

DCB

U-601639  
L45-90(04-05)-LP  
2C.220

ILLINOIS POWER COMPANY



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

April 5, 1990

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. 90-002-00

Dear Sir:

Please find enclosed Licensee Event Report No. 90-002-00:  
Use of Inappropriate Acceptance Criteria in Pre-Operational Test Results in Less Than Design Flow Through Components Using Shutdown Service Water System for Cooling Water. This report is being submitted in accordance with the requirements of 10CFR50.73.

Sincerely yours,

F. A. Spangenberg, III  
Manager - Licensing and Safety

RSF/csm

Enclosure

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

APR 9 1990

9004130260 900405  
PDR ADUCK 05000461  
S FDC

FE22  
111

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Clinton Power Station										DOCKET NUMBER (2) 0 5 0 0 0 4 6 1										PAGE (3) 1 OF 1 4			
TITLE (4) Use of Inappropriate Acceptance Criteria in Pre-Operational Test Results in Less Than Design Flow Through Components Using Shutdown Service Water System for Cooling Water																							
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	1	2	4	9	0	9	0	0	0	2	0	0	0	4	0	5	9	0	0	5	0	0	0
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 50. (Check one or more of the following) (11)																					
1		20.402(b)			20.406(c)			50.73(a)(2)(iv)			73.71(b)												
POWER LEVEL (10)		1 0 0			20.406(a)(1)(i)			50.73(a)(2)(v)			73.71(c)												
		20.406(a)(1)(ii)			50.73(a)(2)(vi)			50.73(a)(2)(viii)(A)			OTHER (Specify in Abstract below and in Text, NRC Form 366A)												
		20.406(a)(1)(iii)			50.73(a)(2)(vii)			50.73(a)(2)(viii)(B)															
		20.406(a)(1)(iv)			50.73(a)(2)(ix)			50.73(a)(2)(x)															
		20.406(a)(1)(v)			50.73(a)(2)(x)																		
LICENSEE CONTACT FOR THIS LER (12)												TELEPHONE NUMBER											
NAME R. T. Kerestes, Director - Engineering Projects, extension-3982												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													
X	B I C	C L	A 2 2 0	N		X	B M	C C L	A 2 2 0	N													
X	B O C	C L	A 2 2 0	N		X	B N	C C L	A 2 2 0	N													
SUPPLEMENTAL REPORT EXPECTED (14)												EXPECTED SUBMISSION DATE (15)						MONTH	DAY	YEAR			
X YES (If yes, complete EXPECTED SUBMISSION DATE)												NO						0	7	0	2	9	0

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

On March 6, 1990, the Shift Supervisor (SS) determined as-found flow rates through Shutdown Service Water (SX) pump room cooling coils 1VH07SA and 1VH07SB less than design were reportable conditions. Test engineers identified the flow rate problem of 1VH07SA on January 24, 1990, during heat exchanger performance testing. After the SS was notified of this problem, he directed that design flow be restored through the cooling coils. Investigation has identified flow problems in twenty-nine components using Divisions I, II & III SX for cooling water and inappropriate acceptance criteria used in the pre-operational test of the SX system was a cause of the problems. The root cause of this event is under investigation. Planned corrective actions include achieving acceptable flow rates for components that use the SX system for cooling water and reviewing selected safety-related pre-operational tests (selection based on 1) similar type safety-related systems that have flow rate requirements, 2) Tests that may have been authored by the same individual(s), 3) Tests that may have been written in the same time period as the SX test) to ensure that tested calculations were accurate. Following determination of the root cause of this event, additional corrective actions may be required. A supplemental report will be issued and will identify the root cause and any additional actions.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/86

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Clinton Power Station	0500046190	0	02	00	02	OF	14

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

## DESCRIPTION OF EVENT

On March 6, 1990, the Shift Supervisor determined that as-found flow rates through Division I Shutdown Service Water (SX) system [BI] pump [P] room cooling coil [CCL] 1VH07SA and Division II SX system pump room cooling coil 1VH07SB less than the design values were reportable conditions.

