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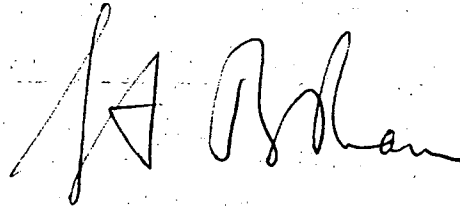
March 14, 1991

Re: Indian Point Unit No. 2
Docket No. 50-247
LER 91-04-00

Document Control Desk
US Nuclear Regulatory Commission
Mail Station P1-137
Washington, DC 20555

The attached Licensee Event Report LER 91-04-00 is hereby
submitted as a voluntary submittal of information of interest
to the NRC.

Very truly yours,



Attachment

cc: Mr. Thomas T. Martin
Regional Administrator - Region I
US Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Mr. Francis J. Williams, Jr., Project Manager
Project Directorate I-1
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US Nuclear Regulatory Commission
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LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Indian Point Unit No. 2	DOCKET NUMBER (2) 0 5 0 0 0 2 4 7	PAGE (3) 1 OF 0 3
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TITLE (4)
Damaged Hold-Down Bolts for Polar Crane Rail

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	2	1	2	9	1	0	0	4	0	0	0	0	0	3	1	4	9	1		0 5 0 0 0

OPERATING MODE (9) N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)									
POWER LEVEL (10) 0 0 0	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)						
	<input type="checkbox"/> 20.406(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)						
	<input type="checkbox"/> 20.406(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input checked="" type="checkbox"/> OTHER (Specify in Abstract below and in Text, NRC Form 366A)						
	<input type="checkbox"/> 20.406(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)							
	<input type="checkbox"/> 20.406(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)							
<input type="checkbox"/> 20.406(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)								

LICENSEE CONTACT FOR THIS LER (12)

NAME Joan F. Etzweiler	TELEPHONE NUMBER
	AREA CODE 9 1 4 5 2 6 - 5 3 6 5

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	L R C O N		X 0 0 0	N					

SUPPLEMENTAL REPORT EXPECTED (14)

<input checked="" type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
			0	5	3 1 9 1

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

On February 12, 1991, while the plant was shutdown for a refueling outage, some of the bolts that secure the containment building polar crane rail to the concrete support wall were determined to be damaged. 44 out of the 130 bolts in one quadrant were effected. Preliminary failure analysis indicates that the damage was very likely initiated upon original installation during plant construction, in 1967-68. Based on the NUREG 0612 analysis, sufficient margin existed such that with the reduced bolt configuration, original acceptance criteria were met. Nevertheless, repairs were made before a heavy load lift was made. Additional root cause analysis is underway.

**LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION**

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		9 1	— 0 0 4	— 0 0	0 2	OF	0 3

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

PLANT AND SYSTEM IDENTIFICATION:

Westinghouse 4-Loop Pressurized Water Reactor

IDENTIFICATION OF OCCURRENCE:

Damaged hold-down bolts for containment polar crane rail.

EVENT DATE:

February 12, 1991

REPORT DUE DATE:

March 14, 1991

REFERENCES:

Open Item Report 91-02-075

PAST SIMILAR OCCURRENCE:

None

DESCRIPTION OF OCCURRENCE:

Subsequent to plant shutdown for a refueling outage, personnel were performing an inspection of the containment building polar crane components during scheduled work on the trolley beam end connections. During this inspection, it was determined that certain bolts intended to fasten the polar crane rail to the supporting concrete were loose. Consequently, snug tightening, using an open end box wrench, was attempted on all 648 bolts. As a result, 44 bolts, all located within one quadrant, were discovered to have damage. The damaged bolts showed evidence of corrosion and in most cases fractured heads. In addition to the bolts which fasten the rail to the concrete, there are also bolts for the rail clamp. None of these rail clamp bolts were found to be damaged.

Additionally, ultrasonic testing (UT) was performed on approximately 130 bolts sampled at five foot intervals along the entire circumference. Based on the tightening and the UT, the other 86 bolts in the affected quadrant, the 518 bolts in the other quadrants, and all the bolts securing the rail clamps were determined to be sound.

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		9 1 -	0 0 4 -	0 0	0 3	OF	0 3

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

ANALYSIS OF OCCURRENCE:

Based on the loading requirements in the NUREG 0612 analysis, we believe that sufficient margin exists such that the reduced bolt configuration satisfies the original acceptance criteria. Root Cause analysis is still in progress, therefore, a supplemental LER will be provided when the analysis is complete.

CAUSE OF OCCURRENCE:

Based on preliminary visual examination, and some preliminary lab analysis, it is surmised that at least some of the bolts may have failed upon initial installation; subsequently their fracture surfaces became corroded. No causative signs of stress corrosion cracking, fatigue or service overload were observed.

Fracture samples are being tested to aid in root cause analysis. In addition, four full size core samples of apparently sound bolts, including stud, concrete, grout and base plate, will be subjected to chemical testing and mechanical testing including torsional, tensile and Charpy. One sample will be taken from each quadrant. This testing will confirm the adequacy of the undamaged bolts, and also serve as a base for comparison to the damaged bolts, to aid in the root cause analysis. Results will be provided in the supplemental LER submittal.

CORRECTIVE ACTION:

As a repair, 33 new bolts were installed in the quadrant with the damaged bolts at selected locations between the damaged bolts. The new bolts are Drillco Maxi-Bolts and are substantially stronger than the original bolts. They were installed by drilling through the existing base plates and concrete, and expanding their anchor systems into place by using a hydraulic torque wrench. A nut and washer is then installed on each bolt and torqued to a specified value. The new bolting configuration was analyzed, with no credit taken for the damaged bolts, and determined to satisfy original design conditions for the rail installation.