



An Exelon/British Energy Company

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**Clinton Power Station**

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Clinton, IL 61727-9351

10 CFR 50.73

U-603613

April 16, 2003

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

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

Subject: Licensee Event Report No. 2003-001-00

Enclosed is Licensee Event Report (LER) No. 2003-001-00: Human Performance Errors Result in Inoperable Containment Isolation Valve and Failure to Isolate Penetration within 4 Hours. This report is being submitted in accordance with the requirements of 10CFR50.73.

The enclosed report contains the following commitments:

- An Operations Policy Statement will be issued to implement a method for completing clearance development sheets.
- A Dynamic Learning Activity will be implemented to challenge licensed operator proficiency on the Operations Fundamentals, including rigor and attention to detail.
- The clearance and tagging procedure will be revised to include guidance on isolating Primary Containment penetrations.

Respectfully,

M. J. Pacilio  
Vice President  
Clinton Power Station

RSF/blf

Enclosures

cc: Regional Administrator - NRC Region III  
NRC Senior Resident Inspector – Clinton Power Station  
Office of Nuclear Facility Safety - Illinois Department of Nuclear Safety

*JE22*

<b>NRC FORM 366</b> (7-2001)		<b>U.S. NUCLEAR REGULATORY COMMISSION</b>		<b>APPROVED BY OMB NO. 3150-0104 EXPIRES 7-31-2004</b> 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.				
<b>LICENSEE EVENT REPORT (LER)</b> (See reverse for required number of digits/characters for each block)								
<b>1 FACILITY NAME</b> Clinton Power Station			<b>2 DOCKET NUMBER</b> 05000461		<b>3 PAGE</b> 1 OF 4			
<b>4. TITLE</b> Human Performance Errors Result in Inoperable Containment Isolation Valve and Failure to Isolate Penetration within 4 Hours								
<b>5. EVENT DATE</b>			<b>6 LER NUMBER</b>		<b>7. REPORT DATE</b>		<b>8. OTHER FACILITIES INVOLVED</b>	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR
02	19	2003	2003	001	00	04	16	03
							FACILITY NAME None DOCKET NUMBER 05000	
							FACILITY NAME None DOCKET NUMBER 05000	
<b>9. OPERATING MODE</b>		<b>11 THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 50 (Check all that apply)</b>						
1		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)
<b>10. POWER LEVEL</b>		20 2203(a)(1)		50 36(c)(1)(i)(A)		50 73(a)(2)(iv)(A)		73 71(a)(4)
091		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)		X 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)		
<b>12. LICENSEE CONTACT FOR THIS LER</b>								
NAME J. C. Wemlinger, Operations Project Specialist						TELEPHONE NUMBER (Include Area Code) (217) 937-3846		
<b>13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT</b>								
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	REPORTABLE TO EPIX
<b>14. SUPPLEMENTAL REPORT EXPECTED</b>						<b>15. EXPECTED SUBMISSION DATE</b>		
YES (If yes, complete EXPECTED SUBMISSION DATE)				X NO		MONTH DAY YEAR		
<b>16. ABSTRACT</b> (Limit to 1400 spaces i.e., approximately 15 single-spaced typewritten lines)								
Residual Heat Removal (RHR) System [BO] Train B Suppression Pool Suction Valve, a Primary Containment Isolation Valve (PCIV), was made inoperable by de-energizing it in the open position in accordance with a clearance. After the valve was made inoperable, the affected Containment penetration was not isolated within 4 hours as required by Technical Specifications (TS). This valve does not have an automatic isolation function; it has remote operation capability from the Main Control Room in the event operator action is required to close the valve during design basis accident conditions. The first cause of this event was inadequate self-checking by the clearance writer during development of the clearance. The clearance writer omitted from the clearance a tag to address closure of the PCIV. The second cause was insufficient rigor and attention to detail by personnel involved in implementing the clearance. Corrective actions for this event include implementing a method of completing clearance development sheets, and implementing a dynamic learning activity to challenge licensed operator proficiency on the Operations Fundamentals including rigor and attention to detail. The open PCIV did not affect the reactor containment function.								

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

#### PLANT CONDITIONS PRIOR TO THE EVENT:

Unit: 1; Event Date: 02/19/03; Event Time: 0615 Central Standard Time  
MODE: 1 (POWER OPERATION); Reactor Power: 091.1 percent  
Reactor Coolant System Temperature: 522 degrees Fahrenheit  
Reactor Coolant System Pressure: 1016 pounds per square inch gage

#### DESCRIPTION OF EVENT

On February 19, 2003, at about 0215 hours, Primary Containment Isolation Valve (PCIV) [ISV] 1E12-F004B, Residual Heat Removal (RHR) System [BO] Train B Suppression Pool Suction Valve, was de-energized in the open position. The valve was de-energized in accordance with clearance number 02-01 RH-J09A to support work on several other valves [V] during a RHR Train B maintenance outage; no work was planned in the outage for this specific valve. The valve is a normally open motor [MO]-operated PCIV with remote operation capability from the Main Control Room (MCR) in the event operator action is required to close the valve during design basis accident conditions. This valve does not have an automatic isolation function. De-energizing this valve in the open position made the valve inoperable and incapable of performing its function to isolate the penetration on demand from the MCR. Making this valve inoperable requires entry into Technical Specification (TS) 3.6.1.3, Action A.1 which requires the affected penetration [PEN] to be isolated within 4 hours with a closed, deactivated automatic isolation valve, or by a closed manual isolation valve.

