

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (IMRB 2714, U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104, OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503).

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
MONTICELLO NUCLEAR GENERATING PLANT	05000 - 263	1 OF 5

TITLE (4)
Main Control Room Emergency Filtration Train Outside Design Basis Caused by In-leakage Across Inlet Dampers

EVENT DATE (5)			LER NUMBER (6)			REPORT NUMBER (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
10	27	93	93	010	00	11	23	93		05000

OPERATING MODE (9)	POWER LEVEL (10)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 4: (Check one or more) (11)			
N	100	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)(vi)	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)	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)		TELEPHONE NUMBER (include Area Code)
NAME	Dirk Foster, System Engineer	(612) 295-1053

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)										
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	
E	VI	DMP	Quality Air Design(Q020)	No						

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED SUBMISSION DATE (15)		
YES	NO	XX	NO			
(If yes, complete EXPECTED SUBMISSION DATE)						

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

At 1500 on October 27, 1993, 1300 hours, while operating at 100% rated thermal power, both trains of the Control Room Ventilation-Emergency Filtration Train (CRV-EFT) system were declared inoperable. It was determined after the completion of an evaluation that the in-leakage across the outside air inlet isolation dampers could exceed the amount assumed in the control room operator radiation dose and toxic chemical calculations. The cause of this event was failure to identify and establish all the inspections/tests needed to insure that system operability would be maintained. A contributing cause was the low priority assigned for completion when it was identified that testing and inspection of the dampers should be performed. Both CRV-EFT trains have been modified to eliminate the outside air in-leakage, a Safety Evaluation was completed, a License Amendment Request to remove the Chlorine detection Technical Specification requirements had been initiated, a review of the Operating Events Tracking System assignments was completed, and Control Room dose and toxic gas calculations were performed. This event will be presented in Engineering Technical Staff Continuing Training, preventive maintenance/test procedures will be developed, and the Operating Experience Assessment process will be revised.

REQUIRED NUMBER OF DIGITS/CHARACTERS
FOR EACH BLOCK

BLOCK NUMBER	NUMBER OF DIGITS/CHARACTERS	TITLE
1	UP TO 46	FACILITY NAME
2	8 TOTAL 3 IN ADDITION TO 05000	DOCKET NUMBER
3	VARIES	PAGE NUMBER
4	UP TO 76	TITLE
5	6 TOTAL 2 PER BLOCK	EVENT DATE
6	7 TOTAL 2 FOR YEAR 3 FOR SEQUENTIAL NUMBER 2 FOR REVISION NUMBER	LER NUMBER
7	6 TOTAL 2 PER BLOCK	REPORT DATE
8	UP TO 18 - FACILITY NAME 8 TOTAL - DOCKET NUMBER 3 IN ADDITION TO 05000	OTHER FACILITIES INVOLVED
9	1	OPERATING MODE
10	3	POWER LEVEL
11	1 CHECK BOX THAT APPLIES	REQUIREMENTS OF 10 CFR
12	UP TO 50 FOR NAME 14 FOR TELEPHONE	LICENSEE CONTACT
13	CAUSE VARIES 2 FOR SYSTEM 4 FOR COMPONENT 4 FOR MANUFACTURER NPRDS VARIES	EACH COMPONENT FAILURE
14	1 CHECK BOX THAT APPLIES	SUPPLEMENTAL REPORT EXPECTED
15	6 TOTAL 2 PER BLOCK	EXPECTED SUBMISSION DATE

**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)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
MONTICELLO NUCLEAR GENERATING PLANT	05000 - 263	93	- 010	- 00	2 OF 5

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

DESCRIPTION

On October 27, 1993, an investigation was conducted to determine the leakage into the Control Room Ventilation-Emergency Filtration Train (CRV-EFT)(EIIS System: VI) from the outside air intake dampers (EIIS Component: DMP). Preliminary engineering evaluation of the results in conjunction with inspection of the dampers concluded that the leakage could be greater than the amount assumed in the Main Control Room radiation and toxic gas calculations. The dampers with excess leakage were:

VD-9051A	V-EAC-14B Outside Air Isolation Damper
VD-9051B	V-EAC-14A Outside Air Isolation Damper
VD-9216A	V-EAC-14A Outside Air Flow Control Damper
VD-9216B	V-EAC-14B Outside Air Flow Control Damper

Both Control Room Ventilation-Emergency Filtration Trains were declared inoperable at 1500 hours on October 27, 1993 and Technical Specification 3.17.B.1.b was entered. This required at least one train to be returned to operable status in 24 hours or be in hot shutdown in the next 12 hours. An inspection of the damper internals revealed degradation of the seating surface gasket material. A blank flange was installed on the "A" train outside air intake at 2200 hours on October 27, 1993. A Safety Evaluation was completed to allow continuous operation of the system with the outside air intake isolated and the blank flanges installed. At 1450 hours on October 28, 1993 the "A" Control Room Ventilation-Emergency Filtration Train was declared operable and was placed in service. Technical Specification 3.17.B.1.a remained applicable with an allowable outage time of 7 days, of which one day had elapsed. A blank flange was installed on the "B" train outside air intake. It was tested and declared operable at 1610 hours on October 29, 1993.

