

LICENSEE EVENT REPORT (LER)

APPROVED OMB NO. 3150-0104

EXPIRES: 6/31/88

FACILITY NAME (1) Clinton Power Station										DOCKET NUMBER (2) 0 5 0 0 0 4 6 1 1										PAGE (3) 1 OF 0 4									
TITLE (4) Construction/Installation Error Results in Mounting Hardware for Heat Exchanger Not Installed as Designed and Failure of Diesel Generator to Meet Seismic Qualification																													
EVENT DATE (5)						LER NUMBER (6)						REPORT DATE (7)						OTHER FACILITIES INVOLVED (8)											
MONTH		DAY		YEAR		YEAR		SEQUENTIAL NUMBER		REVISION NUMBER		MONTH		DAY		YEAR		FACILITY NAMES None						DOCKET NUMBER(S) 0 5 0 0 0					
0 3		0 1		8 9		8 9		0 1		7		0 0		0 4		2 7		8 9		0 5 0 0 0									
OPERATING MODE (9) 5		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)																											
POWER LEVEL (10) 0 0 0		20.402(b)						20.405(c)						50.73(a)(2)(iv)						73.71(b)									
		20.405(a)(1)(i)						50.36(c)(1)						X 50.73(a)(2)(v)						73.71(c)									
		20.405(a)(1)(ii)						50.36(c)(2)						50.73(a)(2)(vii)						OTHER (Specify in Abstract below and in Text, NRC Form 366A)									
		20.405(a)(1)(iii)						X 50.73(a)(2)(i)						50.73(a)(2)(viii)(A)															
		20.405(a)(1)(iv)						X 50.73(a)(2)(ii)						50.73(a)(2)(viii)(B)															
		20.405(a)(1)(v)						50.73(a)(2)(iii)						50.73(a)(2)(ix)															
LICENSEE CONTACT FOR THIS LER (12)																													
NAME S. E. Rasor, Director - Plant Maintenance Extension 3204																TELEPHONE NUMBER AREA CODE 2 1 7 9 3 5 - 8 8 8 1													
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																													
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC																			
SUPPLEMENTAL REPORT EXPECTED (14)																EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR									
YES (If yes, complete EXPECTED SUBMISSION DATE)																X NO													

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

ABSTRACT

On March 28, 1989, Illinois Power Company determined that the Division III Diesel Generator (DG) did not meet seismic qualification requirements. For this reason, the Division III DG and the High Pressure Core Spray (HPCS) system were considered to have been technically inoperable since initial plant operation. The determination that the Division III DG did not meet seismic qualification requirements was based on the discovery, on March 1, 1989, that the mounting hardware for the Shutdown Service Water System/Division III DG heat exchanger was not installed as designed at three of the four mounting points. On March 1, 1989, the Shift Supervisor was notified of the mounting hardware that was not installed as designed, and he immediately declared the Division III DG and the HPCS system, which receives backup power from the Division III DG, inoperable. The mounting hardware installation was corrected on March 2 and the Division III DG and the HPCS system were declared operable. The cause of this event is attributed to construction/installation error. Corrective actions included reworking the mounting hardware for the Division III DG heat exchanger and verifying the adequacy of the mounting hardware for the Division I and II diesel generator heat exchangers.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
Clinton Power Station	05000461	89	017	00	02	OF 04

TEXT IF more space is required, use additional NRC Form 366A's (17)

DESCRIPTION OF EVENT

On March 28, 1989, Illinois Power Company (IP) determined that the Division III Diesel Generator [DG] [EK] did not meet seismic qualification requirements. For this reason, the Division III DG and the High Pressure Core Spray (HPCS) system [BG] which receives backup power from the Division III DG were considered to have been technically inoperable since initial plant operation. The determination that the Division III DG did not meet seismic qualification requirements was based on the discovery, on March 1, 1989, that the mounting hardware for the Shutdown Service Water System [BI] (SX)/Division III DG heat exchanger [HX], 1DG13A, was not installed as designed.

On March 1, 1989, the plant was in Mode 5 (REFUELING), at approximately eighty-six degrees Fahrenheit and atmospheric pressure. At approximately 1115 hours, during a routine walkdown of the Division III DG room, the DG system engineer discovered that the mounting hardware for the Division III DG/SX heat exchanger was not installed as designed at three of the four mounting points on the diesel generator skid. At the three mounting points that were not installed as designed, one mounting point contained a bolt with a loose nut, one mounting point contained a bolt but no nut, and one mounting point did not contain any bolting materials. The area near the heat exchanger was inspected for the missing bolting materials but none was found.

The Shift Supervisor (SS) was immediately notified of the mounting hardware that was not installed as designed and he immediately declared the Division III DG and the HPCS system inoperable.

An investigation was immediately performed to verify the adequacy of the mounting hardware for the Division I and II DG/SX heat exchangers. This investigation identified that the mounting hardware for the Division I and II DG/SX heat exchangers was installed as designed.

