

**LICENSEE EVENT REPORT (LER)**

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

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

<b>FACILITY NAME (1)</b> Clinton Power Station	<b>DOCKET NUMBER (2)</b> 05000461	<b>PAGE (3)</b> 1 OF 4
---------------------------------------------------	--------------------------------------	---------------------------

**TITLE (4)**  
Main Steam Isolation Valves Closure Time Out of Technical Specifications Due to Procedural Inadequacy

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 NAME	DOCKET NUMBER
04	26	88	97	014	00	06	18	97	None	05000
									None	05000

<b>OPERATING MODE (9)</b> 4	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)									
<b>POWER LEVEL (10)</b> 000	20.2201(b)	20.2203(a)(2)(v)	<input checked="" type="checkbox"/>	50.73(a)(2)(i)	50.73(a)(2)(viii)					
	20.2203(a)(1)	20.2203(a)(3)(ii)		50.73(a)(2)(ii)	50.73(a)(2)(x)					
	20.2203(a)(2)(i)	20.2203(a)(3)(iii)		50.73(a)(2)(iii)	73.71					
	20.2203(a)(2)(ii)	20.2203(a)(4)		50.73(a)(2)(iv)	OTHER					
	20.2203(a)(2)(iii)	50.36(c)(1)		50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 368A					
	20.2203(a)(2)(iv)	50.36(c)(2)		50.73(a)(2)(vii)						

**LICENSEE CONTACT FOR THIS LER (12)**

NAME J. C. Allen, Senior Engineer	TELEPHONE NUMBER (Include Area Code) (217) 935-8881, Extension 4046
--------------------------------------	------------------------------------------------------------------------

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

<b>SUPPLEMENTAL REPORT EXPECTED (14)</b>	<b>EXPECTED SUBMISSION DATE (15)</b>	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE.)	<input checked="" type="checkbox"/> NO			

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

With the plant in COLD SHUTDOWN and the sixth refueling outage in progress, a review of instrument accuracy for compliance with the Technical Specifications (TS) was being performed. During the review it was determined that Clinton Power Station procedure 9061.09, which satisfies TS Surveillance Requirement (SR) 3.6.1.3.6 governing Main Steam Isolation Valve (MSIV) closure time testing, was not adequate because it did not account for full valve travel. Faulty data from CPS 9061.09 was also used in procedure 9432.30 to satisfy TS SR 3.3.6.1.7 for MSIV system response time testing. Consequently, there have been several instances since April 26, 1988, where the MSIV valve and system closure times have not been within TS SR 3.6.1.3.6 and TS SR 3.3.6.1.7. The cause of this event was determined to be procedural inaccuracy. Corrective actions include revising CPS 9061.09 to account for full valve travel, verifying MSIV operability before plant start up, and training plant operators on the MSIV limit switch configuration and position indication.

9706250245 970618  
PDR ADOCK 05000461  
S PDR

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Clinton Power Station	05000461	97	014	00	2 OF 4

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

DESCRIPTION OF EVENT

On May 20, 1997, with the plant in Mode 4 (COLD SHUTDOWN) with reactor coolant temperature being maintained between 100 and 120 degrees Fahrenheit and reactor pressure at zero pounds per square inch, the sixth refueling outage (RF-6) was in progress. A review of instrument accuracy for compliance with the Technical Specifications was being performed in response to an Information Notice received from the Institute of Nuclear Power Operations (INPO) Nuclear Network. This review included evaluating the use of a digital stop watch [KI] to measure Main Steam Isolation Valve (MSIV) [ISV] closure time in accordance with CPS 9061.09, "MS/FW System Valve Operability (Cold Shutdown)," and TS SR 3.6.1.3.6. MSIV closure time testing in accordance with TS SR 3.6.1.3.6 is required to be performed every eighteen months.

During the investigation it was noted that remote indicating lights located on a panel in the MCR were used for time testing MSIVs. Each main steam line at CPS has two redundant MSIVs, inboard and outboard. There are two indicating lights for each valve. One of the indicating lights is red and is lit when the valve is ten (10) percent open to one-hundred (100) percent open. The other indicating light is green and is lit when the valve is ninety (90) percent open to fully closed. Control room operators time MSIV closure from when the valve switch is turned, to when the red open light on the MCR panel extinguishes at the 90 percent closed position. CPS procedure 9061.09 requires timing the valve to full closure, therefore, Condition Report 1-97-05-237 was initiated.

