

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 TRIP DUE TO TURBINE TRIP ABOVE P-7																	
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	0 8	8 5	8 5	0 6 3	0 0	0 8	0 7	8 5			0 5 0 0 0						
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)														
POWER LEVEL (10) 0 0 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 Abstract below and in Text)		
			20.405(a)(1)(iii)			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 Penny Reister, Technical Staff Ext. 2247										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	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS								
A	/	/	/	N													
D	T	B	I	N													
SUPPLEMENTAL REPORT EXPECTED (14)										Expected Submission Date (15)							
X Yes (If yes, complete EXPECTED SUBMISSION DATE)										NO 0 9 1 5 8 5							
ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)																	

During Unit 1 startup, control rod P-8 became misaligned from its bank. With continued control bank motion, the rod became further misaligned. Since Tave was decreasing, the decision was made to trip the turbine. The turbine trip caused a reactor trip because permissive P-7 (reactor and turbine power below 10%) was not actuated. The operator failed to verify that the P-7 light was lit prior to tripping the turbine.

At this time turbine impulse stage pressure instrumentation is giving a false high indication of turbine power. This prevented P-7 from actuating even though both the reactor and turbine power were below 10%. Rescaling of impulse pressure will be done as a part of the startup testing program based on data obtained at 100% power. This will provide correct indication for the operator. In addition, the Training Department will re-emphasize that prior to initiating a turbine trip, P-7 must be verified to be actuated in order to avoid a reactor trip.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION											
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TEXT

At 0349 on July 8, 1985, Unit 1 reactor startup was in progress with the reactor at 8% power and the turbine synchronized to the grid at 54MWe. Control rods were being stepped out manually to control reactor coolant temperature when rod P-8 became misaligned from its bank per digital rod position indication. With continued control bank motion demanded, the rod became further misaligned. Since Tave was decreasing, the decision was made to trip the turbine. The turbine trip caused a reactor trip because the P-7 permissive was not actuated.

Permissive P-7 is actuated (illuminated) and will prevent a reactor trip on a turbine trip only if both nuclear power (P-10) and turbine power (P-13) are below 10%. The turbine power signal input to P-7 is generated based on turbine impulse stage pressure. At the time of the turbine trip, although the generator MW output meter was reading below 10%, the impulse pressure was still above the 10% power P-13 setpoint. This was caused by inaccurate scaling of the impulse pressure loops. The loops are being scaled based on startup test data, and at the time of this event were scaled using available data from 75% power. Startup test 2.64.44, Startup Adjustments of Reactor Control Systems at 100% power which determines required rescaling of impulse pressure, has not yet been performed. When this is done, it is expected that impulse pressure and its associated permissives (P-13, P-7) will provide accurate indication.

The operator failed to verify that P-7 had actuated prior to tripping the turbine. This was because BGP 100-4, the operating procedure which addresses power descension, incorrectly instructed the operator to verify that the P-7 permissive comes on when either P-10 (nuclear power below 10%) and/or P-13 are illuminated. It should have instructed the operator to verify P-7 comes on when both P-10 and P-13 are on. With both nuclear power and MWe below 10%, the operator incorrectly assumed that P-7 was actuated.

There was no impact on plant or public safety from this event since the reactor protection system responded conservatively.

The previous occurrence of a reactor trip due to turbine trip above the P-7 setpoint was on March 14, 1985 (LER 85-028).

Turbine impulse pressure scaling will be reviewed in detail upon return to full power when further data is available. A supplemental report will be issued after the rescaling is complete. In addition, the Training Department will re-emphasize that prior to initiating a turbine trip, P-7 must be verified to be actuated in order to avoid a reactor trip.

A temporary procedure change has been written to BGP 100-4 to correct the statement as listed above. A permanent procedure revision is being initiated to permanently correct this item.

The control rod P-8 misalignment was caused by one pin in the Control Rod Drive Mechanism receptacle not making proper contact with its corresponding socket in the power cable plug. The pin, which is associated with the movable gripper coil, was angled such that when connected it would insert between the outside of its proper socket and the rubber dielectric resulting in intermittent electrical contact. The affected pin was properly oriented and the connection remade. Subsequent P-8 rod operation has indicated no abnormality.

This LER will be routed to all licensed personnel as part of the required reading program.



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

August 7, 1985

LTR: BYRON 85-1110

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 85-063-00; Docket No. 50-454.

Very truly yours,

R. E. Querio
Station Superintendent
Byron Nuclear Power Station

REQ/gt

Enclosure: Licensee Event Report No. 85-063-00

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