

## LICENSEE EVENT REPORT (LER)

APPROVED OMB NO. 3160-0104  
EXPIRES 6/30/95

FACILITY NAME (1) INDIAN POINT, UNIT 2 DOCKET NUMBER (2) 050000247 PAGE (3) 1 OF 013

TITLE (4)

## TRIP OF MAIN FEEDWATER PUMPS/REACTOR TRIP

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		DOCKET NUMBER(S)	
03	26	85	85	005		04	23	85			050000	
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § 1.61 (Check one or more of the following) (11)									
POWER LEVEL (10) 0.25			20.402(b)			20.406(a)			<input checked="" type="checkbox"/> 60.73(a)(2)(iv)			73.71(b)
			20.406(a)(1)(i)			60.36(a)(1)			<input type="checkbox"/> 60.73(a)(2)(v)			73.71(a)
			20.406(a)(1)(ii)			60.36(a)(2)			<input type="checkbox"/> 60.73(a)(2)(vi)			OTHER (Specify in Abstract below and in Text, NRC Form 366A)
			20.406(a)(1)(iii)			60.73(a)(2)(i)			<input type="checkbox"/> 60.73(a)(2)(vii)(A)			
			20.406(a)(1)(iv)			60.73(a)(2)(ii)			<input type="checkbox"/> 60.73(a)(2)(vii)(B)			
20.406(a)(1)(v)			60.73(a)(2)(iii)			<input type="checkbox"/> 60.73(a)(2)(viii)						
20.406(a)(1)(vi)			60.73(a)(2)(iv)			<input type="checkbox"/> 60.73(a)(2)(ix)						
20.406(a)(1)(vii)			60.73(a)(2)(v)			<input type="checkbox"/> 60.73(a)(2)(x)						

LICENSEE CONTACT FOR THIS LER (12) NAME JOHN R. ELLWANGER TELEPHONE NUMBER AREA CODE 914 526 4518

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	
B	SLJ	CLPLOS	B10415	N		B	SLJ	1184	C16135	N	
B	SLJ	1FICY	C16135	N		X	SLJ	111P	10175	N	

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

ABSTRACT (Limit to 1600 words, i.e., approximately fifteen single-space typewritten lines) (16)

On March 26, 1985 during a preplanned power descent necessary to repair the feedwater regulating valve for steam generator #23, Main Boiler Feedwater Pumps #21 and #22 tripped. The operator manually tripped the reactor and stabilized conditions at hot shutdown. The power output was 227 MWe at the time of the occurrence.

The event was reviewed and it was determined that although it represented an unplanned shutdown of the reactor, there were no safety implications associated with the loss of both Main Boiler Feedwater Pumps. The regulating valve was repaired and the plant returned to full power operation.

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## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/85

FACILITY NAME (1)  INDIAN POINT, UNIT 2	DOCKET NUMBER (2)  0 5 0 0 0 2 4 7	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
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TEXT (If more space is required, use additional NRC Form 366A) (17)

Plant and System Identification:

Westinghouse 4-Loop Pressurized Water Reactor - 900 MWe.

Identification of Occurrence:

Unplanned manual actuation of the Reactor Protection System (Reactor Trip) due to trip of the two Main Boiler Feedwater Pumps.

Event Date: March 26, 1985.Report Due Date: April 25, 1985.

This report was initiated by Significant Occurrence Report 85-115.

Description of Occurrence:

At 0748 hours on March 26, 1985 Main Feedwater Regulating Valve 437, (Copes-Vulcan D-100 Series) was observed to be in a position different from that indicated in the Central Control Room. The indicated position was 100% full open while the valve was actually only 83% open. The reactor was initially at 100% power. Power was subsequently reduced to 740 MWe due to #23 Steam Generator level not tracking to the required demand signal.

Visual inspection of the regulating valve revealed a valve positioner misalignment. At 0831 hours a decision was made to reduce power to 200 MWe to repair the regulating valve positioner because of the potential for a Unit trip arising from the Steam Generator level control problem. At 1026 hours at a power level of 227 MWe, both Main Boiler Feedwater Pumps (Ingersoll Rand 034-33212) tripped without warning. The reactor was manually tripped and placed in hot shutdown.

Apparent Cause of Occurrence:

While the Unit was at hot shutdown the positioner on the feedwater regulating valve was replaced and the valve stroke reset to correct the misalignment problem. However, when the plant was brought back to power operation the valve opening position still did not correspond to the demand position in the Central Control Room. Flow was observed to decrease slightly over a period of time despite a constant demand. Further inspection indicated that the valve shaft had become loose at the valve operator and was being driven closed by its own weight and vibration.

The valve shaft was back-threaded several turns into the valve operator (Copes-Vulcan D-100-16013) and a locking device tightened, which eliminated the problem.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
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TEXT (if more space is required, use additional NRC Form 366a) (37)

The trip of both Main Boiler Feedwater Pumps was evaluated to determine a single occurrence which could affect both pumps. The most logical candidate was the control oil system, in particular the performance of the Main Lube Oil Pumps. Although two pumps are provided, only one pump is normally operating with the second being an automatic back-up. The Lube Oil Pumps and automatic transfer circuitry were checked and found to be functioning satisfactorily. All alarms associated with the oil system were normal. No alarms occurred during the event to indicate that the system was functioning in a manner other than satisfactorily.

Additional investigations were conducted of the Main Boiler Feedwater Pump Trip mechanisms and checks were made of the solenoid trip circuits for grounds. The pressure switches on the discharge side of the Main Boiler Feedwater Pumps were also checked. No abnormalities could be detected.

Although the cause of the event could not be identified, it appears that a pressure transient in the feedwater system may have caused the feedwater pumps to trip due to actuation of the high pressure switch on the discharge pressure side of the pumps. During power descent the pump discharge pressure normally rises to 1400 psig. The high pressure pump trip occurs at 1450 psig.

Analysis of Occurrence:

The operator, anticipating an automatic trip due to loss of main feedwater, initiated an unplanned manual reactor trip. The Reactor Protection System functioned normally. Although the positioner linkage on the feedwater regulating valve was misaligned, the regulating valve would have performed its isolation function in the event of a steam line break. The redundant feedwater pump discharge isolation valves and their circuitry were also checked and found to be operable.

There were no safety implications. All safety related equipment functioned as designed.

Corrective Action:

The positioner (Bailey AP-2) was replaced and the shaft repositioned and secured. Since no further problems are anticipated with this equipment, no further action is planned. The actions taken with respect to the trip of the Main Boiler Feedwater Pumps were reviewed by the Station Nuclear Safety Committee which determined that no safety issue existed.

The plant plans to perform further checks on the Main Boiler Feed Pumps when plant conditions equivalent to those at the time of the event can be established to determine if further action is necessary from a plant reliability standpoint.

John D. O'Toole  
Vice President

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April 23, 1985

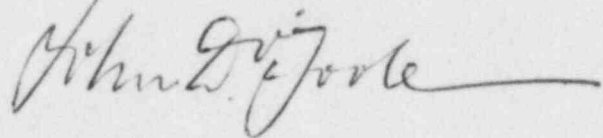
Re: Indian Point Unit No. 2  
Docket No. 50-247  
LER-85-005-00

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

Dear Sirs:

The attached Licensee Event Report LER-85-005-00 is hereby submitted in accordance with the requirements of 10 CFR Part 50.73.

Very truly yours,



attach.

cc: Dr. Thomas E. Murley,  
Regional Administrator-Region I  
U. S. Nuclear Regulatory Commission  
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