

March 20, 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 50-461/01-05(DRS)

Dear Mr. Heffley:

On March 8, 2001, the NRC completed a baseline inspection at your Clinton Power Station. The results of this inspection were discussed on March 8, 2001, with yourself and members of your staff. The enclosed report presents the results of that inspection.

The 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).

We will gladly discuss any questions you have concerning this inspection.

Sincerely,

***/RA/***

John Jacobson, Chief  
Mechanical Engineering Branch  
Division of Reactor Safety

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

Enclosure: Inspection Report 50-461/01-05(DRS)

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

-2-

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G. Stramback, Regulatory Licensing  
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Chairman, DeWitt County Board  
State Liaison Officer  
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: 50-461/01-05(DRS)

Licensee: AmerGen Energy Company, LLC

Facility: Clinton Power Station

Location: Route 54 West  
Clinton, IL 61727

Dates: March 5-8, 2001

Inspectors: A. Dunlop, Reactor Engineer  
G. O'Dwyer, Reactor Engineer

Approved by: John Jacobson, Chief  
Mechanical Engineering Branch  
Division of Reactor Safety

## SUMMARY OF FINDINGS

IR 05000461-01-05(DRS), on 03/5-8/2001, AmerGen Energy Company, LLC, Clinton Power Station, Unit 1. Maintenance Rule Implementation.

The report covers a four day period of announced inspection by two regional reactor engineers. The significance of most/all findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply are indicated by "no color" or by the severity level of the applicable violation. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at <http://www.nrc.gov/NRR/OVERSIGHT/index.html>.

### **REACTOR SAFETY**

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

No findings of significance were identified.

## Report Details

### 1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

#### 1R12 Maintenance Rule Implementation (71111.12B)

##### a. Inspection Scope

The objective of the inspection was to:

- Verify that the periodic evaluation was completed within the time restraints defined in the maintenance rule (once per refueling cycle, not to exceed two years), ensuring that the licensee reviewed its goals, monitoring, preventive maintenance activities, industry operating experience, and made appropriate adjustments as a result of that review;
- Verify that the licensee balanced reliability and unavailability during the previous refueling cycle, including a review of safety significant structures, systems, and components, (SSC);
- Verify that (a)(1) goals were met, corrective action was appropriate to correct the defective condition including the use of industry operating experience, and (a)(1) activities and related goals were adjusted as needed; and
- Verify that the licensee has established (a)(2) performance criteria, examined any SSCs that failed to meet their performance criteria, or reviewed any SSCs that have suffered repeated maintenance preventable functional failures including a verification that failed SSCs were considered for (a)(1).

The inspectors examined the current periodic evaluation, "Clinton Power Station Periodic Assessment of Maintenance Effectiveness - Report Period: March 1, 1998 to March 1, 2000," dated June 30, 2000. To evaluate the effectiveness of (a)(1) and (a)(2) activities the inspectors examined a number of Condition Reports (CRs) and associated Failure Records (contained in the list of documents at the end of this report). In addition, the CRs were reviewed to verify that the threshold for identification of problems was at an appropriate level and the associated corrective actions were appropriate. The majority of these CRs were related to the following systems:

- a. Rod Control and Information System (RC&IS)
- b. Reactor Core Isolation Cooling (RCIC)
- c. Reactor Recirculation (RR)
- d. Shutdown Service Water (SX)

In addition, recent self-assessment of the maintenance rule conducted by licensee staff was reviewed by the inspectors.

##### b. Findings

No findings of significance were identified.

#### **4. OTHER ACTIVITIES**

##### 4OA6 Management Meetings

###### Exit Meeting Summary

The inspector presented the inspection results to Mr. M. Heffley and other members of licensee management and staff on March 8, 2001. The licensee acknowledged the information presented and did not identify any as proprietary.