The capability for isolating Primary Containment Penetration 1MC-12 includes PCIV 1E12-F004B, and manual isolation valve 1E12-F304B that was in the open position.

At about 1430 on February 20, during shift turnover, the Control Room Supervisor (CRS) stated that manual isolation valve 1E12-F304B was in the closed position. A Reactor Operator (RO) challenged the CRS on the position of the manual isolation valve, noting that the clearance for the work did not require closure of the manual isolation valve. An investigation was immediately conducted by the oncoming CRS, validating at 1440 hours that the manual isolation valve was not in the closed position. At 1611 hours manual isolation valve 1E12-F304B was shut to satisfy the requirements of TS 3.6.1.3, Action A.1.

The Shift Manager ordered a Prompt Investigation to begin under the Corrective Action Program, and Condition Report 145537 was initiated to track the investigation and corrective action for this event.

No automatic or manually initiated safety system actuations were necessary to place the plant in a safe and stable condition. No other inoperable equipment or components directly affected this event.

#### CAUSE OF EVENT

Investigation of the cause of this event identified two root causes. The first root cause is the clearance writer (licensed operator) failed to exercise adequate self-checking during development of the clearance. The clearance writer omitted from the clearance a tag to address closure of PCIV 1E12-F004B. Contributing to this cause was the lack of written guidance on isolating Primary Containment penetrations.

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

The second root cause is the personnel involved in implementing the clearance did not apply sufficient rigor and attention to detail to meet TS requirements. The review of the clearance failed to identify that PCIV 1E12-F004B was de-energized incorrectly in the open position. The Reactor Operators (licensed) involved in review of the clearance did not tag the PCIV to isolate the penetration. The CRS (licensed) review of controls needed for compliance with the TS was not independent as required. Prior to review of the clearance, the CRS had extensive discussion about the clearance and administrative controls with the Work Control Supervisor (licensed). The Work Control Supervisor was the tagging authority.

A contributing factor was the Reactor Operators were not clear on the application of TS 3.6.1.3 Action A.1 in the case of a non-automatic PCIV.

## SAFETY ANALYSIS

This event is reportable under the provisions of 10CFR50.73(a)(2)(i)(B) due to the failure to isolate Primary Containment Penetration 1MC-12 within 4 hours after de-energizing PCIV 1E12-F004B in the open position.

PCIV 1E12-F004B was inoperable for 37 hours and 56 minutes without isolating Primary Containment Penetration 1MC-12, 33 hours and 56 minutes longer than permitted by TS 3.6.1.3, Action A.1.

There was no work planned in the RHR outage for PCIV 1E12-F004B, no work to breach the Emergency Core Cooling System piping (Closed Loop Outside Containment (CLOC)), and the CLOC was not drained, therefore, there was no open pathway in the physical integrity of the reactor containment or actual reduction in the atmospheric control function of the reactor containment due to this event.

Further, in the event of a design basis accident, the Primary Containment penetration isolation function could have been maintained. PCIV 1E12-F004B could have been closed from the MCR after sending a non-licensed operator to re-energize the valve at its breaker on Elevation 781 Auxiliary Building. There would be no radiation concerns in this area until well after an event exceeded the design basis event. The Updated Safety Analysis Report Section 6.3.2.8 identifies the design basis for closing manually activated PCIV 1E12-F004B, indicating that necessary operator response times for this manual action are approximately 2 hours and 30 minutes. This time bounds the time necessary for energizing the breaker and closing PCIV 1E12-F004B.

No safety system functional failures occurred during this event.

## CORRECTIVE ACTION

An Operations Policy Statement will be issued to implement a method for completing clearance development sheets. (ATI 145537-24)

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

A dynamic learning activity (DLA) will be implemented to challenge licensed operator proficiency on Operations Fundamentals, including rigor and attention to detail. (ATI 145537-25)

The personnel involved in this event were coached / counseled on their errors.

Procedure OP-CL-109-101, Clearance and Tagging, will be revised to include guidance on isolating Primary Containment penetrations. (ATI 145537-34)

**PREVIOUS OCCURRENCES**

LER Number	Title
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None

**COMPONENT FAILURE DATA**

Manufacturer	Nomenclature	Model Number	Manufacturer Part Number
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None