosure: Inspection Report No. 50-461/01-03(DRP)

See Attached Distribution

M. Heffley

-2-

cc w/encl: M. Pacilio, Plant Manager
M. Reandeu, Director - Licensing
G. Rainey, Chief Nuclear Officer
E. Wrigley, Manager-Quality Assurance
M. Aguilar, Assistant Attorney General
G. Stramback, Regulatory Licensing
Services Project Manager
General Electric Company
Chairman, DeWitt County Board
State Liaison Officer
Chairman, Illinois Commerce Commission

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M. Heffley

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 50-461/01-03(DRP)

Licensee: AmerGen Energy Company, LLC

Facility: Clinton Power Station

Location: Route 54 West
Clinton, IL 61727

Dates: January 1 through February 23, 2001

Inspectors: P. L. Loudon, Senior Resident Inspector
C. E. Brown, Resident Inspector
K. K. Stoedter, Regional Inspector
D. E. Zemel, Illinois Department of Nuclear Safety

Approved by: Thomas J. Kozak, Chief
Project Branch 4
Division of Reactor Projects

NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety	Radiation Safety	Safeguards
<ul style="list-style-type: none">•Initiating Events•Mitigating Systems•Barrier Integrity•Emergency Preparedness	<ul style="list-style-type: none">•Occupational•Public	<ul style="list-style-type: none">•Physical Protection

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: <http://www.nrc.gov/NRR/OVERSIGHT/index.html>.

SUMMARY OF FINDINGS

IR 05000461-01-03(DRP), on 01/01 through 02/23/01, AmerGen Energy Company LLC, Clinton Power Station; Resident Inspector Report.

The inspection was conducted by resident and regional inspectors.

A. Inspector Identified Findings

No findings of significance were identified.

B. Licensee Identified Findings

A violation of very low significance which was identified by the licensee has been reviewed by the inspectors. Corrective actions taken or planned by the licensee appear reasonable. This violation is listed in Section 4OA7 of this report.

Report Details

Summary of Plant Status

The licensee operated the plant at essentially 100 percent power from the beginning of the inspection period until an automatic plant shutdown occurred on February 4, 2001. The plant was subsequently re-started on February 6, 2001, and was operated at 100 percent power for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

The inspectors reviewed piping and instrument diagrams, system procedures, training manuals, previously identified equipment deficiencies, condition reports, and vendor information as part of a full system walkdown of the reactor core isolation cooling system. These activities were conducted to verify that equipment was appropriately aligned for this high risk-importance safety system.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

a. Inspection Scope

The inspectors reviewed portions of the licensee's Fire Protection Evaluation Report (FPER), the Updated Safety Analysis Report (USAR), and Pre-Fire Plans to verify consistency in the documented analysis with installed fire protection equipment at the station. To assess the control of transient combustibles and ignition sources, the material and operational condition of fire-protection systems and equipment, and the status of fire barriers, the inspectors conducted walk downs of the following risk significant areas:

- Shutdown service water (SX) pump rooms and the general areas within the lake water screen house (Fire Zones M-1 and M-2)
- Division III (Div III) switchgear room, cable spreading room, Division III & IV batteries (Fire Zones CB-1g, CB-3, CB-4, and CB-5)
- Diesel generator building (Fire Zones D-1 through D-10)

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

The inspectors reviewed heat exchanger performance testing on the low pressure core spray (LPCS) room cooler utilizing CPS 2602.01D018 "LPCS Pump Room Cooler, 1VYO1S," Revision 2, to verify identification of potential deficiencies which could mask degraded performance, to verify potential common-cause heat sink performance problems that have the potential to increase risk, and to verify the identification and resolution of heat-sink performance problems that could result in initiating events or that could affect multiple heat exchangers in mitigating systems and thereby increase risk.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Re-qualification (71111.11)

a. Inspection Scope

The inspectors reviewed the licensee's operator training program to evaluate operator performance in mitigating the consequences of a simulated event, particularly in the areas of human performance. The inspectors observed operator performance during a simulator training scenario involving the failure of a feed-water flow sensor and other equipment deficiencies which led to a reactor trip. The inspectors evaluated the following attributes of the activity:

- communication clarity and formality
- timeliness and appropriateness of crew actions
- prioritization, interpretation, and verification of alarms
- correct use and implementation of procedures
- oversight and direction provided by the shift supervisor and shift manager

The inspectors also reviewed Simulator Seminar Outline of Instruction, Diagnostic Evaluation Scenario RS96077-01, for the expected crew responses. The inspectors attended the pre-scenario briefing on expectations and lessons learned and observed portions of the scenario.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation (71111.12)

a. Inspection Scope

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-term 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 their being in the increased monitoring (MR category (a)(1)) group. The selected systems were:

- Large, medium, and molded-case circuit breakers
- Rod control and information system
- Auxiliary power systems
- 125 Volt direct current system
- Residual heat removal system

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessment and Emergent Work Evaluation (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 assessed the effectiveness of risk management activities for the following work activities or work weeks:

- Division II (Div II) EDG generator bearing replacement
- Division II EDG 24-hour surveillance test conducted in conjunction with standby liquid control (SLC) system surveillance tests and switchyard maintenance
- Reactor protective system (RPS) drywell pressure channel calibration
- Work week of January 22 through 27, 2001
- Disabling of many main control room (MCR) annunciators during planned online P-850 control panel maintenance

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-routine Plant 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 operators' responses were in accordance with the required procedures. In particular, the inspectors reviewed personnel performance during the following plant events:

- Automatic reactor shutdown on February 4, 2001
- Reactor restart activities on February 6 and 7, 2001

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 ensure that operability was properly justified and the component or system remained available such that no unrecognized risk increase had occurred.

