



Commonwealth Edison
Braidwood Nuclear Power Station
Route #1, Box 84
Braceville, Illinois 60407
Telephone 815/458-2801

October 12, 1989
BW/89-1199

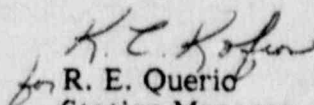
U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Dear Sir:

The enclosed Licensee Event Report from Braidwood Generating Station is being transmitted to you in accordance with the requirements of 10CFR50.73(a)(2)(ii) which requires a 30 day written report.

This report is number 89-010-00; Docket No. 50-456.

Very truly yours,

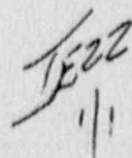

for R. E. Querio
Station Manager
Braidwood Nuclear Station

REQ/AJS/jfe
(7126z)

Enclosure: Licensee Event Report No. 89-010-00

cc: NRC Region III Administrator
NRC Resident Inspector
INPO Record Center
CECo Distribution List

8910240246 891013
PDR ADOCK C5000456
S PDC



LICENSEE EVENT REPORT (LER)

Form Rev 2.0

Facility Name (1)

Docket Number (2)

Page (3)

Braidwood 1

0151010141516 1 of 0 4

Title (4) Reverse Operation of Hydrogen Analyzer Containment Isolation Valve due to a Preservice Wire Labeling Error.

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(s)	Docket Number(s)			
01	09	58	98	01101	00	11	03	89	None	0151010141516			

OPERATING MODE (v)

5

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)

POWER LEVEL (10)	0	0	0	20.402(b)	20.405(c)	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)	X 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	TELEPHONE NUMBER
Gary Bal, Technical Staff Group Leader	AREA CODE 81154581-21801

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	K	N	I	S	V	V	0	3	0

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)

At 0400 on September 15, 1989, the Leakage Rate Surveillance (LLRT) for 1PS229B, OB Hydrogen Analyzer Containment Isolation Valve, was initiated. The measured leakrate was larger with the valve indicating closed. The correct valve stem travel could not be made by direct observation because the valve and coil assembly are encapsulated. Several additional LLRTs were performed on the valve. Each time the results indicated reverse operation, but were inconclusive. The wiring was checked and found to be correct. The valve was removed and bench tested. The leads from the encapsulated coil were found to be improperly labeled. The valve also drifted to mid-position when the closed coil was deenergized. No work activities were identified that would have required re-labeling. The labels on the leads were compared to a new coil assembly. The new labels were similar but had a plastic coating which 1PS229B did not have. The failure of the valve to remain in the closed position when the closing coil was deenergized made detection of the error virtually impossible during normal operation. An investigation to determine the mode of failure and when the mis-labeling occurred is still in progress. 1PS229B is being replaced with a different model valve which will be tested in accordance with the Station modification program. There have been no previous occurrences.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

Form Rev 2.0

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)						Page (3)		
		Year	Sequential Number	Revision Number						
Braidwood 1	0 5 0 0 0 4 5 6	3 9	- 0 1 0	-	0 0	0 0	0 2	Of	0 4	

TEXT Energy Industry Identification System (EIIIS) codes are identified in the text as [XX]

A. PLANT CONDITIONS PRIOR TO EVENT:

Unit: Braidwood 1; Event Date: September 15, 1989; Event Time: 0400;
 Mode: 5 - Cold Shutdown; Rx Power: 0%;
 RCS [AB] Temperature/Pressure: Ambient

B. DESCRIPTION OF EVENT:

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

Local Leakrate Testing (LLRT) surveillance on the Process Sampling Containment Isolation Valves (PS) [KN] in accordance with Braidwood Technical Staff Surveillance Procedure, 1BWS 6.1.2.d-1.8 was in progress.

September 16, 1989:

At approximately 0400 the surveillance for 1PS229B, 0B Hydrogen Analyzer Containment Isolation Valve, was initiated. During the performance of this surveillance, it was noted that the valve appeared to be operating improperly. The measured leakrate was larger with the valve indicating closed than with it indicating open.

The discrepancy was discussed with the Technical Staff Engineer (STE) (non-licensed) in charge of LLRT. It was determined that the surveillance was properly performed. Based on this information, the appropriate NRC notification via the ENS phone system was made at 1522 pursuant to 10CFR50.72(b)(2)(i).

September 19 to October 9, 1989:

Due to the design of the valve, correct valve stem travel could not be made by direct observation. The valve is operated by electro-magnetic coils and both the stem and the coil's are encapsulated. Several additional LLRTs were performed on the valve. Each time the results tended to indicate reverse operation, but were not conclusive. The wiring was checked and found to be correct.

