

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1): Braidwood Unit 1

DOCKET NUMBER (2) 05000456

PAGE (3)
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TITLE (4) Make-up fan 0VC03CA failed to auto-start as a result of an apparent Motor Control Center (MCC) motor starter malfunction.

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
10	04	1998	98	005	00	11	03	98	Braidwood Unit 2	05000457
									FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9) N/A
POWER LE/EL (10) 000
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)

<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 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 checked="" type="checkbox"/>	50.73(a)(2)(I)(B)	<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: Jim Kuchenbecker, System Engineering Supervisor
TELEPHONE NUMBER (Include Area Code): (815) 458-2801 Extension 2243

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
B	ED	MSTR	W120	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) X NO
EXPECTED SUBMISSION DATE (15)

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

At 1933 on 10/4/98 with Unit 1 defueled and Unit 2 at 100% power, an Engineered Safety Feature (ESF) signal was initiated due to a high radiation spike from process radiation monitor OPR31J. This placed Train A of the Control Room Ventilation System (VC) in the emergency recirculation mode. All automatic features functioned as designed except for the Train A VC Make-up fan which failed to start. The fan was subsequently started manually but declared "inoperable" due to the failed automatic start. Because a "Limiting Condition of Operation Exception Requirement" had been entered for the B Train of VC for planned maintenance, LCO 3.0.3 was entered for Unit 2.

The cause of the make-up fan failure was analyzed and determined to be the result of the fan's Motor Control Center (MCC) motor starter failing to actuate. Following the high radiation spike, the process radiation monitor was inspected, its filter was replaced, and other radiation monitors were evaluated to assess whether abnormal radiological conditions were detected (the conditions were determined to be normal). Applicable LCOARs were exited at 2123 when a partial surveillance on Train A of the VC system was successfully completed, verifying the operability of the make-up fan. Although troubleshooting efforts were unable to duplicate the failure and subsequent attempts to start the make-up fan were successful, the motor starter was replaced on 10/15/98.

It was determined that this incident had no safety impact based on the make-up fan's capability of being started manually after a minimal delay. This incident is being reported pursuant to 10CFR50.73(a)(2)(i)(B).

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LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
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Braidwood Unit 01	05000456	98	005	00	2 of 4

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

A. PLANT CONDITIONS PRIOR TO EVENT:

Unit(s): 01 / 02	Event Date: 10/4/98	Event Time: 1933 Hours
Reactor Mode(s):	Power Level(s):	RCS [AB] Temp./Press.
Unit 1: defueled	Unit 1: 000 %	Unit 1: Not applicable
Unit 2: 1	Unit 2: 100 %	Unit 2: 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.

At 1933 on 10/4/98, an Engineered Safety Feature (JE) (ESF) signal was initiated due to a high radiation spike from process radiation monitor OPR31J (Control Room Outside Air, Train A Radiation Monitor). This automatically placed Train A of the Control Room Ventilation System (VI) (VC) in the emergency recirculation mode. Unit 1 was defueled and Unit 2 was operating at 100% power at the time of the event.

Following the signal, procedure BwAR 2-OPR31J, "Grid 2 OPR31J Main Control Room OPA 231, OPB 131, OPC 331 Out Air In OA," was used to verify that the affected ventilation systems responded as required. It was determined that all automatic features functioned as designed except for the Train A VC Make-up fan. This fan failed to automatically start and its associated dampers did not realign. The fan was subsequently started manually but declared "inoperable" due to the failed automatic start. Because Limiting Condition of Operation Action Requirement (LCOAR) BwOS 7.6-1, "LCOAR Plant Systems Control Room Ventilation System Tech Spec LCO 3.7.6," had been previously entered for the B Train of VC due to its chiller unit being inoperable for planned maintenance, LCO 3.0.3 was entered for Unit 2 and preparations were started for a unit shutdown.

The filters in the suspect radiation monitor were surveyed and changed by Radiation Protection personnel. The survey results and subsequent readings taken from the monitor indicated normal levels. In addition, radioactivity levels recorded by other VC radiation monitors also determined that no abnormal radiological conditions were present. At 2038, following the filter change-out and review of radiological conditions, Operations exited LCOAR 3.3.1-1a and returned the OPR31J skid to its normal alignment.

Operations then proceeded to initiate Surveillance BwOS 3.7.10.3, "Control Room Ventilation Emergency Make-up System 18 Month Surveillance," (partial surveillance) for the OPR31J monitor. This was successfully completed at 2123 demonstrating the operability and auto-start capability of the Train A VC System. LCOARS 3.0.3 and 7.6-1a were exited following this activity. Due to the expeditious restoration of plant equipment, the unit shutdown was never commenced.

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This event is being reported pursuant to 10CFR50.73(a)(2)(i)(B), "Any event or condition prohibited by the plant's Technical Specifications."

C. CAUSE OF EVENT:

The cause of the high radiation spike could not be identified. The cause of the make-up fan failure was determined to be the result of the fan's Motor Control Center (MCC) motor starter failing to actuate. Further analyses conducted by personnel at the Central Testing, Engineering and Materials Facility (CTEAM) supported the conclusion that the probable cause of the motor starter's failure was due to internal binding of the motor starter.

D. ASSESSMENT OF SAFETY CONSEQUENCES:

This event had no impact on nuclear safety. Although the make-up fan failed to automatically start, it was manually started after a minimal delay. Filtration was available from the redundant train, which per system design is manually initiated upon failure of the operating train. This action was not pursued due to the lack of cooling associated with that train, the spurious nature of the initiating signal, and the expeditious manual start of the OA Make-up Fan. Had this event occurred under more limiting circumstances, for example, the presence of an actual high radiation condition, the resulting impact on nuclear safety would be unchanged. This is due to the fact that system operation was manually initiated in a prompt manner and the redundant train's filtration capability was available. Manual actions would have been required to either start the failed train or establish means to maintain the temperature in the control room within limits.

E. CORRECTIVE ACTIONS:

In response to the event, Operations initiated procedures and action statements as required to ensure all automatic features functioned as designed and problems were resolved as required. A partial surveillance was successfully completed which demonstrated the operability of the Train A VC System.

Although troubleshooting efforts were unable to duplicate the failure and subsequent attempts to start the make-up fan were successful, further troubleshooting indicated a potential failure of the motor starter which was subsequently replaced on 10/15/98.

Procedure BwHS TRM 3.8.a.3-1, "Surveillance for Inspection and Testing of 480 Volt Motor Control Center (MCC) Draw-out Units," will be enhanced to include a visual inspection of the motor starter. This action will be tracked to completion by NTS item 456-130-98-SCAQ0000501.

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F. PREVIOUS OCCURRENCES:

LER NUMBER 96-002 (Unit 1)
TITLE Loss of Operability of Both Trains of Control Room Ventilation due to a Personnel Error

The corrective actions taken in response to the 1996 incident would not have prevented the recent occurrence. The problem referenced in the above Licensee Event Report was associated with a personnel error. With the A Train of VC in LCOAR for chiller repair work, the B train was inadvertently made inoperable. An individual was performing work on the B train using a new work process and a breaker was temporarily grounded which caused the VC dampers to realign and prevented the emergency make-up fan from automatically starting.

G. COMPONENT FAILURE DATA:

<u>MANUFACTURER</u>	<u>----- NOMENCLATURE</u>	<u>MODEL</u>	<u>MFG. PART NO.</u>
Westinghouse	-----Motor Starter	A200M27	Style 66E349