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June 28, 2001

U. S. Nuclear Regulatory Commission  
ATTENTION: Document Control Desk  
Washington, DC 20555-0001

SUBJECT: Duke Energy Corporation  
Catawba Nuclear Station Unit 1 and 2  
Docket Nos. 50-413, 50-414  
Licensee Event Report 413/2001-002 Revision 0

Attached please find Licensee Event Report 413/2001-002 Revision 0, entitled "Both units were in a condition prohibited by Technical Specifications due to both trains of Control Room Area Chilled Water System inoperable".

The Licensee Event Report contains planned corrective actions to prevent recurrence and are not required for regulatory compliance with any licensing documents, NRC rules, or regulations. Therefore, this report does not contain any commitments.

Questions regarding this Licensee Event Report should be directed to G. K. Strickland at 803-831-3585.

Sincerely,

G. R. Peterson

Attachment

JE22

U.S. Nuclear Regulatory Commission  
June 28, 2001  
Page 2

xc:

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**LICENSEE EVENT REPORT (LER)**

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

Estimated burden per response to comply with this mandatory information collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet e-mail to bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

<b>FACILITY NAME (1)</b> Catawba Nuclear Station, Unit 1	<b>DOCKET NUMBER (2)</b> 05000 413	<b>PAGE (3)</b> 1 OF 6
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**TITLE (4)**  
Both Units were in a condition prohibited by Technical Specifications due to both trains of Control Room Area Chilled Water System inoperable.

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
05	03	2001	2001	002 -	00	06	28	2001	Catawba 2	05000414
									FACILITY NAME	DOCKET NUMBER

<b>OPERATING MODE (9)</b> 1	<b>THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply) (11)</b>									
<b>POWER LEVEL (10)</b> 100	20.2201(b)	20.2203(a)(3)(ii)	50.73(a)(2)(ii)(B)	50.73(a)(2)(ix)(A)						
	20.2201(d)	20.2203(a)(4)	50.73(a)(2)(iii)	50.73(a)(2)(x)						
	20.2203(a)(1)	50.36(c)(1)(i)(A)	50.73(a)(2)(iv)(A)	73.71(a)(4)						
	20.2203(a)(2)(i)	50.36(c)(1)(ii)(A)	50.73(a)(2)(v)(A)	73.71(a)(5)						
	20.2203(a)(2)(ii)	50.36(c)(2)	50.73(a)(2)(v)(B)	OTHER Specify in Abstract below or in NRC Form 366A						
	20.2203(a)(2)(iii)	50.46(a)(3)(ii)	50.73(a)(2)(v)(C)							
	20.2203(a)(2)(iv)	50.73(a)(2)(i)(A)	X 50.73(a)(2)(v)(D)							
	20.2203(a)(2)(v)	X 50.73(a)(2)(i)(B)	50.73(a)(2)(vii)							
20.2203(a)(2)(vi)	50.73(a)(2)(i)(C)	50.73(a)(2)(viii)(A)								
20.2203(a)(3)(i)	50.73(a)(2)(ii)(A)	50.73(a)(2)(viii)(B)								

**LICENSEE CONTACT FOR THIS LER (12)**

<b>NAME</b> G. K. Strickland, Regulatory Compliance	<b>TELEPHONE NUMBER (Include Area Code)</b> 803-831-3585
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**COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)**

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
P2h	KM	YCCH0002	C147	Yes	P2h	KM	YCTS9105B	R290	Yes

**SUPPLEMENTAL REPORT EXPECTED (14)**

<b>YES (If yes, complete EXPECTED SUBMISSION DATE).</b>	<input checked="" type="checkbox"/>	<b>NO</b>	<input type="checkbox"/>	<b>EXPECTED SUBMISSION DATE (15)</b>	MONTH	DAY	YEAR
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**ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)**

On May 3, 2001, at 0101 hours, both trains of Control Room Area Chilled Water System (CRACWS) were inoperable when A-train CRACWS was out of service for planned maintenance and testing and B-train CRACWS automatically tripped. With both trains of CRACWS inoperable, Technical Specification (TS) 3.0.3 applies. Technical Specification 3.0.3 states that action shall be initiated within 1 hour to place the unit in MODE 3 within 7 hours.

Contrary to TS 3.0.3, a dual unit shutdown was not initiated within 1 hour because A-train of CRACWS was incorrectly declared operable 54 minutes after the event initiation. The B-train of CRACWS was restored to operable status after 6 hours and 50 minutes.

The root cause of the incorrect declaration of CRACWS operability was the over reliance on one supporting piece of information.

### LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET (2) NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Catawba Nuclear Station Unit 1	05000-413	2001	- 002 -	00	2 OF 6

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

#### Background

This event is being reported under 10CFR50.73(a)(2)(i)(B), any operation or condition which was prohibited by the plant's Technical Specifications, and 10CFR50.73(a)(2)(v)(D), any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident.

The Control Room Area Chilled Water System (CRACWS) [EIIS:KM] provides temperature control for the control room and the control room area. This function is accomplished by providing chilled water through the cooling coils of the air handling unit supply fans. The CRACWS consists of two independent and redundant trains with each train consisting of a chiller package, chilled water pump, and air handling units with cooling coils.

For the duration of this event, Catawba Units 1 and 2 were operating in Mode 1 at approximately 100 percent power. With the exception of A-train chiller maintenance, no systems, structures, or components were out of service that had any significant effect on the event.

#### Event Description (dates and approximate times)

5-2-01  
0330            A-train chiller was removed from service to clean the heat exchanger tubes, replace the heat exchanger divider plates, and test the differential pressure switch that provides input to the chiller start logic indicating the chilled water pump is running.

