

Commonwealth Edison Company
Braidwood Generating Station
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May 16, 2000
BW000057

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Braidwood Station, Unit 2
Facility Operating License No. NPF-77
NRC Docket No. STN 50-457

Subject: Submittal of Licensee Event Report Number 2000-003-00

10 CFR 50.73(a) requires a Licensee Event Report (LER) to be submitted within 30 days after discovery of the event. The purpose of this letter is to provide the subject LER in accordance with 10 CFR 50.73(a)(2)(iv) by the required May 16, 2000 submittal date.

Should you have any questions concerning this letter, please contact Mr. T. W. Simpkin, Regulatory Assurance Manager, at (815) 458-2801, extension 2980.

Respectfully,

A handwritten signature in black ink, appearing to read "T. Tulon", is written over the typed name.

Timothy J. Tulon
Site Vice President
Braidwood Station

Attachment: Braidwood Station, Unit 2 LER Number 2000-003-00

cc: Regional Administrator - NRC Region III
NRC Senior Resident Inspector - Braidwood Station

IE22

NRC FORM 366 (4-95)				U.S. NUCLEAR REGULATORY COMMISSION				APPROVED BY OMB NO. 3150-0104 ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS 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 (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT				EXPIRES 04/30/98	
LICENSEE EVENT REPORT (LER)													
FACILITY NAME (1) Braidwood, Unit 2								DOCKET NUMBER (2) STN 05000457				PAGE (3) 1 of 4	
TITLE (4) Manually Opened Reactor Trip Breakers Due to Detector / Encoder Card Failure In Digital Rod Position Indication System													
EVENT DATE (5) MONTH DAY YEAR			LER NUMBER (6) YEAR SEQUENTIAL NUMBER REVISION NUMBER			REPORT DATE (7) MONTH DAY YEAR			OTHER FACILITIES INVOLVED (8) FACILITY NAME DOCKET NUMBER				
04 16 2000			2000 - 003 - 00			05 16 2000			FACILITY NAME DOCKET NUMBER				
OPERATING MODE (9) 3		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)											
POWER LEVEL (10) 0.0													
		<input type="checkbox"/> 20.2201(b)		<input type="checkbox"/> 20.2203(a)(3)(i)		<input type="checkbox"/> 50.73(a)(2)(iii)		<input type="checkbox"/> 73.71(b)					
		<input type="checkbox"/> 20.2203(a)(1)		<input type="checkbox"/> 20.2203(a)(3)(ii)		<input checked="" type="checkbox"/> 50.73(a)(2)(iv)		<input type="checkbox"/> 73.71(c)					
		<input type="checkbox"/> 20.2203(a)(2)(i)		<input type="checkbox"/> 20.2203(a)(4)		<input type="checkbox"/> 50.73(a)(2)(v)		<input type="checkbox"/> OTHER					
		<input type="checkbox"/> 20.2203(a)(2)(ii)		<input type="checkbox"/> 50.36(c)(1)		<input type="checkbox"/> 50.73(a)(2)(vii)		(Specify in Abstract below and in Text, NRC Form 366A)					
		<input type="checkbox"/> 20.2203(a)(2)(iii)		<input type="checkbox"/> 50.36(c)(2)		<input type="checkbox"/> 50.73(a)(2)(viii)(A)							
		<input type="checkbox"/> 20.2203(a)(2)(iv)		<input type="checkbox"/> 50.73(a)(2)(i)		<input type="checkbox"/> 50.73(a)(2)(viii)(B)							
		<input type="checkbox"/> 20.2203(a)(2)(v)		<input type="checkbox"/> 50.73(a)(2)(ii)		<input type="checkbox"/> 50.73(a)(2)(x)							
LICENSEE CONTACT FOR THIS LER (12)													
NAME Mike Hoffman, Root Cause Investigator								TELEPHONE NUMBER (Include Area Code) (815) 458-2801 x-2760					
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)													
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX			
X	AA	DET/ECD	W120	N									
SUPPLEMENTAL REPORT EXPECTED (14)													
X YES (If yes, complete EXPECTED SUBMISSION DATE).					NO		EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR		
									06	23	2000		

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

While withdrawing Shutdown Bank B rods during a Braidwood Unit 2 restart on 4/16/2000, the operator noted Digital Rod Position Indication (DRPI) for rod G13 jump from 18 to 210 steps. With the plant in Mode 3 and with the reactor trip breakers closed, the operator declared DRPI for rod G13 inoperable and immediately opened the reactor trip breakers.

Investigation of the problem determined that either the Data A or Data B Detector / Encoder Card for rod G13 was the source of the problem. Instrument Maintenance Department (IMD) personnel replaced both cards and a partial DRPI operability surveillance was run to verify rod G13 was operable.

Corrective actions included replacing the Data A Detector / Encoder Card a second time for rod G13, and re-performance of the operability surveillance prior to Unit start-up. Other Corrective actions to be taken include: review of TRM requirements for possible changes in the requirements for opening the reactor trip breakers, scheduling of periodic DRPI Dynamic Card Testing and conduct of an Effectiveness Review.

