

Commonwealth Edison Company  
Braidwood Generating Station  
Route #1, Box 84  
Braceville, IL 60407-9619  
Tel 815-458-2801

**ComEd**

January 3, 1996  
BW/96 0002


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

Gentlemen:

The enclosed Licensee Event Report from Braidwood Generating Station is being transmitted in accordance with the requirement of 10 CFR 50.73(a)(2)(iv), which requires a 30-day written report.

This report is number 95-017-00, Docket No. 50-456.

Cordially,

  
P. J. Tulon  
Station Manager  
Braidwood Nuclear Station

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Encl: Licensee Event Report No. 456-95-017-00

cc: NRC Region III Administrator  
NRC Resident Inspector  
INPO Records Center  
ComEd Distribution Center  
I.D.N.S.  
I.D.N.S. Resident Inspector

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NRC FORM 366 (5-92)		U.S. NUCLEAR REGULATORY COMMISSION			APPROVED BY OMB NO. 3150-0104 EXPIRES 5/31/95				
<b>LICENSEE EVENT REPORT (LER)</b>									
(See reverse for required number of digits/characters for each block)									
FACILITY NAME (1) Braidwood Unit 1					DOCKET NUMBER (2) 05000456			PAGE (3) 1 OF 4	
TITLE (4) Manual Reactor Trip inserted during Rod Control System testing following receipt of an Urgent Failure alarm on Shutdown Bank 'E'.									
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
12	07	95	95	-- 017 --	00	01	05	96	FACILITY NAME
OPERATING MODE (9)		3	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)						
POWER LEVEL (10)		08	20.402(b)		20.405(c)	<input checked="" type="checkbox"/>	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	
			20.405(a)(1)(iii)		50.73(a)(2)(i)		50.73(a)(2)(viii)(A)	(Specify in Abstract below and in Text, NRC Form 366A)	
			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 M. Olson, Root Cause Team						TELEPHONE NUMBER (Include Area Code) (815) 458-2801 x2028			
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
X	RBK	IPWSUP	W120	NO					
SUPPLEMENTAL REPORT EXPECTED (14)									
YES (If yes, complete EXPECTED SUBMISSION DATE).					X	NO		EXPECTED SUBMISSION DATE (15)	
									MONTH DAY YEAR
ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)									
<p>Unit 1 was in Mode 3 at Normal Operating Temperature and Pressure. The Rod Control System [RBK] was being tested in preparation for Rod Drop Testing. After Shutdown Bank 'E' was withdrawn 50 steps, a Rod Control Urgent Failure occurred on power cabinet SCDE. This prevented the rods from being manually stepped. After discussion with the Shift Engineer and System Engineer, the decision was made to open the Reactor Trip Breakers to allow the rods to fully insert into the core. This was not required by any Technical Specifications but was done as a conservative measure to allow the Rod Control System to be repaired. At 0240 CST the Reactor Trip Breakers were opened. All Shutdown Bank 'E' Rods were verified to be fully inserted as designed following the manual Reactor Trip. An expected response from the manual Reactor Trip was a Feedwater Isolation which did occur as designed and was subsequently reset. At 0421 EST, the appropriate NRC notification was made via the ENS phone system pursuant to 10CFR50.72(b)(2)(ii).</p>									

**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 INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), 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.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
Braidwood Unit 1	05000456	YEAR 95	SEQUENTIAL NUMBER -- 017 --	REVISION NUMBER 00	2 OF 4

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

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

UNIT: Braidwood Unit 1                      EVENT DATE: 12/07/95  
 EVENT TIME: 0240  
 MODE: 3                      RX POWER: 0%  
 RCS [AB] TEMPERATURE/PRESSURE: NOT/NOP

**B. DESCRIPTION OF EVENT:**

There were no systems or components inoperable at the beginning of this event that contributed to the severity of the event.

On 12/07/95, in preparation for performing pre-startup rod drop tests, the Reactor Trip Breakers were closed, Shutdown Margin verified satisfactory for withdrawal of Shutdown Bank Control Rods, and 1BwOS 10.5-1, Special Test Exception Rod Position Indication Surveillance, entered.