In response to Generic Letter 89-13 "Service Water System Problems Affecting Safety-Related Equipment," Illinois Power Company's (IP's) plan was to open, inspect, and obtain baseline data on safety-related heat exchangers [HX] and develop a program to monitor the performance of the heat exchangers for the life of the plant. In November 1989, IP experienced tube leaks on the Division I and II diesel generator [EK] [DG] heat exchangers. Investigation of this problem resulted in the conclusion that the tubes were experiencing Microbiologically Induced Corrosion (MIC) attack. IP accelerated the open and inspect program for safety related heat exchangers and developed a plan to open Division I heat exchangers prior to and during PO-3 (a planned maintenance outage which began February 21, 1990, and is currently scheduled to be completed during the second week in April 1990, when the Clinton Power Station is synchronized to the grid).

On January 24, 1990, with the plant in Mode 1 (POWER OPERATION) at 100 percent reactor [RCT] power, test engineers were performing heat exchanger performance testing in accordance with test procedure 2602.01, "Heat Exchanger Performance," to establish the as-found system flow conditions. This as-found data was needed to establish a baseline for determining the effectiveness of heat exchanger cleaning and inspection activities scheduled for PO-3.

At approximately 1500 hours, using Polysonics and Panametrics flowmeters, test engineers identified an as-found flow of thirty-two gallons per minute (gpm) through the Division I Shutdown Service Water system pump room cooling coil 1VH07SA. This as-found flow was lower than the value of eighty-two gpm required by design documents. These test results were not immediately reported to the Shift Supervisor because test engineers did not believe the test equipment was providing a correct indication of flow. The test engineers did verify that Division I SX pump room cooling coil inlet valve [V] 1SX009A was locked in position. Since cooling coil 1VH07SA was already scheduled for cleaning and inspection during PO-3, the test engineers took no further action.

The test engineers reported the flow-test results to engineering for trending purposes to indicate the condition of the cooling coil prior to the inspection and cleaning of Division I heat exchangers.

## 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	0500046190	0	02	00	03	OF 14

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

On February 13, 1990, at approximately 2134 hours, the plant entered Mode 4 (COLD SHUTDOWN) because of a failure to meet Primary Containment Integrity (Reference LER 90-001-00).

On February 15, 1990, at approximately 1100 hours, the flow test data for 1VH07SA was reviewed by the Supervisor-Plant Testing and he determined that the Shift Supervisor should be notified of the as-found flow rate. The Shift Supervisor was immediately notified of this condition and he directed test engineers to calibrate the test equipment and to measure the flow rate again. The instrument was verified to be in calibration, then test engineers measured the flow rate at three different locations and found it to be fifty-five gpm. At 1343 hours, the Shift Supervisor directed the area operator to restore design flow through 1VH07SA by adjusting the flow through valve 1SX009A to approximately eighty-five gpm and relocking the valve. The Shift Supervisor further directed that engineering evaluate the operability of cooling coil 1VH07SA. Condition Report (CR) 1-90-02-046 was initiated to track the problem of low flow rate.

On February 24, 1990, at approximately 1200 hours, test engineers notified the Shift Supervisor (SS) that performance testing of Division I Emergency Core Cooling System (ECCS) Reactor Core Isolation Cooling (RCIC) system [BN] pump room cooling coil 1VY04S following cleaning of the piping leading to the cooling coil, identified an as-found flow through the cooling coil of twelve gpm. Design documents require a flow of eighteen gpm through this cooler. The SS directed that engineering determine the heat removal capability of the cooling coil at the as-found flow rate and directed that this condition be resolved prior to increasing reactor pressure above 150 pounds per square inch gauge (psig). The SS further directed that engineering coordinate proper corrective actions with Plant Technical if failures of other heat exchanger performance tests are identified.

