

LICENSEE EVENT REPORT (LER)

Facility Name (1) Byron, Unit 1 Docket Number (2) 0 5 0 0 0 4 5 4 Page (3) 1 of 0 2

Title (4) Reactor Trips Due to Dropped Rods

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	3	2	9	8	5	8	5	---	0	4	2	---	0	0	0	4	5	4	1	of	0	2

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)	0	1	8	20.402(b)	---	20.405(c)	X	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
				20.405(a)(1)(iii)	---	50.73(a)(2)(i)	---	50.73(a)(2)(viii)(A)	---	Abstract below and
				20.405(a)(1)(iv)	---	50.73(a)(2)(ii)	---	50.73(a)(2)(viii)(B)	---	in Text)
				20.405(a)(1)(v)	---	50.73(a)(2)(iii)	---	50.73(a)(2)(x)	---	

LICENSEE CONTACT FOR THIS LER (12)

Name Don George, System Test Engineer Ext. 607 TELEPHONE NUMBER AREA CODE 8 1 5 2 3 4 - 5 4 4 1

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

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS		
X	A	A	E	C	B	D	W	1	2	0	N

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)

While the Unit was operating at 18% power a reactor trip occurred due to Power Range Flux Rate High on the Excore Neutron Detectors. Investigation of the Sequence of Events Recorder showed that the four rods in Shutdown Bank A Group 1 all fell causing a high negative rate. It was believed that degradation of Control Rod power fuses and missing seismic clamps on these fuses, aggravated by the slamming of a power cabinet door was the root cause of the trip. The Unit was returned to power the following day with no further effects. However, an identical trip occurred 11 days later and more extensive troubleshooting was undertaken. A faulty circuit card in the Control Rod Drive Logic Cabinet was determined to be the cause of the two trips. The card was replaced, and the rod drive system is now operating properly.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT

On March 29, 1985 at 23:56 a reactor trip occurred due to a Power Range Flux Rate High Trip. The trip occurred as a result of four rods from Shutdown Bank A Group 1 losing gripper coil current and falling into the core. This resulted in a high negative flux rate which tripped the unit. Again on April 10, 1985 at 13:35 an identical trip occurred with the Unit at 28%. Neither trip produced any safety concerns, since the unit shut down per design and no difficulties were encountered. The Rod Drive system is a standard Westinghouse system.

After the trip on March 29, maintenance personnel inspected the fusing in power cabinet 1AC (the cabinet from which the rods were dropped). It was found that three of the fuses were open circuits, and there was an oxide coating on most of them which could prevent proper contact and introduce resistance. Also, the absence was noted of several seismic clip clamps designed to secure the fuses to their holders and provide proper contact. At the same time as the trip, maintenance personnel were replacing a redundant power supply in cabinet 2AC, the cabinet adjacent to the one which dropped the rods (1AC). It was believed that when an individual slammed the 1AC cabinet door, that this jogged the loose fuses and caused the rods to drop. This root cause was shown to be incorrect on 4-10 when the unit again tripped from the same rods dropping.

After the second trip, maintenance personnel again inspected the fusing in the power cabinets. This time nothing was found to be wrong with any fuses. Additional investigation yielded the possibility that a modification to the Rod Drive System, which allows for the dropping of a group of rods for rod drop timing, was actuating and allowing the rods to drop. As a precaution, the leads to this modification were lifted in all five power cabinets and preparations were made to return to power. During this preparation the reactor trip breakers were closed to check out the rod drive system and a failure alarm came up on the power cabinet which originally dropped the rods (1AC). The failure alarm was traced to a component failure on a control card in the Logic cabinet. This failure provided a signal to a group of rods in the 1AC power cabinet (the same ones which dropped) which demands zero current through the gripper coils causing the rods to drop. The control card was failing intermittently prior to its final failure, which is why the cause could not be found originally.

Hence, in addition to lifting the rod drop modification leads, the failed circuit card in the Logic cabinet was replaced. Also seismic clip clamps were properly installed on all the power fuses. The Unit was returned to power and the rod drive system is operating properly.

Previous occurrences: None



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

April 25, 1985

LTR: BYRON 85-0625

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)(iv) which requires a 30 day written report.

This report is number 85-042-00, Docket No. 50-454.

Very truly yours,

R. E. Querio
Station Superintendent
Byron Nuclear Power Station

REQ/gt

Enclosure: Licensee Event Report No. 85-042-00

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

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