5-3-01  
0101            A-train chiller maintenance activities were completed and several differential pressure switch tests had been conducted - two successful tests and 2 unsuccessful tests. Personnel performing the testing concluded it was necessary to replace the switch and testing was stopped.

While A-train chiller was still out of service, the B-train chiller automatically tripped due

### LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET (2) NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Catawba Nuclear Station Unit 1	05000-413	2001	- 002 -	00	3 OF 6

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

to a high motor temperature indication. This left the control room with no cooling and temperature began to increase. After evaluating B-train chiller, it was determined that it would be faster to place A-train chiller in service.

0128

Plant personnel were dispatched to restart the A-train chiller. The focus for the technicians' task was to start a chiller with any actions necessary to provide control room cooling. These technicians also participated in the earlier differential pressure switch tests and were aware that the switch had required manual manipulation to successfully operate. Therefore, the technicians assisted the switch contacts to start the chiller and provide control room cooling.

The engineer was aware that the technicians operated the switch prior to the chilled water pump start but was unaware of any switch manipulation after the start signal. The engineer did not communicate this information.

The Operations Shift Manager (OSM) was not aware of the manual switch manipulation - before or after the start signal. The OSM believed that the system started without assistance and the unassisted start would be information in determining system operability.

A-train chiller was started at 0128.

0145

The OSM initiated a conference call with senior plant managers to discuss A-train CRACWS operability. The engineer participated in the call and, when asked if the A-train CRACWS was assisted for the start, the engineer did not communicate that the technicians manually operated the switch. The participants in the call understood, at that time, that the chiller

**LICENSEE EVENT REPORT (LER)**

FACILITY NAME (1)	DOCKET (2) NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Catawba Nuclear Station Unit 1	05000-413	2001	- 002 -	00	4 OF 6

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

had started without assistance and would restart under accident conditions. The OSM, with management concurrence, concluded A-train chiller was operable.

0155 A-train CRACWS was declared operable and the unit shutdown preparations were stopped.

B-train CRACWS remained out of service and inoperable.

0514 Maintenance personnel discovered a bad motor temperature module[EIIS:MO] in the B-train chiller and repaired B-train chiller.

0733 B-train chiller was started.

0751 B-train chiller was declared operable.

0830 Based on information provided that the A-train chiller was started with manual assistance and the chiller may not have been capable of manually being started from the control room or capable of automatically starting during an accident, the A-train chiller was then returned to inoperable status.

5-4-01  
 0200 The A-train chiller was started successfully without manual assistance and with no maintenance activities.

1043 A-train chiller restored to operable status. The chiller start logic was temporarily changed to remove the switch signal input.

**Causal Factors**

A root cause investigation was initiated to evaluate the incorrect declaration of CRACWS operability, based on inaccurate information, that

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET (2) NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Catawba Nuclear Station Unit 1	05000-413	2001	- 002 -	00	5 OF 6

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

resulted in not initiating a dual unit shutdown within one hour of entering TS 3.0.3. The Root Cause Team determined the incorrect decision was based on the over reliance on one supporting piece of information.

This event is a recurring event. This event is a human performance related event.

The motor temperature module failure is an EPIX reportable equipment failure associated with this event. Reference Catawba Nuclear Station Unit 2 EPIX report 276.

### Corrective Actions

#### Immediate

1. A-train CRACWS was placed in service to provide control room cooling.

#### Subsequent

1. A-train and B-train CRACWS were restored to operable status.

#### Planned

1. Senior plant management will provide additional expectations to the appropriate management staff, including the OSMs. These expectations will include the emphasis of a checklist designed to assist managers when they make time critical and risk significant decisions.
2. The plant administrative procedure will be revised to more formalize management conference calls when conducted outside normal working hours.
3. Engineering will evaluate the control room chiller equipment and, based on the study, will initiate appropriate changes to the system to improve the chiller reliability.

### Safety Analysis

The safety significance of this event is low because the A-train chiller was started within 30 minutes to maintain the control room temperature

### LICENSEE EVENT REPORT (LER)

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Catawba Nuclear Station Unit 1	05000-413	2001	- 002 -	00	6 OF 6

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

within the design limits. Control room temperature was less than the design limit of 90 degrees at all times. Although the manual start of the chiller did not occur, the A-train chiller could have been manually restarted with local switch manipulation, if necessary, prior to the B-train chiller being restored operable at 6 hours, 50 minutes into the event.

Additionally, the A-train chiller automatic start capability was successfully demonstrated at 0200 hours 5/4/01 with no manual assistance or intervening maintenance activity. The possibility exists that the A-train chiller may have been capable of performing its design function and fully operable for the approximately 25 hours since it was considered inoperable at 0128 hours 5/3/01.

The Probabilistic Risk Assessment (PRA) evaluated, qualitatively, the significance of the control area ventilation system and determined the system to be of low importance. On this basis the PRA does not include the CRACWS in the model and no significant impact on core damage frequency is expected.

The Control Room Area Ventilation System (CRAVS) was maintained operable throughout this event. Control room habitability was assured by maintaining the control room pressurization fans, filters, and automatic initiation features available. In the event of a Loss of Coolant Accident at this time, the CRAVS could have operated for the duration of the event with a high level of reliability thereby maintaining exposure to the operators within regulatory limits. Therefore this event is not significant relative to control room dose consequences.

The health and safety of the public were not affected by this event. There were no radiological events or consequences associated with this event.

Although the safety impact of this event was minimal, this condition met the reporting criteria of 10 CFR 50.73(a)(2)(v) and therefore will be recorded under the NRC Performance Indicators for both units as a Safety System Functional Failure.