

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Catawba Nuclear Station, Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 4 1 1 3	PAGE (3) 1 OF 02
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TITLE (4)
Potential Overpressurization of the Component Cooling Water System

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	0	1	8	4	0	1	1	0			0 5 0 0 0
											0 5 0 0 0

OPERATING MODE (9) _____

POWER LEVEL (10) 01010

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.38(c)(1)	<input checked="" type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(e)
<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.38(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input checked="" type="checkbox"/> OTHER (Specify in Abstract below and in Text, NRC Form 366A)
<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	Part 21
<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME Roger W. Ouellette, Assistant Engineer - Licensing	TELEPHONE NUMBER AREA CODE: 710 4 317 131-17 5 310
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)

MONTH	DAY	YEAR

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

The Component Cooling Water System could potentially become overpressurized should a tubing failure occur in the reactor coolant pump thermal barrier heat exchanger.

This deficiency pertains to criteria used by Duke Power Company in the design of the Component Cooling System. This criteria was initially provided by the NSSS vendor (Westinghouse) and subsequently revised by them. Westinghouse has indicated that they have reported this deficiency pursuant to 10 CFR 21 for projects where they have provided the design of the Component Cooling System.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) Catawba Nuclear Station, Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 4 1 3	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 4 -	0 1 4 -	0 0 0	2	OF	0 2

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

The Component Cooling Water System could potentially become overpressurized should a tubing failure occur in the reactor coolant pump thermal barrier heat exchanger.

A tube failure in a heat exchanger cooled by the Component Cooling Water System could overpressurize the system. The limiting case is an assumed rupture of a tube in a reactor coolant pump thermal barrier heat exchanger. This would result in a maximum leak rate of 260 gpm (calculated) from the Reactor Coolant System into the Component Cooling Water System. This leakage would appear as additional fluid in the surge tanks. The surge tanks are normally vented to atmosphere via a 4" vent line containing an air operated valve which receives a signal to close on high radiation in the component cooling system. Once this valve closes (as would be expected due to the activity of the reactor coolant inflow) the only overpressure protection for the tanks would be a 2" overflow line. The resultant pressure losses in this line would overpressurize the surge tank and portions of the system piping.

A single tube rupture in a reactor coolant pump thermal barrier heat exchanger could generate fluid pressures in excess of piping and component design pressures. Since the two Component Cooling System trains are connected during normal operation, both could be affected by such a failure. Consequent damage to both trains of component cooling could result in loss of cooling to essential equipment (including reactor coolant pumps, charging, pumps, etc.).

Overpressure protection for the surge tanks will be provided by assuring that the vent valve on each surge tank remains open. A calculation has been performed which shows that the open 4" tank vent provides adequate overpressure protection.

Closure of this valve is not required to prevent an uncontrollable release to the environment of gaseous activity normally required to be held for decay. Surge tank overflow is directed to the component cooling drain sumps, where it can be pumped to the mixing and settling tank in the Liquid Radwaste System for disposal.

DUKE POWER COMPANY

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HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

TELEPHONE
(704) 373-4531

November 9, 1984

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

Subject: Catawba Nuclear Station, Unit 1
Docket No. 50-413

Gentlemen:

Pursuant to 10 CFR 50.73 Section (a) (1) and (d), attached is Licensee Event Report 413/84-14 concerning potential overpressurization of the Component Cooling Water System. This event was considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

H.B. Tucker /-B

Hal B. Tucker

RWO:slb

Attachment

cc: Mr. James P. O'Reilly, Regional Administrator
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Atlanta, Georgia 30323

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1100 Circle 75 Parkway
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NRC Resident Inspector
Catawba Nuclear Station

American Nuclear Insurers
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Document Control Desk
November 9, 1984
Page Two

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