AmerGen
An Exelon Company

Clinton Power Station
R. R. 3, Box 228
Clinton, IL 61727

10 CFR 50.73

U-603653
February 2, 2004

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555-0001

Clinton Power Station, Unit 1
Facility Operating License No. NPF-62
NRC Docket No. 50-461

Subject: Licensee Event Report 2003-003-00

Enclosed is Licensee Event Report (LER) No. 2003-003-00: Reactor Scram Due to Loss of Power to 480 Volt Unit Substation 1I. This report is being submitted in accordance with the requirements of 10CFR50.73.

Should you have any questions concerning this report, please contact Mr. William Iliff, Regulatory Assurance Manager, at (217)-937-2800.

Respectfully,

R. S. Bement
Site Vice President
Clinton Power Station

JLP/blf

Enclosure: Licensee Event Report 2003-003-00

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Clinton Power Station
Office of Nuclear Facility Safety – IEMA Division of Nuclear Safety

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NRC FORM 366 (7-2001) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES 7-31-2004

Estimated burden per response to comply with this mandatory information collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Clinton Power Station, Unit 1	050 00461	1 OF 3

4. TITLE

Reactor Scram Due to Loss of Power to 480 Volt Unit Substation 1I

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
									None	05000
12	02	2003	2003	– 003	– 00	02	02	04	FACILITY NAME: None	DOCKET NUMBER: 05000

9. OPERATING MODE	1
10. POWER LEVEL	88

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)

20.2201(b)	20.2203(a)(3)(ii)	50.73(a)(2)(ii)(B)	50.73(a)(2)(ix)(A)
20.2201(d)	20.2203(a)(4)	50.73(a)(2)(iii)	50.73(a)(2)(x)
20.2203(a)(1)	50.36(c)(1)(i)(A)	x 50.73(a)(2)(iv)(A)	73.71(a)(4)
20.2203(a)(2)(i)	50.36(c)(1)(ii)(A)	50.73(a)(2)(v)(A)	73.71(a)(5)
20.2203(a)(2)(ii)	50.36(c)(2)	50.73(a)(2)(v)(B)	OTHER Specify In Abstract below or In NRC Form 366A
20.2203(a)(2)(iii)	50.46(a)(3)(ii)	50.73(a)(2)(v)(C)	
20.2203(a)(2)(iv)	50.73(a)(2)(i)(A)	50.73(a)(2)(v)(D)	
20.2203(a)(2)(v)	50.73(a)(2)(i)(B)	50.73(a)(2)(vii)	
20.2203(a)(2)(vi)	50.73(a)(2)(i)(C)	50.73(a)(2)(viii)(A)	
20.2203(a)(3)(i)	50.73(a)(2)(ii)(A)	50.73(a)(2)(viii)(B)	

12. LICENSEE CONTACT FOR THIS LER

NAME	TELEPHONE NUMBER (Include Area Code)
David H. Schavey, Operations Director	(217) 937-2200

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

14. SUPPLEMENTAL REPORT EXPECTED				15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
X	YES (If yes, complete EXPECTED SUBMISSION DATE)		NO		05	31	2004

16. ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On December 2, 2003, at approximately 1700 hours, the reactor was manually scrammed from 88 percent power in response to low feedwater pump suction pressure and reactor pressure vessel (RPV) water level trending downward toward the RPV Low Water Level - Level 3 automatic scram setpoint. Initiating the event was a loss of power to the 480 Volt Unit Substation 1I (1AP19E) causing the 'B' turbine driven reactor feed pump (TDRFP) minimum flow valve to fail open. This resulted in a low pump suction pressure and a trip of both TDRFPs. Immediately following the manual scram, the motor-driven reactor feed pump (MDRFP) automatically started to control water level and pressure.

A second event occurred on December 2, 2003 at approximately 1937 hours when a RPV Low Water Level - Level 3 Reactor Protection System (RPS) actuation occurred during the transfer of reactor coolant makeup from the MDRFP to a condensate / condensate booster pump pair. The RPS actuation was caused by the RPV water level dropping at a faster rate than anticipated by the operating crew. The MDRFP was restarted and water level was quickly recovered.

The root cause determination is not complete for these events and will be reported in a supplement to this report.