PARTIAL LIST OF PERSONS CONTACTED

Licensee

- M. Heffley, Site Vice President
- M. Pacilio, Manager, CPS
- K. Baker, Director - Design Engineering
- S. Buck, NSED Engineer
- R. Frantz, Licensing
- S. Hunseder, Exelon ROG
- W. Iliff Manager - Regulatory Assurance
- W. Lipscomb, Assistant to the Vice President
- R. Matthews, Maintenance
- R. Neeb, Supervisor, Reliability Engineering
- R. Randich, Manager - Work Management
- D. Szymkiewicz, Maintenance Rule Coordinator
- E. Wrigley, Manager - Nuclear Oversight

NRC

- C. Brown, Resident Inspector

ITEMS OPENED, CLOSED, AND DISCUSSED

None

LIST OF ACRONYMS USED

CR	Condition Report
CFR	Code of Federal Regulations
CPS	Clinton Power Station
DRS	Division of Reactor Safety
NRC	Nuclear Regulatory Commission
OA	Other Activities
RC&IS	Rod Control and Information System
RCIC	Reactor Core Isolation Cooling
ROG	Regional Operating Group
RR	Reactor Recirculation
SDP	Significance Determination Process
SSC	Structures, Systems, and Components
SX	Shutdown Service Water

INSPECTION PROCEDURES USED

71111.12B - Maintenance Rule Implementation

## 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 of a document on this list does not imply that NRC inspectors reviewed the entire documents, but, rather that selected sections or portions of the documents were evaluated as part of the overall inspection effort. In addition, inclusion of a document on this list does not imply NRC acceptance of the document, unless specifically stated in the body of the inspection report.

### Procedures

CPS No. 1029.05, "Implementation of the Maintenance Rule at CPS," Revision 6a,  
December 15, 2000

### Miscellaneous

Clinton Power Station Periodic Assessment of Maintenance Effectiveness - Report Period:  
March 1, 1998 to March 1, 2000, June 30, 2000

System/Structure Scoping and Performance Criteria, March 2, 2001

- Rod Control and Information System
- Reactor Core Isolation Cooling
- Reactor Recirculation
- Shutdown Service Water
- Key Safety Functions for Mode 4 and 5

Y-107193, Reclassification of Pseudosystem 96-00 to Maintenance Rule Status a(2),  
November 4, 1998

### Self-Assessments

Focus Area Self-Assessment, Maintenance Rule Implementation, June 19-23, 2000

Focus Area Self-Assessment, CPS Maintenance Rule, January 22 - February 6, 2001

### Condition Reports (Failure Record)

1-95-07-021-0	RR/RN Maintenance Rule Classification (a)(1)
1-96-09-075-0	Isolation of the B RR Loop
1-96-08-095-1	RI System Exceeded Availability Goals due to Valve Seat Leakage
1-96-08-095-0	RI System Exceeded Maintenance Rule Performance Criteria for Unavailability Hours
1-98-01-125-0	Maintenance Rule Unavailability Criteria for AC Power Key Safety Function Exceeded
1-98-03-028-0	Relief Valve Failed Test 8120.30
1-98-03-032-0	Process Sampling System Maintenance Rule Category (a)(1)
1-98-03-105-0	Evaluation of Past MPFF Related to 1SX096B for Improvement of Maintenance Rule Program
1-98-03-188-0	Maintenance Rule Functional Failure on Div 3 VD and SX System
1-98-03-260-0	Previously Unidentified Functional Failure of 1SX096B (a)(1)
1-98-03-292-0	Maintenance Rule Functional Failure of RC&IS Position Probe Multiplexer Card

1-98-03-336-0 Previous Repetitive Maintenance Rule Functional Failures of 1AP41E4B & 1B33D003A.

1-98-03-458-0 Maintenance Rule MPFF of RC&IS Transponder Cards.

1-98-03-459-0 RC&IS Should be Classified as a(1) Under Maintenance Rule

1-98-04-057-0 Evaluation of Functional Failure for Maintenance Rule, Un-Sat As-Found Data Under Surveillance

1-98-04-058-0 Evaluation of Functional Failure for Maintenance Rule, Un-Sat As-Found Data Under PM

1-98-04-059-0 Evaluation of Functional Failure for Maintenance Rule, Un-Sat As-Found Data Under PM

1-98-04-060-0 Evaluation of Functional Failure for Maintenance Rule, Un-Sat As-Found Data Under Surveillance

1-98-04-061-0 Evaluation of Functional Failure for Maintenance Rule, Un-Sat As-Found Data Under PMs

