

April 30, 1987



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NP-33-85-35 Rev. 2

Docket No. 50-346
License No. NPF-3

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

Gentlemen:

Please note that the transmittal letter dated April 28, 1987 referencing Revision "2" to LER 86-034 was inadvertently attached to the wrong report.

Enclosed is a copy of Revision 2 to Licensee Event Report 86-001 which was submitted on April 28, 1987. The revisions to the report are indicated by a "2" in the left margin of each page.

Please destroy or mark superseded your previous copy of this report and replace with the attached copy.

Yours truly,

A handwritten signature in black ink that appears to read "Louis F. Storz".

Louis F. Storz
Plant Manager
Davis-Besse Nuclear Power Station

LFS/ed

Enclosure

cc: Mr. A. Bert Davis
Regional Administrator
USNRC Region III

Mr. Paul Byron
DB-1 NRC Resident Inspector

8705060139 870430
PDR ADOCK 05000346
S PDR

THE TOLEDO EDISON COMPANY EDISON PLAZA 300 MADISON AVENUE TOLEDO, OHIO 43652

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	Docket Number (2)	PAGE (3)
Davis-Besse Unit 1	0 5 0 0 0 3 4 6	1 OF 0 3

TITLE (4) Service Water Building Ventilation

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 NAMES	DOCKET NUMBER(S)										
1	2	09	8	5	8	6	—	0	0	1	—	0	2	04	2	8	8	7	0 5 0 0 0	0 5 0 0 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following (11))														
POWER LEVEL (10)	5	20.402(b)	20.408(e)	50.73(a)(2)(iv)	73.71(b)											
		20.408(a)(1)(i)	50.73(a)(1)	50.73(a)(2)(v)	73.71(e)											
		20.408(a)(1)(ii)	50.73(a)(2)	50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)											
		20.408(a)(1)(iii)	X 50.73(a)(2)(ii)	50.73(a)(2)(viii)(A)												
		20.408(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)												
		20.408(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)												

LICENSEE CONTACT FOR THIS LER (12)										TELEPHONE NUMBER		
NAME										AREA CODE		
C. Momenee / J. Nicholson, Systems Engineers										41119	214191-1510000	

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)											
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS	

SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)										<input checked="" type="checkbox"/> NO			

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

During the review of the Service Water System conducted as part of the System Review and Test Program committed to the NRC in the Course of Action Report (Serial No. 1182), it was determined that the as-built configuration of the Service Water Pump Room Ventilation System was inadequate to provide the required ventilation design flows.

Although the station has been in Cold Shutdown (Mode 5) since June 9, 1985, this is reportable as a violation of Technical Specification 3.7.4.1 which requires two (2) independent service water trains to be operable in Modes 1, 2, 3 and 4. These conditions have existed since 1983.

Modifications to the ventilation systems have been completed which will ensure that sufficient cooling to the Service Water Pump Room is provided.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO 3150-0104

EXPIRES 8/31/85

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
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TEXT // If more space is required, use additional NRC Form 388A's (17)

Description of Occurrence:

High temperature problems experienced with the Service Water (SW), (BI), pump motors led to an investigation of the Service Water Pump Room Ventilation System (SWPRVS) adequacy. The SWPRVS consists of four (4) propeller fans used to exhaust the pump induced heat loads from the room. The fans per system design are expected to create flows of 24,000 cubic feet per minute (CFM) each. The maximum actual measured flow for one fan running was 12,000 CFM and the minimum measured flow was 1,000 CFM.

This is being reported under 10CFR50.73(a)(2)(i).

Designation of Apparent Cause of Occurrence:

The SWPRVS was modified in 1983 as a result of a design change that upgraded the dilution pump to function as a backup service water pump to meet Appendix R dedicated shutdown criteria.

The east wall between the SW Pump Room and the dilution pump had to be upgraded to a three (3) hour fire wall, which resulted in the closing of the original air inlet to the SW Pump Room. The exhaust fans were installed external to the SW Pump Room within a missile shield on the west side of the pump room. However, shrouding separating the fan suction from the exhaust and backdraft dampers were not called for in the design, allowing most of the air to flow around and through the idle fans. This resulted in only a small amount of air being drawn through the SW Pump Room and limiting the cooling capabilities of the ventilation system.

The root cause of this condition was the lack of an adequate technical review of the modification to the ventilation system including the lack of adequate post modification testing to prove that design flows could be achieved.

Analysis of Occurrence:

Design calculations have shown that the Service Water Pump Room ventilation system was inadequate. Had the heat loads of two operating SW pumps and one Cooling Tower Makeup Pump been produced at a time when outside temperature reached 95 degrees, the fans would not have removed the required amount of heat from the SW Pump Room. This could have resulted in the overheating of one or more SW Pump Motors, possibly degrading the service water cooling capability to other safety related systems.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT If more space is required, use additional NRC Form 368A's (17).

Corrective Action:

Modifications to the ventilation system have been developed and installed under Facility Change Request FCR 84-147 which has improved the cooling and air flow characteristics within the SW Pump Room. Functional testing, including flow measurements, have been performed to confirm the adequacy of the design modifications. These modifications will ensure that the required design air flows necessary to remove the maximum heat load generated within the SW Pump Room are achieved.

A Systems Engineering group has been formed to develop detailed knowledge of each system. These individuals will review all future changes to the system to ensure continued system operability.

Failure Data:

This is the first report of inadequate ventilation in the SW Pump Room. However, other problems caused by the lack of an adequate technical review were reported in LERs 85-022, 85-021, 85-018, and 85-023.

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