On March 2, 1990, engineering held a meeting and discussed flow balancing of the SX system. At this meeting, Sargent & Lundy (S&L), the Clinton Power Station (CPS) architect/engineer, was assigned responsibility for developing appropriate acceptance criteria and technique for flow balancing the SX system.

On March 5, 1990, while developing the criteria and technique for flow balancing, Sargent & Lundy identified that the acceptance criteria used in the pre-operational test, PTP-SX-01, of the SX system prior to initial plant operation was not consistent with specifications. The acceptance criteria used in PTP-SX-01 for cooling coil 1VH07SA was a differential pressure of 18.1 inches water gauge while the design/procurement specification indicated a differential pressure of 58.8 inches water gauge. The use of the 18.1 inches water gauge value caused the flow rate to be set incorrectly for cooling coil 1VH07SA.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 5/31/88

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Clinton Power Station	0 5 0 0 0 4 6 1 9 0	—	0 0 2	— 0 0	0 4	OF	1 4

TEXT (If more space is required, use additional NRC Form 306A's) (17)

On March 6, 1990, while reviewing SX system Condition Reports, a system engineer identified that Division II SX system pump room cooling coil 1VH07SB could have the same problem as 1VH07SA had with the differential pressure values used during pre-operational testing and therefore could also have its flow-rate incorrectly set.

At 1500 hours, on March 6, engineering notified the SS that the acceptance criteria used in PTP-SX-01 for Divisions I and II SX system cooling coils 1VH07SA and 1VH07SB to set flow rates through these heat exchangers was not correct and therefore the required design flow rate was not met. Engineering further identified that the SX system had been outside design basis since initial plant operation as a result of using the incorrect acceptance criteria.

At 1620 hours, on March 6, 1990, at the direction of the SS, the area operator adjusted flow through valve 1SX009B to provide a flow-rate of approximately eighty-five gpm through cooling coil 1VH07SB. The SS also directed that flow through 1VH07SA be determined and corrected as necessary after the Division I SX system has been refilled with water. In addition, the SS determined that the flow rate problem was reportable as an LER under the provisions of 10CFR50.73(A)(2)(ii)(B) because the flow rate problem resulted in the plant being in a condition outside its design basis.

No automatic or manually initiated safety system responses were necessary to place the plant in a safe and stable condition. The CORRECTIVE ACTION section of this LER identifies additional components that contributed to this event because their flow rates did not meet design requirements.

## CAUSE OF EVENT

Investigation has identified that use of inappropriate acceptance criteria used in the pre-operational test of the SX system was a cause of this event.

The root cause of this event is still under investigation. However, one of the root causes for the inappropriate acceptance criteria has been attributed to inaccurate pressure drop data supplied by the American Air Filter Company (AAF) to Sargent and Lundy and/or to Sargent and Lundy via Baldwin Associates, the CPS construction contractor. Specifically, AAF provided data that was not appropriate for the type of cooling coils purchased and delivered to CPS. The data did not include appropriate head losses for clean-out plugs in the cooling coils. Sargent and Lundy provided this incorrect data to IP for incorporation into the CPS pre-operational test of the SX system and provided a principal factor for acceptance criteria of flow balancing the SX system prior to initial plant operation. This contributed to less than design specified cooling water flow being supplied to cooling coils. The affected cooling coils are identified in Tables I, II and III with manufacturer code [d].

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104  
EXPIRES: 6/31/86

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
Clinton Power Station	0500046190	0	02	00	05	OF 14

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

Illinois Power submitted information to the Nuclear Regulatory Commission (NRC) under the provisions of 10CFR21 in letter U-601636, dated April 3, 1990 regarding the inaccurate pressure drop data supplied by AAF.

To determine the complete root cause of this event, IP will investigate the origin of the inappropriate data used in the pre-operational test of the SX system. This investigation is scheduled to be completed by May 31, 1990. Following completion of this investigation, IP will provide a supplemental report identifying the results of the investigation including the root cause and any additional planned corrective actions. The supplemental report is scheduled to be issued by July 2, 1990.