1-98-04-191-0 Valve 1SX029C Failed to Stroke Open in Required Time per 9053.07

1-98-04-279-0 Loss of Control Power for Valve 1E51F004 due to Failed Lamp Socket

1-98-04-280-0 Loss of Auto Open/Close Function of 1E51F095 due to NSPS Circuit Card Failure

1-98-05-186-0 MPFF Against the RC System, MWR D81988 INOP of RC&IS

1-98-05-244-0 Valve 1SX201B As-found Set Pressure was Unsatisfactory

1-98-07-319-0 Failure of 1SX185B to Meet ISI Program Requirements on July 20, 1998

1-98-08-176-0 Relief Valve Failed As-Found Set Pressure Test

1-98-10-095-0 Maintenance Rule Critical Component Failure of Rosemont Transmitter 1B33N014B Calibration

1-98-10-194-0 Failure of 1SX029C to Open

1-98-10-234-0 1SX082B Failed to Stroke Shut During 9053.04

1-98-10-293-0 1SX013E Failed Stroke Within Limits During Performance of CPS 9069.01 - Div II Pump Performance

1-98-11-132-0 1SX014B Plant Service Water to Shutdown Service 1B Header Isolation Valve

1-98-11-214-0 Defective Motor Starter

1-98-12-136-0 Relief Valve Failed Test

1-98-12-222-0 1SX173B Did Not Auto Open

1-98-12-272-0 1SX033 Fails Stroke Time

1-99-01-020-0 Maintenance Rule Repetitive Maintenance Preventable Functional Failure of Control Rod 52-25 Position Indication

1-99-01-031-0 Potential Adverse Trend due to Excessive RC&IS Maintenance Rule Failures

1-99-01-062-0 1SX01PA (Div 1 SX Pump) has High Vibrations During Surveillance Testing

1-99-01-083-0 SX Pump A Vibration Levels Above Required Action Range during 9069.01D001

1-99-01-145-0 Manual SCRAM Initiated due to Possible Transponder Card Failure

1-99-01-216-0 SX/WS Side of Pass Cooler Plugged With Silt

1-99-01-318-0 Components SX Flow Rate Below Design Conditions

1-99-02-065-0 Failure of New Part

1-99-02-143-0 Potential Excessive Unavailability Incurred on Reactivity Control Key Safety Function

1-99-02-453-0 Lost Main Control Room Control of SX Pump A by Use of Control Switch

1-99-03-055-0 VY System Maintenance Rule (VY-10) Functional Failure for 1SX209

1-99-03-163-0 SX Pump Room Cooler 1A Flow Control Valve Solenoid Valve Fuse Blown  
 1-99-04-218-0 SX Pump Failed to Start on WS Pump Shift  
 1-99-04-347-0 1SX185A (0VG07SA Flow Control Valve) Fails ISI Stroke Time Test  
 1-99-05-124-0 RCIC Pump Failed Requirements of CPS 9054.01  
 1-99-05-136-0 Div II RACS Power Supply Failure  
 1-99-06-051-0 Red Unavailability Incurred on the Shutdown Cooling Key Safety Function in Mode 4  
 1-99-07-084-0 RC&IS INOP, Blown Fuse While Closing Div 1 RACS Panel Door  
 1-99-08-021-0 RCIC Tripped on Overspeed during Performance of 9054.01  
 1-99-09-163-0 1E51F095 Lower Wedge Found Cracked  
 1-99-10-089-0 RR FCV B Failed to Close when Given a Close Signal from the Manual FCV Controller.  
 1-99-11-129-0 Repeated Drifting of Calibrated Values Twice in Three Year Period for Transmitter 1E51N053  
 2-00-01-027-0 Maintenance Rule Functional Failure of Rod Control and Information Transponder Card  
 2-00-02-069-0 1SX097A Showed Intermediate Indication in the MCR when Valve Stroked Shut.  
 2-00-08-062-0 Inadvertent Rod Motion (Insert) during RC&IS Troubleshooting.  
 2-00-02-069-0 Valve Stroke Time per CPS 9061.03C006 Failed for Valve 1SX097A  
 2-00-01-175-0 Failure to Enter Required Unavailability in the Maintenance Rule Unavailability Database