The mounting hardware for the Division III DG/SX heat exchanger was reworked with satisfactory results in accordance with maintenance work request (MWR) D05148. At 1145 hours, on March 2, 1989, the Division III DG and the HPCS system were declared operable.

On March 28, 1989, Illinois Power Company (IP) completed an engineering investigation of the mounting hardware problem of the Division III DG heat exchanger. This investigation determined that, because the mounting hardware had not been installed as designed at three of the four mounting points, the Division III DG/SX heat exchanger did not meet seismic qualification requirements.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/86

FACILITY NAME (1) Clinton Power Station	DOCKET NUMBER (2) 0500046189	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
			017	00	03	OF 04

TEXT (If more space is required, use additional NRC Form 366A's) (17)

No automatic or manually initiated safety system responses were necessary to place the plant in a safe and stable condition. No other equipment or components were inoperable at the start of this event such that their inoperable condition contributed to this event.

CAUSE OF EVENT

The cause of this event is attributed to construction/installation error.

A review of the material receipt inspection report for the Division III DG skid dated April 23, 1980, identified that during the receipt inspection, the heat exchanger was specifically required to be inspected and that this inspection was performed with satisfactory results.

A review of the material history for the Division III DG was performed to determine if maintenance activities performed since the turnover of the DG from the construction contractor to the IP Startup Department could have involved removal of the heat exchanger mounting hardware. This review determined that no maintenance activities had been performed which would have resulted in removal of the mounting hardware.

Based on the reviews of the material receipt inspection report and the material history, it is concluded that the mounting hardware for the Division III DG heat exchanger was probably removed and not properly re-installed during construction/installation.

CORRECTIVE ACTION

The mounting hardware for the Division III DG heat exchanger was reworked in accordance with MWR D05148.

The mounting hardware for the the heat exchangers for Divisions I and II DGs was investigated and found to be installed as designed.

ANALYSIS OF EVENT

Assessment of the safety consequences and implications of this event indicates that this event is considered to be of potential safety significance. The Division III DG supplies power to the HPCS system in the event of a loss of offsite power. The HPCS system constitutes one division of the Emergency Core Cooling Systems (ECCS). The purpose of the HPCS system is to maintain reactor vessel level after small piping breaks and to provide cooling to the core in the event of large piping breaks. In the event of a concurrent loss of offsite power, a safe shutdown earthquake, and a loss of coolant, the HPCS system may not have fulfilled its design function. However, Clinton Power Station has never been in a condition which required the HPCS system to perform its design function.

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TEXT (If more space is required, use additional NRC Form 305A's) (17)

This event is reportable under the provisions of 10CFR50.73(a)(2)(i)(B) due to operation of the plant prohibited by Technical Specifications. Technical Specification 3.8.1.1 requires that three separate and independent diesel generators be available. The Division III DG was considered to have been technically inoperable since initial plant operation; therefore, Technical Specification 3.8.1.1 was violated. Technical Specification 3.5.1 requires all three divisions of the ECCS to be operable. Since the Division III DG was technically inoperable, the HPCS system was technically inoperable. Since the HPCS system constitutes one division of the ECCS, Technical Specification 3.5.1 was also violated.

This event is also reportable under the provisions of 10CFR50.73(a)(2)(ii) because the plant was in a condition outside the design basis. The Division III DG was designed to remain functional in the event of a safe shutdown earthquake. Because the mounting hardware for the Division III DG heat exchanger was not installed as designed, the Division III DG could have been prevented from performing its design function.

This event is also reportable under the provisions of 10CFR50.73(a)(2)(v) because of a condition that alone could have prevented the fulfillment of the safety function of a system, HPCS, that is needed to mitigate the consequences of an accident. The fulfillment of the safety function of the HPCS system could have been prevented because the mounting hardware on the Division III DG heat exchanger was not installed as designed.

The Division III Diesel Generator and the High Pressure Core Spray System are considered to have been technically inoperable from initial plant operation until 1145 hours on March 2, 1989.

ADDITIONAL INFORMATION

There have been no similar events involving the Division III DG and the HPCS system that occurred as a result of a similar cause.

For further information regarding this event, contact S. E. Rasor, Director - Plant Maintenance at (217) 935-8881, extension 3204.

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ILLINOIS POWER COMPANY



CLINTON POWER STATION, P.O. BOX 678, CLINTON, ILLINOIS 61727

April 27, 1989
10CFR50.73

Docket No. 50-461

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Subject: Clinton Power Station - Unit 1
Licensee Event Report No. 89-017-00

Dear Sir:

Please find enclosed Licensee Event Report No. 89-017-00:
Construction/Installation Error Results in Mounting Hardware for Heat
Exchanger Not Installed as Designed and Failure of Diesel Generator to
Meet Seismic Qualification. This report is being submitted in
accordance with the requirements of 10CFR50.73.

Sincerely yours,

D. L. Holtzscher
Acting Manager -
Licensing and Safety

RSF/krm

Enclosure

cc: NRC Resident Office
NRC Region III, Regional Administrator
INPO Records Center
Illinois Department of Nuclear Safety
NRC Clinton Licensing Project Manager

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