An investigation into this condition concluded that since issuance of the original CPS 9061.09, full MSIV closure has not been accurately measured as required by TS SR 3.6.1.3.6. Further investigation identified that the incorrect data obtained from performing CPS 9061.09 was also used in CPS 9432.30, "MSIV Isolation System Response Time Test". This procedure tests instrumentation response time associated with MSIV automatic trip functions to fulfill TS SR 3.3.6.1.7. The stroke times obtained in CPS 9061.09 are added to the instrument response times of the automatic trip functions to obtain an overall system isolation response time. Due to incorrect data obtained from CPS 9061.09, system isolation response times were also not accurately measured as required by TS SR 3.3.6.1.7.

A review of previous CPS 9061.09 data indicates that MSIV closure time has been recorded as high as five (5) seconds. If a correction factor is applied to account for full valve travel, the actual time to closure was approximately 5.55 seconds, 0.55 seconds longer than allowed by the Technical Specification acceptance criteria. This estimate was derived by multiplying the recorded stroke time by 100 and dividing the product by 90. To meet the maximum stroke time permitted by TS SR 3.6.1.3.6 using this formula, an MSIV must have indicated closed by the red indicating light extinguishing on the MCR panel in 4.5 seconds or less. April 26, 1988, with the plant in Mode 4 (COLD SHUTDOWN), was the first of several instances where recorded time measurements have not been within TS SR 3.6.1.3.6 and TS SR 3.3.6.1.7 acceptance criteria. These instances have affected four out of the eight MSIVs.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Clinton Power Station	05000461	97	014	00	3 OF 4

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

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

CAUSE OF EVENT

The cause of this event is attributed to procedural inadequacy. CPS 9061.09 did not include an accurate method to time full valve travel. Furthermore, Plant Operations personnel were not aware that the valve open indicating light extinguishes at the 90 percent closed position instead of the fully closed position. An investigation of this event identified that the original version of CPS 9061.09 did not contain an accurate method to time full valve stroke. The author and reviewers of the original version of the procedure apparently did not recognize that the "close" valve position indicating light was set to extinguish at the 90 percent closed and not the fully closed position.

CORRECTIVE ACTION

CPS 9061.09 will be revised to account for full valve travel. Operations personnel will be trained on the MSIV limit switch configuration and how it affects the position indicating lights in the MCR. An engineering evaluation was performed on the most recent MSIV closure results performed May 20, 1997. The evaluation determined that one of the eight MSIVs did not meet TS requirements. This MSIV's stroke time will be adjusted and the valve will be retested to verify TS operability before plant start up.

ANALYSIS OF EVENT

This event is reportable under the provisions of 10CFR50.73(a)(2)(i)(B) due to failure to meet requirements of TS SR 3.6.1.3.6 and TS SR 3.6.6.1.7. MSIV valve and system closure times did not meet the acceptance criteria of the Technical Specifications on several occasions since April 26, 1988. This condition went undetected because of deficiencies in CPS 9061.09. An analysis of the safety consequences and implications identified that this event was not safety significant. Each main steam line at CPS has two MSIVs. No occurrences of both MSIVs in a main steam line failing to meet the acceptance criteria of TS SR 3.6.1.3.6 during the same period were discovered during review of previous performances of surveillance test results. This confirms system isolation response time would have occurred within the criteria of TS SR 3.3.6.1.7 excluding a failure of an MSIV to close. Furthermore, an analysis of this event has determined that isolation during a main steam line rupture is the most limiting scenario for MSIV closure. Closure time for this accident is based on dose to the general public. The projected dose increase associated with the last 10 percent of MSIV travel time is inconsequential.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Clinton Power Station	05000461	97	014	00	4 OF 4

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

ADDITIONAL INFORMATION

No equipment or component failed during this event.

No similar events concerning inadequate MSIV stroke time testing have been reported in recent history. Additional evaluation is continuing to ensure this situation does not exist for other stroke-timed valves.

For further information regarding this event, contact J. C. Allen, Senior Engineer, at (217) 935-8881, extension 4046.