- CR 2-01-02-147 - Babbit particles in reactor core isolation cooling (RCIC) system turbine lube oil sample

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed and observed portions of the following post-maintenance testing (PMT) activities involving risk significant equipment to ensure that the activities were adequate to verify system operability and functional capability:

- Division I SLC molded case circuit breaker power supply
- Division II EDG bearing replacement
- Turbine stop and combined intermediate valve testing following modifications
- MCR Annunciators following P-850 panel power supply replacement

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed portions of the following surveillance tests to verify that risk significant systems and equipment were capable of performing their intended safety functions and assessed their operational readiness:

- CPS 8410.04, "Molded Case Circuit Breaker/ Bucket Component Functional Testing and Maintenance," Revision 15a, for Div I SLC power supply breaker work

- Division II EDG 24 hour surveillance test online in accordance with CPS 9080.13, "Diesel Generator 1A (1B) 24 Hour Run and Hot Restart - Operability," Revision 36b
- CPS 9060.10, "Fuel Pool Cleaning and Cleanup Pump and Valve Operability," Revision 40a
- CPS 9431.01, "RPS Drywell Pressure C71-N050A (A,C,D) Channel Calibration," Revision 35a with At-Risk-Revision No. 01-0019
- Evaluation of TS pressure band associated with RCIC cold quick start surveillance test
- Division III EDG monthly quick start surveillance test

b. Findings

No findings of significance were identified.

4. Other Activities

4OA3 Event Follow-up (71153)

.1 Notice of Enforcement Discretion (NOED)

(Closed) Licensee Event Report 2001-001: "Enforcement Discretion to Replace Generator Bearings in Division II Emergency Diesel Generator." This report details the circumstances surrounding the NOED which was requested and granted on January 13, 2001, to affect repairs on the Div II EDG following generator bearing problems detected during a 24-hour surveillance test.

.2 Automatic Reactor Shutdown on February 4, 2001

The inspectors reviewed the circumstances surrounding the unplanned automatic reactor shutdown on February 4, 2001. The shutdown occurred while operators were conducting routine turbine stop and combined intermediate valve surveillance testing. The automatic shutdown was caused by a turbine system electro-hydraulic fluid low pressure condition which initiated a main turbine trip. Since reactor power was above the turbine trip/reactor trip set point of 40 percent, the reactor automatically shutdown on the receipt of the turbine trip signal. No performance deficiencies were identified in association with the automatic reactor shutdown.

b. Findings

No findings of significance were identified.

4OA6 Meetings, including Exit

a. Inspection Scope

The inspectors presented the inspection results to Mr. J. M. Heffley, Site Vice President, and other members of licensee management on February 23, 2001. The licensee

acknowledged the findings presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

4OA7 Licensee Identified Violations The following finding of very low significance was identified by the licensee and is a violation of NRC requirements which met the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as a Non-Cited Violation (NCV).

NCV Tracking Number

Requirement Licensee Failed to Meet

NCV 461/01-03-01

10 CFR 50.54(q), requires, in part, that a licensee shall follow emergency plans which meet the standards in 10 CFR 50.47(b). For an approximate 2-month time period, the licensee failed to meet one of the minimum on-shift emergency response organization (ERO) staffing requirements contained in Table 2-1 of the licensee's emergency plan. This issue is in the licensee's corrective action program as CR 2-01-02-132.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

J. Heffley, Site Vice President
W. Iliff, Director - Licensing
W. Maguire, Director - Plant Engineering
C. Matthews, Manager-Radiation Protection
M. Pacilio, Station Manager - Clinton Power Station
J. Randich, Manager - Work Management
R. Svaleson, Director - Operations
F. Tsakeres, Manager - Maintenance
P. Walsh, Manager - Nuclear Station Engineering Department
E. Wrigley, Manager - Nuclear Oversight

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-461/01-03-01 NCV Failure to meet minimum on-shift ERO staffing requirements

Closed

50-461/01-03-01 NCV Failure to meet minimum on-shift ERO staffing requirements

50-461/2001-001 LER Enforcement Discretion to Replace Generator Bearings in
Division II EDG

Discussed

None

LIST OF ACRONYMS

ADAMS	Agencywide Documents Access and Management System
CPS	Clinton Power Station
Div	Division
EDG	Emergency Diesel Generator
ERO	Emergency Response Organization
FPER	Fire Protection Evaluation Report
LER	Licensee Event Report
LPCS	Low Pressure Core Spray
MCR	Main Control Room
MR	Maintenance Rule
NCV	Non-Cited Violation
NOED	Notice of Enforcement Discretion
NRC	Nuclear Regulatory Commission
PARS	Publicly Available Records
PI	Performance Indicators
PMT	Post-Maintenance Testing
RCIC	Reactor Core Isolation Cooling
RPS	Reactor Protective System
SLC	Standby Liquid Control
SX	Shutdown Service Water
TS	Technical Specifications
USAR	Updated Safety Analysis Report

List of Baseline Inspections Performed

The following inspectable area procedures were used to perform inspections during the report period. Documented findings are contained in the body of the report.

Inspection Procedure

<u>Number</u>	<u>Title</u>	<u>Report Section</u>
71111.04	Equipment Alignment	1R04
71111.05	Fire Protection	1R05
71111.07	Heat Sink Performance	1R07
71111.11	Licensed Operator Re-qualification	1R11
71111.12	Maintenance Rule Implementation	1R12
71111.13	Maintenance Risk Assessment and Emergent Work Evaluation	1R13
71111.14	Personnel Performance During Non-routine Plant Evolutions	1R14
71111.15	Operability Evaluations	1R15
71111.19	Post Maintenance Testing	1R19
71111.22	Surveillance Testing	1R22
71151	Performance Indicator Verification	4OA1
71153	Event Follow-up	4OA3