## CORRECTIVE ACTION

The flow conditions of components that use Division I of the SX system for cooling water were measured and the as-found flow rates for thirteen of twenty-one components were less than design values as indicated in Table I of this LER. As-left flow rates were subsequently achieved for the components as indicated in Table I of this LER. The design flow rate for the Residual Heat Removal (RHR) system [BO] HX Room cooling coil 1VY03S was achieved by modifying existing piping to that coil. Design flow rates were achieved for the remaining components by adjusting the throttle valves of the components. As-left flow rates less than original design values will be reviewed by engineering and verified to be acceptable prior to startup from PO-3.

The flow conditions of components that use Division II of the SX system for cooling water were measured and the as-found flow rates for thirteen of twenty-one components were found less than design values as indicated in Table II of this LER. IP is currently working on this division and will restore acceptable flow rates for the components in Division II of the SX system prior to startup from PO-3. IP has determined that piping to RHR system HX Room Cooling Coil 1VY05S will require modification in order to achieve an acceptable flow rate through the coil.

Additionally, during corrective actions to correct flow conditions in Division II on March 29, 1990, at approximately 1845 hours, maintenance technicians discovered that duct tape probably used to maintain cleanliness of piping during initial installation or subsequent maintenance was not removed from the SX system outlet piping flange of Division II Switchgear Heat Removal Condensing Unit 1VX06CB prior to installation of the piping. The SS was notified of this condition at approximately 1900 hours. The SS directed that engineering determine the actions necessary to restore 1VX06CB to operability and that the operability be restored prior to entry of the plant into Modes 1, 2 (STARTUP) or 3 (HOT SHUTDOWN).

## 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	90	002	00	06	OF	14

TEXT (If more space is required, use additional NRC Form 266A's) (17)

The flow conditions of components that use Division III of the SX system for cooling water were measured and the as-found flow rates for three of six components were found less than design values as indicated in Table III of this LER. As-left flow rates were subsequently restored to design values by adjusting the throttle valves of the components. These as-left flow rates were reviewed by engineering and determined to be acceptable.

IP will review selected safety-related pre-operational tests (selection based on 1) similar type safety-related systems that have flow rate requirements, 2) Tests that may have been authored by the same individual(s), 3) Tests that may have been written in the same time period as the SX test) to ensure that tested calculations were accurate. This review is scheduled to be completed by the end of PO-3.

Following determination of the cause of this event, IP will evaluate whether additional corrective actions are required. This information will be included in the supplemental report.

#### ANALYSIS OF EVENT

This event is reportable under the provisions of 10CFR50.73(a)(2)(ii)(B) because the as-found flow conditions resulted in the plant being in a condition outside its design basis.

An assessment of the safety consequences and implications of this event has not yet been completed, however, preliminary review of as-found SX water flows for AAF supplied cooling coils has identified that the following Division I safety-related area coolers potentially fail to provide adequate heat removal capability:

Low Pressure Core Spray Pump Room Cooler	1VY01S
Residual Heat Removal (RHR) Pump Room Cooler	1VY02S
RHR Heat Exchanger Room Cooler	1VY03S
Reactor Core Isolation Cooling Pump Room Cooler	1VY04S
SX Pump Room Cooler	1VH07SA
Standby Gas Treatment System Room Cooler	OVG05SA

IP's preliminary calculations indicate that the reduced as-found water flow through these safety-related area coolers would cause temperatures in some areas of the plant containing safety-related components to exceed design temperatures for those areas. For example, the difference between the AAF supplied pressure drop and the calculated pressure drop across the 1VY03S cooling coil was as high as 202 inches of water (The AAF supplied value was 72 inches of water while the IP calculated value was 274 inches of water). Based on preliminary calculations, the area temperature increase due to the incorrect pressure drop could be as high as fourteen degrees Fahrenheit. This condition could have had an adverse affect on the equipment qualification of components and on the secondary containment draw-down time by the Standby Gas Treatment System.

