

# CATEGORY

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9607300088      DOC. DATE: 96/07/19      NOTARIZED: NO      DOCKET #  
 FACIL: STN-50-454 Byron Station, Unit 1, Commonwealth Edison Co.      05000454  
 AUTH. NAME      AUTHOR AFFILIATION  
 CHOINARD, R.F.      Commonwealth Edison Co.  
 KOFRON, K.L.      Commonwealth Edison Co.  
 RECIP. NAME      RECIPIENT AFFILIATION

SUBJECT: LER 96-010-00: on 960625, manual reactor trip occurred. Caused by defective detector encoder card for rod F-06. Replaced defective encoder card. W/960719 ltr.

DISTRIBUTION CODE: IE22T      COPIES RECEIVED: LTR 1 ENCL 1      SIZE: 4  
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES: Standardized Plant.

05000454

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	AEOD/SPD/RRAB	1		1		<u>FILE CENTER</u>	1		1	
	NRR/DE/ECGB	1		1		<del>NRR/DE/EELB</del>	1		1	
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EXTERNAL:	L ST LOBBY WARD	1		1		LITCO BRYCE, J H	2		2	
	NOAC MURPHY, G.A	1		1		NOAC POORE, W.	1		1	
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Commonwealth Edison Company  
Byron Generating Station  
4450 North German Church Road  
Byron, IL 61010-9794  
Tel 815-234-5441

**ComEd**

July 19, 1996

LTR: BYRON 96-0206  
FILE: 3.03.0800 (1.10.0101)

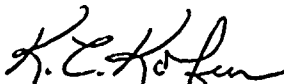
U.S. Nuclear Regulatory Commission  
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Dear Sir:

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).

This report is number 96-010; Docket No. 50-454.

Sincerely,



K. L. Kofron  
Station Manager  
Byron Nuclear Power Station

KLK/WD/js

Enclosure: Licensee Event Report No. 96-010

cc: H. J. Miller, NRC Region III Administrator  
NRC Senior Resident Inspector  
INPO Record Center  
ComEd Distribution List

9607300088 960719  
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<b>NRC FORM 366</b> (4-95)	<b>U.S. NUCLEAR REGULATORY COMMISSION</b>	<b>APPROVED BY OMB NO. 3150-0104</b> <b>EXPIRES 04/30/98</b>
<b>LICENSEE EVENT REPORT (LER)</b> (See reverse for required number of digits/characters for each block)		ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33L U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001), AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104, OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

<b>FACILITY NAME (1)</b> BYRON NUCLEAR POWER STATION	<b>DOCKET NUMBER (2)</b> 05000454	<b>PAGE (3)</b> 1 OF 3
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**TITLE (4)**  
 Manual Reactor Trip Due to Failed Circuit Card in the Digital Rod Position Indication System

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 NAME	DOCKET NUMBER
06	25	96	96	010	00	07	19	96		05000
									FACILITY NAME	DOCKET NUMBER
										05000

OPERATING MODE (9)	POWER LEVEL (10)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more) (11)			
4	0	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)
		<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(x)
		<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(iii)	73.71
		<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 20.2203(a)(4)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)	OTHER
		<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A
		<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	

**LICENSEE CONTACT FOR THIS LER (12)**

<b>NAME</b> Raymond F. Choinard, Root Cause Evaluator	<b>TELEPHONE NUMBER (Include Area Code)</b> 815-234-5441 X2041
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**COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)**

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS
XIEL	AA	ECD	Westinghouse	N					

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input checked="" type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE).	<input type="checkbox"/> NO				

**ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)**

Unit 1 was in Mode 4 and operability testing of the Digital Rod Position Indication (DRPI) system was in progress. Surveillance 1BVS 1.3.3-1, "Digital Rod Position Indication (DRPI) Operability Checkout," was in progress at the time of the event. Special Test Exception 1BOS 10.5-1, "Special Test Exception for DRPI Testing," had been invoked.

During testing of Control Bank C, a (CBC) DRPI Urgent Failure alarm was received in the control room. CBC was at about 48 steps withdrawn. The indication for rod F-06 in CBC briefly went to "Rod at Bottom." Within one second, the indication returned to normal. Procedure 1BVS 1.3.3-1 required that the bank position as indicated on DRPI must be within 12 steps of the demand position shown on the main control board step counters or the reactor trip breakers must be opened immediately. Under this procedural requirement, a manual reactor trip was initiated. 1BVS 1.3.3-1 and 1BOS 10.5-1 were exited and a work request to trouble shoot the problem was initiated.

During the trouble shooting activities it was determined that the detector encoder card for rod F-06 was defective. The card was replaced. The new card was tested and indication for rod F-06 was normal. The surveillance was completed successfully.

There was no safety consequence for this event. The reactor trip breakers were opened in accordance with the surveillance procedure and all rods inserted as expected.

