

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 2
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TITLE (4)
Inadequate Post LOCA Service Water Flow to Containment Air Cooler Units

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	1	3	0	8	5	8	5	—	0	2	2	—	0	0	1	2	8	8	5			0	5	0	0	0

OPERATING MODE (8) 5	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 8: (Check one or more of the following) (11)									
POWER LEVEL (10) 0 C 0	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.406(a)	<input type="checkbox"/> 80.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)						
	<input type="checkbox"/> 20.406(a)(1)(i)	<input type="checkbox"/> 80.38(a)(1)	<input type="checkbox"/> 80.73(a)(2)(v)	<input type="checkbox"/> 73.71(a)						
	<input type="checkbox"/> 20.406(a)(1)(ii)	<input type="checkbox"/> 80.38(a)(2)	<input type="checkbox"/> 80.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 386A)						
	<input type="checkbox"/> 20.406(a)(1)(iii)	<input checked="" type="checkbox"/> 80.73(a)(2)(i)	<input type="checkbox"/> 80.73(a)(2)(vii)(A)							
	<input type="checkbox"/> 20.406(a)(1)(iv)	<input type="checkbox"/> 80.73(a)(2)(ii)	<input type="checkbox"/> 80.73(a)(2)(vii)(B)							
<input type="checkbox"/> 20.406(a)(1)(v)	<input type="checkbox"/> 80.73(a)(2)(iii)	<input type="checkbox"/> 80.73(a)(2)(ix)								

LICENSEE CONTACT FOR THIS LER (12)

NAME C. Momenee/J. Nicholson, System Engineers	TELEPHONE NUMBER
	AREA CODE: 4 1 9 2 4 9 - 5 0 0 0

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS

SUPPLEMENTAL REPORT EXPECTED (14)

<input checked="" type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH: 0 3	DAY: 3 1	YEAR: 8 6
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

During the review of the Service Water System 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 only one of two independent trains of Containment Air Cooling (CAC) would provide the required cooling during post LOCA conditions.

Although the Station has been in Cold Shutdown (Mode 5) since June 9, 1985, this event is reportable as a violation of Technical Specification 3.6.2.2 which require two independent containment cooling units to be operable in Modes 1,2 and 3 (being reported under 10CFR 50.73(a)(2)(i)(B)) these conditions have existed since original startup.

Plant operating procedures will be revised prior to startup to ensure adequate service water flow to the CAC unit in each train.

A modification to the system operating logic will be investigated to permit the normal cooling function and still ensure the Units will perform as intended during an accident.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 5	0 2 2	0 0	0 2	OF	0 2

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

Description of Occurrence: The Containment Air Cooling System (CAC) is composed of three air cooler units located within the Containment Vessel. These units are used for both normal and emergency cooling. Each unit consists of a finned tube cooling coil and a direct driven fan. The fans are designed to operate under normal conditions at full speed, and at half speed during LOCA conditions.

The Containment Air Cooling System is designed to control the Containment Vessel ambient air temperature to a maximum of 120°F with two of the three units operating. Cooling water for the air cooler units is supplied by the Service Water System.

Two independent CAC units are required to be operable in Modes 1,2 and 3. The Cooling Water Supply to one unit is received from the pump supplying the secondary SW loads. The second unit receives its cooling water from the SW pump supplying the primary component Cooling Water Heat Exchanger, the third CAC unit is aligned, electrically and mechanically to this train. Under a Safety Features Actuation Signal the SW outlets of all three CAC units open allowing SW flow to all coolers and the fans in one unit on each train start in low speed. It has been determined that during post LOCA operations head or flow problems may exist in the train feeding the two CAC units.

Designation of Apparent Cause of Occurrence: The condition is an original design deficiency which does not isolate SW flow to the non-operating CAC unit.

The design problems exist because the Surveillance Tests written to satisfy the Technical Specification requirements do not ensure that adequate service water flow is available to the demanded CAC units upon a Safety Actuation signal. The only reference to cooling is that the CAC system is designed to control the Containment Vessel ambient air temperature to a maximum of 120°F with two of the three units operating. This design condition has always been satisfied during monthly and refueling outage testing.

Analysis of Occurrence: There are five (5) 50% capacity containment cooling units available. Three (3) of the CAC units and two (2) Containment Spray Trains. Any combination of two of these will provide adequate containment cooling following a design basis accident.

However, the existing configuration reduces the heat removal capacity of the two CAC's that can be supplied by the service water train supplying the primary Component Cooling Water heat exchanger. Since SW flow is not isolated to the CAC not operating, the CAC that is running receives less than the flow used in the design analysis.

In any event, the operator would be able to select the combination of containment cooling units that would be kept running to limit containment pressure.

Corrective Action: Plant operating procedures will be revised prior to startup to ensure adequate service water flow to the CAC unit in each train.

A modification to the system operating logic will be investigated to permit the normal cooling function and still ensure that Units will perform as intended during an accident.

Failure Data: There have been no previous reports.