At 0214, while withdrawing the first bank of Shutdown Rods, Shutdown Bank 'E' (SBE), a Rod Control Urgent Failure Alarm was received. SBE had been withdrawn a total of 50 steps. The Shift Engineer (SRO Licensed) and cognizant System Engineer (Non-Licensed) were immediately notified of the condition. Because it could not be immediately determined how long the process of troubleshooting the Rod Control problem would take, the decision was made to manually open the Reactor Trip Breakers and allow the SBE rods to re-insert to 0 steps.

At 0240 the Reactor Trip Breakers were opened by actuating a manual Reactor Trip from the Control Room. All systems responded as designed to the Manual Reactor Trip signal and all SBE rods re-inserted to the bottom of the core position.

Subsequent investigation revealed the Urgent Failure had occurred in the Power Cabinet for Shutdown Banks C, D, and E. The failure detector card for cabinet SCDE had indicator DS5 lit, indicating a movable regulation failure had been detected. The Urgent Failure Alarm was reset and a recorder hooked up to monitor test points on the movable regulation card.

By 0813, the Reactor Trip Breakers had been reclosed and a Heightened Level of Awareness meeting held for troubleshooting the Rod Control Circuitry. Shutdown Bank 'E' was then withdrawn 60 steps and re-inserted while monitoring test points. The initial problem did not recur. The alarm circuit of the failure detector card was identified as suspect by the System Engineer and the failure detector card was subsequently replaced. The Rod Control System was returned to operation and Shutdown Bank 'E'

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

**B. DESCRIPTION OF EVENT (continued):**

withdrawn to the full out position (231 steps) and reinserted normally with no further problems noted.

The suspect failure detector card was sent to the Instrument Maintenance Department for further analysis. As of the date of this report, the exact failure mode had not yet been determined. The System Engineer has identified any one of three transistors as suspect.

The appropriate NRC notification was made via the ENS phone system at 0421 EST pursuant to 10CFR50.72(b)(2)(ii).

This event is being reported pursuant to 10CFR50.73(a)(2)(iv) - Any event or condition that resulted in manual or automatic actuation of any Engineered Safety Feature, including the Reactor Protection System.

**C. CAUSE OF EVENT:**

The manual Reactor Trip was initiated as a conservative action resulting from the Urgent Failure Alarm which locked up the Shutdown Bank 'E' Control Rods at a height of 50 steps. There are no administrative nor Technical Specification requirements to open the Reactor Trip Breakers in this situation.

**D. SAFETY ANALYSIS:**

This event had no effect on the safety of the plant or the public. All systems operated as designed upon receipt of the Rod Control Urgent Failure and following actuation of the manual Reactor Trip signal.

There was no reduction in the margin of safety as defined in Technical Specifications since adequate Shutdown Margin was maintained and all rods remained trippable at all times. At the time of the Urgent Failure, RCS boron concentration was greater than 1670 ppm as confirmed by samples of the RCS at 0100 and again at 0619 that morning. All other Control and Shutdown Bank Rods remained in the fully inserted position during the testing of SBE and all rods within that bank remained aligned within plus or minus 12 steps.

**E. CORRECTIVE ACTIONS:**

The suspect failure detector card was replaced in the Power Cabinet for Shutdown Banks C, D, and E and the Rod Control System returned to operation. Subsequent operations revealed no further problems.

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Braidwood Unit 1	05000456	95	-- 017--	00	4 OF 4

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

**F. PREVIOUS OCCURRENCES:**

Eight previous occurrences of Rod Control Urgent Failures were identified at Braidwood Station. One was similar in nature in that it involved a suspected failure in the alarm circuit of a Failure Detector Card.

On May 16, 1995, with Unit 2 operating at 100% reactor power, an Urgent Failure occurred on Power Cabinet SCDE while performing the Rod Operability Surveillance. The Failure Detector Card indicated that a lift regulation failure had been detected. Subsequent investigation and discussions with the vendor (Westinghouse) showed that a spurious alarm had been generated from the alarm circuitry of the Failure Detector Card. The card was replaced and Rod Control functioned normally. This was not a reportable event.

As a followup to the previous failure, all Failure Detector Cards on Unit 1 were cleaned and inspected by Westinghouse personnel during the latest refueling outage (A1R05).

**G. COMPONENT FAILURE DATA:**

<u>MANUFACTURER</u>	<u>NOMENCLATURE</u>	<u>MODEL</u>	<u>MFG PART NO.</u>
Westinghouse	Failure Detector Card	N/A	6050-D15G01