## 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)  0 5 0 0 0 4 6 1	LER NUMBER (3)			PAGE (5)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		9 0	0 0 2	0 0	0 7	OF 1 4

TEXT (If more space is required, use additional NRC Form 206A's) (17)

IP will provide the completed assessment of the safety consequences and implications in the supplemental report.

As-found flow conditions less than design values, as indicated in Tables I, II and III of this LER, have existed since initial plant operation for twenty-nine components that use the three divisions of the SX system for cooling water. Acceptable flow rates will be restored for the components using the SX system for cooling water prior to startup from PO-3.

#### ADDITIONAL INFORMATION

Tables I, II and III identify the manufacturer and model number of the equipment with as-found flow rates less than design values.

Since the cause of this event is still under investigation, IP is unable at this time to identify previous similar events. This information will be provided in the supplemental report.

For further information regarding this event, contact R. T. Kerestes, Director-Engineering Projects at (217)935-8881, extension 3982.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 2150-0104

EXPIRES: 8/31/88

FACILITY NAME (1)  Clinton Power Station	DOCKET NUMBER (2)  0 5 0 0 0 4 6 1 9 0	LER NUMBER (3)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		0	0 0 2	0	0	0 8	OF

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

TABLE I

Division I SX System

EQUIPMENT NUMBER	EQUIPMENT DESCRIPTION	DESIGN FLOW RATE (gpm)	AS-FOUND FLOW RATE (gpm)	AS-LEFT FLOW RATE (gpm)	EQUIPMENT MODEL NUMBER/ MANUFACTURER [1]
1) 1VH07SA	SX Pump Room Cooling Coil	82	20.5	102	24-61-3CW5-8 [d]
2) 1VY03S	ECCS RHR Hx Room Cooling Coil	60	23	70.9[b]	22-47-4CW5-8 [d]
3) 1VY02S	ECCS RHR Pump Room Cooling Coil	60	52	88.1	22-47-4CW5-8 [d]
4) 1VY01S	Low Pressure Core Spray [BM] Pump Room Cooling Coil	90	57.5	106.8	28-48-4CW5-8 [d]
5) 1VY04S	ECCS RCIC Pump Room Cooling Coil	18	10.1	17.5[a]	18-35-4CW5-8 [d]
6) OVG07SA	Hydrogen Recombiner [BB] [RCB] Room Cooling Coil	90	50.8	92.6	28-48-4CW5-8 [d]
7) 1VX13SA	Inverter [INVT] Room Cooling Coil	20	15.7	23.7	8-18-3CW5-8 [d]
8) 1VY09S	Main Steam Isolation Valve (MSIV) [ISV] Leakage Inboard [BD] Room Cooling Coil	60	43.3	58 [a]	18-32-4CW5-8 [d]
9) 1VR09S	Combustible Gas Control System Room Cooling Co.1	36	7.1	27.4[a]	18-38-4CW5-8A [d]
10) OVG05SA	Standby Gas Treatment System (SGTS) [EH] Room Cooling Coil	90	40.3	98.6	28-48-4CW5-8 [d]

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 2150-0104  
EXPIRES: 8/31/98

FACILITY NAME (1)  Clinton Power Station	DOCKET NUMBER (2)  0 5 0 0 0 4 6 1	LER NUMBER (3)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		9 0	0 0 2	0 0	0 9	OF	1 4