This event is reportable under 10 CFR 50.73 (a)(2)(iv) for any event or condition that resulted in a manual or automatic actuation of any engineered safety feature (ESF), including the reactor protection system (RPS).



NRC FORM 366A 4-99		U.S. NUCLEAR REGULATORY COMMISSION				
<b>LICENSEE EVENT REPORT (LER) TEXT CONTINUATION</b>						
FACILITY NAME (1)		DOCKET	LER NUMBER (6)			PAGE (3)
BYRON NUCLEAR POWER STATION		05000454	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 3
			96	-- 010	-- 00	

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

**A. PLANT CONDITIONS PRIOR TO EVENT:**

Event Date/Time 06-25-96 / 0320

Unit 1 Mode 4 - Hot Standby	Rx Power 0%	RCS [AB] Temperature/Pressure 340 / 462
Unit 2 Mode 1 - Power Operations	Rx Power 99.9%	RCS [AB] Temperature/Pressure NOT/NOP

**B. DESCRIPTION OF EVENT:**

At 01:02, the Reactor Trip Breakers (RTB) [AA] were closed for operability testing of the Digital Rod Position Indication (DRPI) [AA] System. Surveillance test 1BVS 1.3.3-1, "Digital Rod Position Indication (DRPI) Operability Checkout," was in progress at the time. Special Test Exception 1BOS 10.5-1, "Special Test Exception for DRPI Testing," had been invoked. No other equipment was inoperable at the time of this event.

At 01:10, testing began. Control Bank A (CBA) was the first control rod bank to be tested. Testing was completed at 01:41.

At 01:43, testing of Control Bank B (CBB) began. Testing of CBB was completed at 02:05.

At 02:09, testing of Control Bank C (CBC) began.

At 02:18, testing was stopped. There was disagreement between rod B-08 and the remaining control rods in CBC. Rod B-08 was reading six steps lower than the rest of the control rods. A decision was made to reinsert CBC and restart testing of CBC.

At 02:44, CBC was reinserted to zero steps.

At 02:46, testing was resumed.

At 03:05, CBC was at 143 steps withdrawn as indicated on DRPI. At this time, the DRPI for rod F-06 briefly flashed at 144 to 150 steps. The problem was discussed between shift personnel and System Engineering Department personnel and they decided to reinsert CBC.

At 03:19, insertion of CBC began.

At 03:20, a DRPI Urgent Failure alarm was received in the control room. CBC was at about 48 steps withdrawn. The indication for rod F-06 in CBC briefly went to "Rod at Bottom." Within one second, the indication returned to normal. Procedure 1BVS 1.3.3-1 required that the bank position as indicated on DRPI must be within 12 steps of the demand position shown on the main control board step counters or the reactor trip breakers must be opened immediately. Under this procedural requirement, a manual reactor trip was initiated. 1BVS 1.3.3-1 and 1BOS 10.5-1 were exited and a work request to trouble shoot the problem was initiated. All rods inserted into the core. (This statement satisfies ComEd's commitment to NRC Bulletin 96-01 for reporting post trip rod insertion.).

This event is reportable under 10 CFR 50.73 (a)(2)(iv) for any event or condition that resulted in a manual or automatic actuation of any engineered safety feature (ESF), including the reactor protection system (RPS).





LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
BYRON NUCLEAR POWER STATION	05000454	96	010	00	3 OF 3

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

C. CAUSE OF EVENT:

During the trouble shooting activities it was determined that the detector encoder card for rod F-06 was defective. The card was replaced. The new card was tested and indication for rod F-06 was normal.

D. SAFETY ANALYSIS:

There was no safety consequence for this event. The rods were always within 12 steps of the demand indication. The failed circuit card gave an erroneous indication for rod F-06. The reactor trip breakers were opened in accordance with the surveillance procedure and all rods inserted as expected. It was determined that the procedural requirement in 1BVS 1.3.3-1 to open the reactor trip breakers when the disagreement between DRPI and demand position indication is greater than 12 steps is more restrictive than Technical Specification requirements. This limits the ability to trouble shoot problems that may occur during DRPI operability testing. So this requirement was changed to agree with the Technical Specification requirements.

E. CORRECTIVE ACTIONS:

The defective detector encoder card was replaced.

The surveillance requirement to open the reactor trip breakers when DRPI and the demand position indication differ by more than 12 steps was revised to agree with the Technical Specification for DRPI operability testing.

The surveillance was successfully completed.

F. RECURRING EVENTS SEARCH AND ANALYSIS:

A review of Byron events found four failures of detector encoder cards in the last five years.

G. COMPONENT FAILURE DATA:

<u>MANUFACTURER</u>	<u>NOMENCLATURE</u>	<u>MODEL NUMBER</u>	<u>MFG PART NUMBER</u>
Westinghouse	Circuit Board	N/A	1047F28G01

