

LICENSEE EVENT REPORT (LER)

Facility Name (1) Byron, Unit 1 Docket Number (2) 015000454 Page (3) 1 of 02

Title (4) FAILURE OF THE 1B RH PUMP DUE TO HIGH VIBRATION

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)
07	24	85	85	070	00	08	23	85		015000454

OPERATING MODE (9) 1 THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)

POWER LEVEL (10) 100	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)	Other (Specify in Abstract below and in Text)
	20.405(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
	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 Carolyn Kilbride Ext. 2245 TELEPHONE NUMBER AREA CODE 8115 234-5441

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	B P	P	1 0 7 5						

SUPPLEMENTAL REPORT EXPECTED (14)

X [Yes (If yes, complete EXPECTED SUBMISSION DATE)] [NO] Expected Submission Date (15) 100185

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

On July 24, 1985, at approximately 2230 hours, during the performance of the ASME Quarterly Surveillance test for the Train B Residual Heat Removal Pump (1RH01PB), vibration readings for the pump's upper motor bearing exceeded the acceptance criteria limits. The applicable Tech. Spec. Action requirement was to repair the pump within 72 hours or be in Hot Standby in 6 hours and Hot Shutdown in the following 6 hours. The pump could not be repaired within the time limit so the Reactor was tripped on July 27, 1985 at 2001 hours and mode 4 was entered at 1025 on July 28, 1985.

The pump was repaired via a Nuclear Work Request. A modification to the motor supports to change the natural frequency to minimize pump vibrations is being investigated, and will be discussed in a supplemental report.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT

On July 24, 1985, at approximately 2230 hours, during the performance of the ASME Quarterly Surveillance Test for the Train B Residual Heat Removal Pump (1RH01P8), vibration readings taken at the pump's upper motor bearing exceeded the acceptance criteria limits. At the time, the plant was at 100% power. The applicable Tech. Spec. Action Requirement was to repair the pump within 72 hours or be in Hot Standby in 6 hours and Hot Shutdown in the following 6 hours. The plant was placed in Hot Standby at 2001 on July 27, 1985 and Hot Shutdown at 1025 on July 28, 1985.

Upon disassembly of the pump and motor, the following items were identified as contributing to the high vibration readings:

1. Nail found in the motor windings.
2. Slight imbalance of the rotor & shaft.
3. Out of tolerance between the upper motor bearing runner and the shaft.

To correct these conditions, the nail was removed, the rotor and shaft balanced, and finally, a new bearing runner was fabricated to as close a fit as possible to the shaft. The surveillance was then reperfomed and successfully completed.

One further item also identified as possibly amplifying the actual vibrations is an interaction between induced vibration frequency of the pumps and the natural frequency of the pump/motor assembly. Project Engineering and Westinghouse are investigating the possibility of modifying the motor supports to change the natural frequency of the system. The results of this investigation will be covered in a supplemental report.

This safety system train was declared inoperable as of 2230 on 7/24 and was restored to operable status at 0330 on 7/31. The other train of RH was, however, operable and aligned to serve its safety function.

There have been no previous occurrences of this event. Both RH pumps have been on an increased testing frequency since March, 1985 due to high vibration, but the values were not in the required action range. Containment Spray B Pump which is similar to the RH pumps, has also experienced high vibration readings and its testing frequency has been increased per the ISI Program.

The pump is an Ingersoll-Rand, Model 8X20 WDF. The motor is manufactured by Westinghouse.



Commonwealth Edison
Byron Nuclear Station
4450 North German Church Road
Byron, Illinois 61010

August 23, 1985

LTR: BYRON 85-1187

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

Dear Sir:

The enclosed Licensee Event Report from Byron Generating Station is being transmitted to you in accordance with the requirements of 10CFR50.73(a)(2)(i) which requires a 30 day written report.

This report is number 85-070-00; Docket No. 50-454.

Very truly yours,

R. E. Querio
Station Superintendent
Byron Nuclear Power Station

REQ/gt

Enclosure: Licensee Event Report No. 85-070-00

cc: J. G. Keppler, NRC Region III Administrator
J. Hinds, NRC Resident Inspector
INPO Record Center
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