

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Davis-Besse Unit 1										DOCKET NUMBER (2) 0 5 0 0 0 3 4 6										PAGE (3) 1 OF 0 3																																																	
TITLE (4) Containment Air Cooler Fan Running Backward																																																																					
EVENT DATE (5) 0 1 0 4 8 6 8 6										LER NUMBER (6) 0 0 7 0 1 1 0 1 5 8 6										REPORT DATE (7) 0 1 0 1 5 8 6										OTHER FACILITIES INVOLVED (8) FACILITY NAMES DOCKET NUMBER(S) 0 5 0 0 0 0																																							
OPERATING MODE (9) 5										THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)																																																											
POWER LEVEL (10) 0 1 0 1 0										20.402(b) 20.405(a)(1)(i) 20.405(a)(1)(ii) 20.405(a)(1)(iii) 20.405(a)(1)(iv) 20.405(a)(1)(v)										20.405(c) 50.36(c)(1) 50.36(c)(2) 50.73(a)(2)(i) 50.73(a)(2)(ii) 50.73(a)(2)(iii)										50.73(a)(2)(iv) 50.73(a)(2)(v) 50.73(a)(2)(vii) 50.73(a)(2)(viii)(A) 50.73(a)(2)(viii)(B) 50.73(a)(2)(ix)										73.71(b) 73.71(c) OTHER (Specify in Abstract below and in Text, NRC Form 366A)																													
LICENSEE CONTACT FOR THIS LER (12)																																																																					
NAME Ed Saputa/J. Stotz															TELEPHONE NUMBER AREA CODE 4 1 1 9 2 1 4 9 1 - 1 5 1 0 1 0																																																						
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																																																																					
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YES (If yes, complete EXPECTED SUBMISSION DATE)																				NO																																																	
ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single space typewritten lines) (16)																																																																					
<p>Containment Air Cooler fan 1-1 was discovered running backward during post modification testing of the fan backdraft dampers. The fan was running backward in slow speed only which is the speed used during LOCA conditions. The cause of the occurrence appears to be a result of swapping two of the three motor leads which resulted in reversing the rotation of the fan. The lack of adequate post maintenance/post modification testing allowed this condition to go undetected. Based on original air balance data for the system the fans were rotating in the proper direction during original plant startup. Therefore, the error must have occurred during a subsequent activity.</p> <p>The corrective action for the event was to properly reconnect two motor leads on the low speed starter for the fan. Proper rotation was then visually verified. The Containment Air Cooling System Monthly Test ST 5063.01 and the Containment Air Cooling System Refueling Test, ST 5063.02, have been modified to include verification of air flow. The appropriate surveillance test will be part of post maintenance/post modification testing whenever the activity could have affected cooling fan operability.</p> <p>This finding is reportable per 10CFR50.73(a)(2)(i)(B) as operation prohibited by the plant's Technical Specifications.</p>																																																																					
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## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/85

FACILITY NAME (1)  Davis-Besse Unit 1	DOCKET NUMBER (2)  0 5 0 0 0 3 4 6 8 6 - 0 0 7 - 0 1 0 2 OF 0 3	LER NUMBER (6)			PAGE (3)	
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TEXT (If more space is required, use additional NRC Form 365A's) (17)

Description of Occurrence:

On January 4, 1986, at 1022 hours during the performance of the Containment Air Cooler Damper Test, TP 850.31, it was discovered that Containment Air Cooler, CAC, (BK) 1-1 fan would run backwards in the low speed mode of operation. The fan would run in the correct direction in the high speed mode of operation which is the mode used during normal plant operation. Being in mode 5 (Cold Shutdown) at this time, there are no applicable action statement requirements. However, because we apparently operated in the past in this condition the finding is reportable as a violation of Technical Specifications.

The NRC was notified at 1105 hours on January 4, 1986, via the ENS (Red Phone) per 10CFR 50.72.

This written report is being submitted per 10CFR50.73(a)(2)(i)(B) as operation prohibited by the plant's Technical Specifications.

Designation of Apparent Cause of Occurrence:

A review of the original air balance testing for the CACs shows that design flows were met which would not have been possible unless the fans were running in the correct direction at that time. Therefore, apparently during some operation in subsequent years, the low speed motor leads were switched. A review of the Maintenance Work Orders (MWO) generated over the years found several activities that would have required leads to have been disconnected. The normal maintenance follow up would be to verify proper rotation. But unless rotation in both the low speed and the high speed modes of operation were verified, an error could have gone undetected. Visual checking of rotation is possible only when containment is accessible.

The surveillance tests used to determine compliance with Technical Specification 3.6.2.2 did not contain the details to verify flow which would have indicated proper rotation of the fan.

Analysis of Occurrence:

Post LOCA pressure reduction of the Containment atmosphere is effected through the use of the Containment Air Coolers (CAC) and the Containment Spray System, CS, (BE). There are two of three 50 percent capacity CACs and two 50 percent capacity CS Pumps available post LOCA. It is assumed that the coolers and spray operate in one of the following combinations: one cooler/one spray header or two spray headers.

With CAC 1-1 fan running backwards, the cooling unit would not provide its intended 50 percent capacity cooling. Also, LER 85-022 (NP-33-85-33) reported that there was less than the designed flow to the CACs being supplied by the Service Water train for the primary loads. Therefore, the station has been operating at least part of the time with

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1 the two selected post LOCA CACs consisting of one with a fan that runs in reverse in slow speed and one with less than design service water flow.

1 Not having two fully operable CACs would be a violation of T.S.3.6.2.2. However, there would still be cooling available from the two Containment Spray headers. In the event of the loss of offsite power accident followed by the single failure of one of the Emergency Diesel Generators, there could be less than 100% heat removal capacity.

Corrective Action:

Under Maintenance Work Order (MWO) 1-86-0100-00, the motor leads on the low speed starter for the fan were correctly reconnected. Proper rotation was verified by visual observation. Work was completed on January 11, 1986.

1 The Containment Air Cooling System Monthly Test, ST 5063.01 and the Refueling Test, ST 5063.02, have been revised to include verification of air flow. The appropriate sections of this test will also be used as part of post maintenance/post modification testing whenever the activity could have affected cooling fan operability. These tests will verify proper rotation in both the slow and fast speed modes of operation.

1 As stated in LER 86-036, a review of Technical Specification required testing is being performed to determine if any other acceptance criteria has been omitted. This review will be completed prior to entering Mode 4 from the present outage.

Failure Data:

1 This is the first report of a Containment Air Cooler fan funning backwards. Having less than designed service water flow to a CAC was reported in LER 85-022 (NP-33-85-33).

REPORT NO: NP-33-86-02

DVR(s): 86-003



October 15, 1986



Log No. KA86-0272  
File No: (NP-33-86-02)  
(Revision 1)

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

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

Gentlemen:

Enclosed is Revision 1 to Licensee Event Report 86-007. The revisions to the report are indicated by a "1" in the left margin of each page.

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

Yours truly,

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

LFS/ed

Enclosure

cc: Mr. James G. Keppler  
Regional Administrator  
USNRC Region III

Mr. Paul Byron  
DB-1 NRC Resident Inspector

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