LICENSEE EVENT REPORT (LER)

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NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* **(17)**

A. PLANT OPERATING CONDITIONS PRIOR TO THE EVENT:

Unit: 1 Event Date: 12/02/2003 Event Time: 1700 Central Standard Time (CST)
Mode: 1 (Power Operation) Reactor Power: 088 percent
Reactor Coolant System Temperature: 537 degrees F
Reactor Coolant System Pressure: 1012 psia

B. DESCRIPTION OF THE EVENT:

On December 2, 2003, at approximately 1700 hours, with the plant in Mode 1, "Power Operations," the reactor was manually scrammed from 88 percent power in response to low feedwater pump suction pressure and reactor pressure vessel (RPV) water level trending downward toward the RPV Low Water Level - Level 3 automatic scram setpoint. Initiating the event was a loss of power to the 480 Volt Unit Substation 1I (1AP19E) causing the 'B' turbine driven reactor feed pump (TDRFP) minimum flow valve to fail open. This resulted in a low pump suction pressure and a trip of both TDRFPs. Immediately following the manual scram, the motor-driven reactor feed pump (MDRFP) automatically started to control water level and pressure.

Operators entered Clinton Power Station (CPS) Emergency Operating Procedure EOP-1, "RPV Control," CPS procedures 4100.01, " Reactor Scram," 4002.01, "Abnormal RPV Level / Loss of Feedwater at Power," and 4200.01, "Loss of AC Power," at 1700 hours.

Following the manual reactor scram, RPV water level reached approximately -26 inches. The trip setpoint for the RPV Low Water Level - Level 3 actuation is ≥ 8.9 inches. The RPV Low Water Level caused a valid reactor protection system (RPS) actuation and a containment isolation signal for Groups 2, 3 and 20. The containment isolation valves in these three groups are normally closed during power operations. A Level 3 actuation is expected following a high power reactor scram.

Subsequent to the initial event, a second event occurred at approximately 1937 hours with the plant in Mode 3, "Hot Shutdown," when an RPV Low Water Level - Level 3 RPS actuation occurred during the transfer of reactor coolant makeup from the MDRFP to a condensate / condensate booster pump pair. The RPS actuation involved an automatic reactor scram and a containment isolation signal caused by the RPV water level dropping at a faster rate than anticipated by the operating crew. The RPV water level reached approximately -5 inches during this event. The MDRFP was restarted and water level quickly recovered.

The manual scram and the subsequent containment isolation signal due to the RPV Low Water Level - Level 3 initiation signal involved a valid actuation of the RPS when the reactor was critical. The four-hour ENS notification required by 10CFR50.72(b)(2)(iv)(B) was completed at 1837 hours (CST) (Event #40368). The automatic reactor scram and the second containment isolation signal due to the RPV Low Water Level - Level 3 initiation signal was a valid actuation of the RPS when the reactor was not critical (Update to Event #40368). The eight-hour notification required by 10 CFR 50.72 (b)(3)(iv)(A) for this event was completed at 2145 hours. Both of these events involved a valid actuation of the reactor protection system. Therefore, this LER is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(iv)(A).

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NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* **(17)**

C. CAUSE OF THE EVENT

The loss of feedwater was attributed to a loss of power to the 480 Volt Unit Substation 1I (1AP19E) causing the 'B' TDRFP minimum flow valve to fail open on a loss of power. The cause of the loss of power to the Unit Substation 1I is still under investigation (reference Condition Report #188839). As such, the root cause of the event has yet to be determined.

The second scram involved the failure of the Operations crew to maintain reactor water level and pressure within a specified level control band while securing the MDRFP and placing into service a condensate / condensate booster pump pair. The root cause of this event is not complete.

A supplement to this report will be made by May 31, 2004 to provide the results of the root cause determination.

D. SAFETY ANALYSIS

There were no actual safety consequences associated with his event. The event was reviewed for analyzed transients discussed in Chapter 15 of the CPS Updated Safety Analysis Report. The analysis determined that this event was within the design basis of the plant.

E. CORRECTIVE ACTIONS:

A detailed troubleshooting plan was prepared and executed for the loss of the 480 Volt Unit Substation 1I (1AP19E) during the forced outage. Although there was no evidence to substantiate a failure, the component most susceptible to failure, i.e., a ground fault protection relay, was replaced on December 3, 2003. A failure analysis will be performed on the removed relay.

A prompt investigation was conducted with the Operations crew following the event. A separate Condition Report (#188848) was written to capture lessons learned. Training has been conducted for all operating crews on the required actions to plan for and take following a scram to avoid a RPV Low Water Level - Level 3 scram.

Additional corrective actions resulting from the root cause determination will be identified in the supplement to this report.

F. PREVIOUS OCCURRENCES:

Previous loss of feedwater events are identified below.

Licensee Event Report 1992-002-01, "Lockup of Reactor Feed Pump Control Valve During Transfer of Feedwater Control Channels Results in Feedwater Level Transient and Low Reactor Water Level SCRAM."

Licensee Event Report 2000-001-00, "Operation of Mislabeled Switch While Performing Preventive Maintenance on a Circuit Breaker Results in Loss of 4160 Volt 1B Bus, Reactor Water Level Transient and Manual Scram."

Corrective actions from these LER's would not have been expected to prevent the occurrence of this event.

G. COMPONENT FAILURE DATA:

None.