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

EQUIPMENT NUMBER	EQUIPMENT DESCRIPTION	DESIGN FLOW RATE (gpm)	AS-FOUND FLOW RATE (gpm)	EQUIPMENT	
				AS-LEFT FLOW RATE (gpm)	MODEL NUMBER/ MANUFACTURER [1]
11) OPR13A	SGTS Exhaust Hi-Range Radiation Monitor [IL] Cooler [CLR]	20	13.8	19.3 [a]	FNB6133 [f]
12) 1E12B001A	RHR Hx	5800	4532[k]	5605.1[a]	767E786 [e]
13) 1FC01AA	Fuel Pool Cooling and Cleanup [DA] Hx	4143	3376[k]	3681 [a]	76-N-014-1-1AB [g]
14) 1DG11AA	Diesel Generator Hx	450	1139	552.8	[j]
15) 1DG12AA	Diesel Generator Hx	600	1092	742.8	[j]
16) 1E12C002A	RHR Pump Seal [SEAL] Cooler	20	22	22	[j]
17) 1VP04CA	Drywell [VB] Chiller [CHU]	2000	2140	2058.5	[j]
18) 0VC13CA	Control Room Heating, Ventilating and Air Conditioning (HVAC) System [VI] Water Chiller	800	874	849.38	[j]
19) 1VX06CA	Switchgear [SWGR] Heat Removal Condensing Unit	160	230.6	207.5	[j]
20) 1SX01PA	SX Pump Motor [MO] Bearing Cooler	7	21.9	25.1	[j]
21) 1FC02PA	Fuel Pool Cooling and Cleanup Pump	25	26.5	21.2 [a]	[j]

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 2150-0104  
EXPIRES: 8/31/86

FACILITY NAME (1)  Clinton Power Station	DOCKET NUMBER (2)  0500046190	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		90	002	00	10	OF 14

TEXT (If more space is required, use additional NRC Form 205A's) (17)

## TABLE I, II &amp; III NOTES:

- [a] As-left flow rates are less than original design values. These as-left flow rates will be reviewed by engineering and verified to be acceptable prior to startup from PO-3.
- [b] Existing piping was modified (Plant Modification SXP012) to achieve acceptable flow through 1VY03S.
- [c] Existing piping will be modified (Plant Modification SXP013) to achieve acceptable flow through 1VY05S.
- [d] Equipment manufactured by American Air Filter Company.
- [e] Equipment manufactured by General Electric Company.
- [f] Equipment manufactured by Sentry Equipment Corporation.
- [g] Equipment manufactured by Yuba Heat Exchanger.
- [h] Equipment manufactured by Byron Jackson Pumps, Incorporated.
- [i] Equipment manufactured by Carrier Corporation.
- [j] Equipment Model Number/Manufacturer [ ] identification not required because the as-found flow rate met the design value.
- [k] These are values initially determined using Polysonics. Use of Polysonics was later determined to be inaccurate for measuring flow through piping of the size installed to these heat exchangers. Polysonics proved to read low on piping of this size (12 inches in diameter and greater).

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)  Clinton Power Station	CHECKET NUMBER (2)  0 5 0 0 0 4 6 1 9 0	LER NUMBER (3)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		0	0	2	0	0	1 1 OF 1 4

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

TABLE II

DIVISION II SX SYSTEM

<u>EQUIPMENT NUMBER</u>	<u>EQUIPMENT DESCRIPTION</u>	<u>DESIGN FLOW RATE (gpm)</u>	<u>AS-FOUND FLOW RATE (gpm)</u>	<u>EQUIPMENT MODEL NUMBER/ MANUFACTURER [1]</u>
1) 1VH07SB	SX Pump Room Cooling Coil	82	38	24-61-3CW5-8 [d]
2) 0VG05SB	SGTS Room Cooling Coil	90	40.3	28-48-4CW5-8 [d]
3) 0VG07SB	Hydrogen Recombiner Room Cooling Coil	90	20.9	28-48-4CW5-8 [d]
4) 1VY05S	ECCS RHR HX Room Cooling Coil	60	26 [c]	22-47-4CW5-8 [d]
5) 1VX13SB	Division II Inverter Room Cooling Coil	20	15.4	8-18-3CW5-8 [d]
6) 1VY10A	MSIV Leakage Outboard Room Cooling Coil	10	12	[j]
7) 1VX14S	Division IV Inverter Room Cooling Coil	60	28.4	28-24-4CW5-8 [d]
8) 1VY07S	ECCS RHR 1C Pump Room Cooling Coil	60	35.8	22-47-4CW5-8 [d]
9) 1VY06S	ECCS RHR 1B Pump Room Cooling Coil	60	34.7	22-47-4CW5-8 [d]
10) 1VR12S	Combustible Gas Control System Room Cooling Coil	36	9.2	18-38-4CW5-8A [d]
11) 1DG11AB	Diesel Generator HX	450	1326	[j]
12) 1DG12AB	Diesel Generator HX	600	1362	[j]