LICENSEE EVENT REPORT (LER)

TEXT CONTINUATION

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Braidwood, Unit 2	STN 05000457	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 of 4
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TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

This event is being reported pursuant to 10 CFR 50.73(a)(2)(iv).

Plant Conditions Prior to Event:

Unit: Unit 2 Event Date: 4/16/2000 Event Time: 0416 hours
MODE: MODE 3 Reactor Power: 0.0 percent RCS [AB] Temperature: 557 degrees F.
RCS [AB] Pressure: 2238 psig

B. Description of Event:

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

On 4/15/2000, Braidwood Unit 2 tripped due to a negative rate trip caused by a dropped rod. Subsequent troubleshooting identified a blown fuse in the Stationary Gripper circuit (AA). The fuse was replaced and a Unit 2 restart was commenced at 0400 on 4/16/2000. While withdrawing Shutdown Bank B (SBB) rods (JD), the operator noted Digital Rod Position Indication (DRPI) (IU) for rod G13 jump from 18 to 210 steps. With the plant in Mode 3 and with the reactor trip breakers (JD) closed, the operator declared DRPI for rod G13 inoperable and immediately opened the reactor trip breakers. Technical Requirements Manual (TRM) Limiting Condition for Operation (TLCO) 3.1.g was entered and a 4 hour ENS notification was made due to manually opening the reactor trip breakers.

Initial investigations and discussions with operators could not isolate the problem to either DRPI Data A or Data B. The Instrument Maintenance Department (IMD) commenced troubleshooting which resulted in replacing both the Data A and Data B Detector / Encoder (D/E) cards associated with rod G13. The removed D/E cards were then statically tested with no failures or problems being observed. However, the static test box is limited in its ability to detect intermittent problems or degraded conditions, but it is the only means presently available to test the D/E cards.

The reactor trip breakers were closed and a partial DRPI operability surveillance was completed for the SBB rods only, and the results were satisfactory. A complete DRPI operability surveillance with Control Rod Drive Mechanism (CRDM) (AA) timing to verify operation of the Rod Control and DRPI systems was performed satisfactorily prior to restart. During these surveillances the operators again noted rod G13 was operating differently from the other SBB rods. While all other SBB rods moved out to 12 steps (by DRPI), rod G13 lagged behind at 6 steps. Although this is still within the acceptable TRM limits, SBB rods were reinserted. IMD replaced the Data A Detector / Encoder Card for rod G13 a second time to correct the indication problem. The removed D/E card was

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

satisfactorily tested on the static test box. DRPI Operability testing was completed satisfactorily (for SBB rods) and the Unit restart was completed.

This event is being reported pursuant to 10 CFR 50.73(a)(2)(iv), "Any event or condition that resulted in a manual or automatic actuation of any Engineered Safety Feature (ESF), including the Reactor Protection System."

C. Cause of Event:

The root cause report for this event is not complete. Investigation of the problem suggests the cause to be a failure in the DRPI System. This failure appears to have been the Data A Detector / Encoder Card for rod G13. If upon completion of the root cause report, changes are necessary for the content of this report or the Corrective Actions, a supplemental License Event Report will be submitted.

D. Safety Analysis:

There were no safety consequences associated with this event. No automatic actions are initiated by the failure of the DRPI System. Manual actions which may be prompted by the failure of the DRPI System are not credited by the accident analyses. Additionally, automatic actions assumed by the analyses are not affected by the failure of the DRPI System. In Mode 3, the DRPI System provides control rod indication to support rod withdrawal in preparation for reactor criticality.

There was no Safety System Functional Failure as a result of this event.

E. Corrective Actions:Immediate Corrective Actions:

- TLCO 3.1.g was entered and the reactor trip breakers were manually opened.
- A 4 hour ENS notification was made due to manually opening the reactor trip breakers.
- IMD personnel performed troubleshooting and replaced both the Data A and Data B Detector / Encoder Cards for shutdown rod G13.

Long Term Corrective Actions

- The Data A Detector / Encoder Card was replaced a second time for rod G13 and the operability surveillance was re-performed prior to Unit start-up.
- Scheduling of periodic DRPI Dynamic Card Testing.
- Conduct of an Effectiveness Review.
- Review of TRM requirements for possible changes in the requirements for opening the Reactor Trip Breakers

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F. Previous Occurrences:

LER Number

Title

97-02-02. Manually Opened Reactor Trip Breakers Due to Decoder and Encoder Control Card Failure.

This LER (2000-002-00) is a repeat occurrence of LER 97-02-00. Corrective actions pertaining to dynamic card testing remain open for LER 97-02-00.

G. Component Failure Data:

Manufacturer

Nomenclature

Model

Mfg. Part Number

Westinghouse

Standard Decoder & Encoder
Control Card

GO1

1468F06G01