NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
INDIAN POINT, UNIT 2	0 5 0 0 0 2 4 7	1 OF 0 3

TITLE (4)
MODIFIED SERVICE WATER PUMP SEISMIC RESTRAINTS

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)
0 7	1 1	8 5	8 5	— 0 0 7	— 0 1	0 2	0 6	8 6		0 5 0 0 0
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OPERATING MODE (9)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10) 1 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)	50.73(a)(2)(v)	73.71(c)
	20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	X OTHER (Specify in Abstract below and in Text, NRC Form 366A)
	20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	(For Info Only)
	20.405(a)(1)(iv)	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)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
JOHN R. ELLWANGER	AREA CODE 9 1 4 — 5 2 6 - 5 1 8 2

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
A	B 1	S P T		Y					

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)

On July 11, 1985, an inspection of the six service water pumps indicated a gap between the seismic restraint and a collar mounted on the vertical pumps in excess of that specified on the original structural drawing. In addition, the restraints did not align vertically with the seismic collars mounted on the pump casing. In response to these findings, on July 11, 1985 four plates (each representing a 90° sector) were welded to the existing plates for each pump, which eliminated the excessive gap and corrected the vertical alignment problem.

A stress analysis completed after submittal of Revision 0 of this report determined that the service water pumps in their "as found" condition would have remained operable during a design basis seismic event.

IE22

Plant and System Identification:

Westinghouse 4-loop Pressurized Water Reactor - 900 MWE

Identification of Occurrence:

Modified seismic restraints on Service Water Pumps

Event Date: 7/11/85

Reportability Determination: Not applicable

Original Report Due Date: 8/10/85

This report was initiated by SOR 85-293

Description of Occurrence

On July 11, 1985, while at full power operation, an inspection was made of the seismic restraints on the six (6) Service Water Pumps. The inspection was initiated at the request of the NRC resident inspector who was aware of prior modifications to similar restraints at I.P.-3. The original drawings for pump installation and alignment with the seismic restraint permitted no more than 1/16 of inch gap between the seismic restraint and a collar mounted on the vertical pump. The collar and restraint were to align vertically without an offset. The "as found" conditions consisted of a gap of approximately two inches and a coincident misalignment in the vertical direction. The pumps were declared inoperable and an LCO entered. Prior to completion of the LCO, emergency repairs were completed and the plant was returned to full power operation.

On August 9, 1985 in Revision 0 of this report we indicated that a dynamic structural analysis would form the basis for a determination as to whether the Service Water Pumps in their "as found" condition would have remained operable in the event of a Design Basis Earthquake. We have completed the analysis and have determined that the pumps would have remained operable in the event of a Design Basis Earthquake.

Apparent Cause of Occurrence

An evaluation of maintenance records was performed to determine a possible cause. A November 20, 1975 maintenance request addressed

excessive vibration on #26 Service Water Pump. An investigation at that time indicated pump misalignment with the casing in hard contact (i.e., pre-loading) with the horizontal restraint. The restraint was relaxed and vibration decreased to an acceptable level.

It is believed that in the process of "relaxing" the restraint, the gap was enlarged by the cutting of metal from the restraint plate. This same process was evidently employed on all six pumps. The vertical misalignment observed was evidently due to shimming of the pumps during replacement or maintenance.

Analysis of Occurrence

Notice of completion of the dynamic structural analysis was issued November 14, 1985. A finite element model of the pumps was subjected to deadweight, seismic and operating loads including the hydro-dynamic effects of a submerged pump column. The results of the analysis indicate that with the lateral seismic restraint not acting, the service water pumps are capable of maintaining structural integrity and operability during and after a safe shutdown earthquake.

Corrective Action

With the determination that the operability of the Service Water Pumps was not interrupted, the action taken to date with respect to adequacy of the service water pump restraints is conservative.

John D. O'Toole
Vice President

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February 6, 1986

Re: Indian Point Unit No. 2
Docket No. 50-247
LER-85-007-01

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

Dear Sirs:

The attached update to Licensee Event Report LER-85-007 is hereby submitted for information only.

Very truly yours,

John D. O'Toole

attach.
cc: Dr. Thomas Murley,
Regional Administrator - Region I
U. S. Nuclear Regulatory Commission
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King of Prussia, Pa. 19406

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