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OME NO. 2150-D104  
EXPIRES: 8/31/88

FACILITY NAME (1)  Clinton Power Station	DOCKET NUMBER (2)  0 5 0 0 0 4 6 1 9 0	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		0	0	2	0	0	1 2 OF 1 4

TEXT (If more space is required, use additional NRC Form 206A's) (17)

<u>EQUIPMENT NUMBER</u>	<u>EQUIPMENT DESCRIPTION</u>	<u>DESIGN FLOW RATE (gpm)</u>	<u>AS-FOUND FLOW RATE (gpm)</u>	<u>EQUIPMENT MODEL NUMBER/ MANUFACTURER (1)</u>
13) 1E12C002B	RHR Pump Seal Cooler 1B	20	12.95	IT-5543 [h] Item 15
14) 1E12B001B	RHR HX	5800	5681.6	767E786 [e]
15) 1VP04CB	Drywell Chiller	2000	2301	[j]
16) 0VC13CB	Control Room HVAC System Chiller	800	905.6	[j]
17) 1FC01AB	Fuel Pool Cooling and Cleanup HX	4143	4847.1	[j]
18) 1VX06CB	Switchgear Heat Removal Condensing Unit	160	129.0	5H60 [i]
19) 1SX01PB	SX Pump Motor Bearing Cooler	7	18.6	[j]
20) 1FC02PB-M	Fuel Pool Cooling and Cleanup Pump	25	28.5	[j]
21) 1E12C002C	RHR Pump Seal Cooler 1C	20	11.6	IT-5543 [h] Item 15

NOTE: See TABLE I for notes.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

FACILITY NAME (1)  Clinton Power Station	DOCKET NUMBER (2)  0 5 0 0 0 4 6 1	LER NUMBER (3)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		9 0	0 0 2	0 0	1 3	OF 1 4

TEXT (If more space is required, use additional NRC Form 365A's) (17)

TABLE III

DIVISION III SX SYSTEM

EQUIPMENT NUMBER	EQUIPMENT DESCRIPTION	DESIGN FLOW RATE (gpm)	AS-FOUND FLOW RATE (gpm)	AS-LEFT FLOW RATE (gpm)	EQUIPMENT MODEL NUMBER/ MANUFACTURER (1)
1) 1VH07SC	SX Pump Room Cooling Coil	16	6.4	20.9	32-36-4CW5-8 [d]
2) 1VY08SA	High Pressure Core Spray (HPCS) [BG] Pump Room Cooling Coil 1A	60	54	70.2	22-47-4CW5-8 [d]
3) 1VY08SB	HPCS Pump Room Cooling Coil 1B	60	52	73.2	22-47-4CW5-8 [d]
4) 1DG13A	Diesel Generator Hx	650	811	671	[j]
5) 1SX01PC	SX Pump Seal Cooler	3	3.9	3.4	[j]
6) 1VX06CC	Switchgear Heat Removal Condensing Unit	50	71	78.4	[j]

NOTE: See TABLE I for notes.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (3)	PAGE (3)
Clinton Power Station	0 5 0 0 0 4 6 1	YEAR	SEQUENTIAL NUMBER
		9 0	0 0 2
		PREVIOUS NUMBER	1 4 OF 1 4

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

[illegible]