Analyses were performed using the measured outside air in-leakage to determine the effects on control room operator radiation and toxic chemical dose. The calculated dose for radiation was within the GDC 19 limits. The analysis demonstrated that the time to potential control room operator incapacitation from a specific spill of chlorine gas could have the potential to exceed the design limits.

This was a condition outside the design basis of the plant and is reportable per 10CFR50.73(a)(2)(ii).

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CAUSE

The cause of this event was failure to identify and establish all the inspections or tests needed to insure that system operability would be maintained. The Modification process at the time of initial construction of the Control Room Ventilation-Emergency Filtration Train (1980) did not specifically require this identification.

The need for preventive maintenance and periodic leakage measurement of the damper, was identified during assessment of NRC Information Notice 86-076. The actions assigned were given a low priority (based on control room calculations performed at that time which indicated a significant margin for leakage) and were therefore superseded by higher priority issues. Periodic reviews of the assigned actions did not result in upgrading the priorities for the same reasons. This is considered a contributing cause.

ANALYSIS

An analysis demonstrated that the control room radiation dose would be below General Design Criteria 19 standards during a postulated accident with the as-found in-leakage.

Calculations for toxic chemicals (chlorine) indicate that operators would have had 103 seconds to respond with an as-found in-leakage of 425 cubic feet per minute. The design criteria is 120 seconds. Since chlorine is no longer stored on site, the postulated accident is a chemical spill resulting from a trucking accident near the plant. The probability of a toxic chemical release from a trucking accident resulting in control room operator incapacitation to the extent that Part 100 guidelines could be exceeded has been calculated to be less than 4×10^{-8} per year, which is lower than the threshold for credible events required for plant design.

Since the current licensing basis chlorine event is not credible and GDC-19 standards were met, the degraded damper condition was not a significant threat to post accident control room habitability.

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CORRECTIVE ACTIONS

The following actions have been completed:

1. Both Main Control Room Emergency Filtration Systems have been modified to eliminate the outside air in-leakage.
2. A Safety Evaluation was completed to assess the installation of the blank flanges on the inlet of the Main Control Room Emergency Filtration Systems.
3. Main Control Room dose calculations for radiation and toxic chemicals were performed using the in-leakage data.
4. The current Modification process requires specific assessment of necessary preventive maintenance and special tests.
5. An independent review of all Operating Event Tracking System (OETS) assignments which are safety related and had a low priority was completed and appropriate changes made.
6. A License Amendment Request to remove the Technical Specification requirement for Chlorine detection had been initiated.

The following actions will be completed:

1. The lessons learned from this event will be presented in Engineering Technical Staff Continuing Training.
2. Develop improved preventive maintenance and/or test procedures for the Control Room Ventilation-Emergency Filtration Train dampers.
3. The Operating Experience Assessment process will be revised to enhance requirements for establishing and monitoring appropriate follow-up action priorities.
4. Long term corrective actions to address this damper in-leakage concern will be evaluated.

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ADDITIONAL INFORMATIONFailed Component Identification

Manufacturer: Quality Air Design (Q020)

Model: None

VD-9051A	V-EAC-14B Outside Air Isolation Damper
VD-9051B	V-EAC-14A Outside Air Isolation Damper
VD-9216A	V-EAC-14A Outside Air Flow Control Damper
VD-9216B	V-EAC-14B Outside Air Flow Control Damper

Previous Similar Events

LER 90-001, Potential Emergency Filter Train System Inoperability Due to Interaction With Non-Safety Related Equipment, corrective actions specifically addressed the interactions between safety and non-safety related systems and would not have prevented this event.

LER 92-013, Inoperable Fire Barrier Caused by Failure to Perform Surveillance, corrective action specifically address the Appendix R damper requirements and would not have prevented this event.

LER 92-015, Control Room Ventilation and Emergency Filtration System Operation Outside Design Basis Caused by Improper Cable Separation, corrective actions were specific to single failure and cable separation and would not have prevented this event.