The valve was removed and bench tested in the maintenance shop. The test indicated that the leads from the encapsulated coil were improperly labeled. This caused the valve to operate in reverse. The valve passed air freely when the closing coil, (leads labeled 1 and 2) were energized. When the opening coil was energized, (leads labeled 3 and 4) the valve seemed to isolate flow. When the opening coil was deenergized, air flow increased significantly but remained less than amount allowed when the closing coil was energized. In normal service the coils are only energized during actual stem movement.

The manufacturer, Valcor Engineering Corporation was contacted for assistance.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION														Form Rev 2.0	
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		Year	Sequential Number	Revision Number											
Braidwood 1	0 5 0 0 0 4 5 6	8	9	-	0	1	0	-	0	0	0	3	OF	0	4
TEXT Energy Industry Identification System (EIIIS) codes are identified in the text as [XX]															

B. DESCRIPTION OF EVENT: (Continued)

October 9, 1989:

The manufacturer provided the station with expected resistance values for the coils. The coils were immediately tested with the following results:

As Labeled	Expected	As Found
1-2 (close)	160 to 170 ohms	148.8 ohms
3-4 (open)	145 to 155 ohms	162.4 ohms

Based on the results of the numerous tests the following have been concluded:

1. The coil leads were labeled backwards.
2. The change in valve position when the closing coil was deenergized is a component failure. This failure made detection of the error virtually impossible in normal service.

Operator actions neither increased nor decreased the severity of the event and plant conditions remained stable.

This event is being reported pursuant to 10CFR50.73(a)(2)(ii) - Any event or condition that resulted in the condition of the nuclear power plant, including its principal safety barriers being seriously degraded.

C. CAUSE OF EVENT:

The cause of this event was a preservice error. The coils were improperly labeled either during manufacturing or installation. A review of the work request history for the 1PS229B did not identify any work activities that would have required re-labeling the leads. The labels on the leads were compared to a new coil assembly in the Braidwood Storeroom. The labels looked similar however, upon closer inspection, it was determined that the labels on the new assembly had a plastic coating. The labels on the 1PS229B did not have a plastic coating. The investigation to determine where and when the mis-labeling occurred is still in progress.

Contributing to this event was component failure. The failure of the valve to remain in the closed position when the closing coil was deenergized made detection of the error virtually impossible during normal operation. An investigation to determine the mode of failure is in progress.

D. SAFETY ANALYSIS:

This event had no effect on the safety of the plant or the public. The OB Hydrogen Analyzer piping is a closed loop that provides a flowpath to the analyzer from containment and discharges back to the containment.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION														Form Rev 2.0									
FACILITY NAME (1)		DOCKET NUMBER (2)				LER NUMBER (5)						Page (3)											
						Year		Sequential Number		Revision Number													
Braidwood 1		0	5	0	0	0	4	5	6	8	9	-	0	1	0	-	0	0	0	4	OF	0	4
TEXT Energy Industry Identification System (EIIS) codes are identified in the text as [XX]																							

E. CORRECTIVE ACTIONS:

An investigation to determine where and when the mis-labeling occurred is still in progress. The investigation will be tracked to completion by action item 456-200-89-14901. Should any additional information concerning where and/or when the mis-labeling occurred be determined, as well as any additional corrective actions, it will be documented in a supplement to this report.

An investigation to determine the failure mode of the valve is in progress. The investigation will be tracked to completion by action item 456-200-89-14902. Should any additional information concerning the mode of failure be determined, as well as any additional corrective actions, it will be documented in a supplement to this report.

The 1PS229B is being replaced with a different model valve during the current refueling outage. The replacement valve will be tested in accordance with the Station modification program. There are five similar Hydrogen Analyzer Containment Isolation Valves on Unit 1. These valves are also being replaced. This will be tracked to completion by action item 456-200-89-14903.

There are six similar Hydrogen Analyzer Containment Isolation Valves on Unit 2. The LLRT's for these valves were reviewed. Based on this review it has been concluded that these valves are operating correctly. These valves will be replaced as part of a modification currently scheduled for the first refuel outage. This will be tracked to completion by action item 456-200-89-14904.

F. PREVIOUS OCCURRENCES:

None.

G. COMPONENT FAILURE DATA:

Manufacturer	Nomenclature	Model Number	MFG Part Number
Valcor Eng Corp	Isolation Valve	V526-5395-1	183160001