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November 30, 2006

Docket No.: 50-425

NL-06-2693

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D. C. 20555-0001

Vogtle Electric Generating Plant - Unit 2  
Licensee Event Report 2-2006-004  
ESF Room Cooler Determined to Be in a Condition  
Prohibited by Technical Specifications

Ladies and Gentlemen:

In accordance with the requirements of 10 CFR 50.73, Southern Nuclear Operating Company hereby submits a Vogtle Electric Generating Plant licensee event report for a condition that was determined to be reportable on October 1, 2006.

Sincerely,

A handwritten signature in black ink, appearing to read "Don E. Grissette", written over a horizontal line.

Don E. Grissette

DEG/DWM/daj

Enclosure: LER 2-2006-004

cc: Southern Nuclear Operating Company  
Mr. J. T. Gasser, Executive Vice President  
Mr. T. E. Tynan, General Manager – Plant Vogtle  
RType: CVC7000

U. S. Nuclear Regulatory Commission  
Dr. W. D. Travers, Regional Administrator  
Mr. R. E. Martin, NRR Project Manager – Vogtle  
Mr. G. J. McCoy, Senior Resident Inspector – Vogtle

**Enclosure**

**Vogtle Electric Generating Plant - Unit 2  
Licensee Event Report 2-2006-004  
ESF Room Cooler Determined to be in a Condition  
Prohibited by Technical Specifications**

**LICENSEE EVENT REPORT (LER)**

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

Estimated burden per response to comply with this mandatory 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 and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@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 an 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.

1. FACILITY NAME Vogle Electric Generating Plant – Unit 2	2. DOCKET NUMBER 05000-425	3. PAGE 1 OF 4
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4. TITLE  
ESF Room Cooler was determined to be in a condition which was prohibited by TS

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER(S)
10	01	2006	2006	004	00	11	30	2006		05000
									FACILITY NAME	DOCKET NUMBER(S)
										05000

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § : (Check all that apply)			
	20.2201(b)	20.2203(a)(3)(i)	50.73(a)(2)(i)(C)	50.73(a)(2)(vii)
1	20.2201(d)	20.2203(a)(3)(ii)	50.73(a)(2)(ii)(A)	50.73(a)(2)(viii)(A)
	20.2203(a)(1)	20.2203(a)(4)	50.73(a)(2)(ii)(B)	50.73(a)(2)(viii)(B)
	20.2203(a)(2)(i)	50.36(c)(1)(i)(A)	50.73(a)(2)(iii)	50.73(a)(2)(ix)(A)
	20-2203(a)(2)(ii)	50.36(c)(1)(ii)(A)	50.73(a)(2)(iv)(A)	50.73(a)(2)(x)
	20-2203(a)(2)(iii)	50.36(c)(2)	50.73(a)(2)(v)(A)	73.71(a)(4)
	20.2203(a)(2)(iv)	50.46(a)(3)(ii)	50.73(a)(2)(v)(B)	73.71(a)(5)
10. POWER LEVEL	20.2203(a)(2)(v)	50.73(a)(2)(i)(A)	50.73(a)(2)(v)(C)	OTHER Specify in Abstract below or in NRC Form 366A
	20.2203(a)(2)(vi)	X 50.73(a)(2)(i)(B)	50.73(a)(2)(v)(D)	

12. LICENSEE CONTACT FOR THIS LER

NAME Tim Mattson, Performance Analysis	TELEPHONE NUMBER (Include Area Code) (706) 826-3216
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13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

14. SUPPLEMENTAL REPORT EXPECTED				15. EXPECTED SUBMISSION DATE		
YES (If yes, complete 15. EXPECTED SUBMISSION DATE)	X	NO		MONTH	DAY	YEAR

16. ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On October 1, 2006, Engineered Safety Feature (ESF) Room Cooler 2-1555-A7-003 was found running with no discernable air flow to the ESF equipment room. The primary equipment cooled by this room cooler is electrical equipment. Investigation discovered that the motor leads were wired incorrectly which caused the room cooler motor and fan to rotate backwards. Per Technical Specifications (TS), two ESF room coolers and safety-related chiller system trains are required to be operable to provide redundancy to ensure that the system functions to remove heat from the ESF equipment rooms during and after an accident, assuming the worst case single failure occurs coincident with a loss of offsite power. If one ESF room cooler and one safety-related chiller system train are inoperable, action must be taken to restore the train to operable status within 72 hours. ESF Room Cooler 2-1555-A7-003 was determined to have been inoperable for longer than allowed by TS.

The cause of the event was personnel error resulting from inadequate use of the "Plant Equipment Component Configuration Control" procedure which resulted in rolling the motor leads at the Motor Control Center (MCC). This resulted in the ESF Room Cooler fan motor running in the reverse direction. Based on review of work history, the probable time was determined to have taken place in 1999 during MCC switchgear cleaning.

**LICENSEE EVENT REPORT (LER)**

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Vogtle Electric Generating Plant - Unit 2	05000-425	2006	-- 004	-- 00	2 OF 4

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

**A. REQUIREMENT FOR REPORT**

This report is required per 10 CFR 50.73 (a)(2)(i)(B) because Engineered Safety Feature (ESF) Room Cooler 2-1555-A7-003 was found inoperable for longer than allowed by the TS.

**B. UNIT STATUS AT TIME OF EVENT**

At the time of the event, Unit 2 was in Mode 1 (Power Operation) at 100% rated thermal power.

**C. DESCRIPTION OF EVENT**

In 1988, prior to commercial operation of VEGP Unit 2, Engineered Safety Feature (ESF) room cooler fan 2-1555-A7-003 was found to be rotating backwards due to the fan motor being incorrectly wired. This was corrected by rolling the "A" and "C" phases at the breaker. Identification tags were placed on these phases to reflect this non-standard color/phase configuration (Red-White-Black instead of Black-White-Red). The primary equipment cooled by this ESF room cooler is electrical switchgear and motor control center (MCC) equipment. Backwards rotation of the fan for the room cooler could cause the ambient temperature in the room to be elevated when the fan is operating, because the normal/accident heat load is not efficiently being removed by the room cooler due to reduced fan performance in the reversed air flow configuration.

In 1995, a maintenance work order (MWO) documented the as-left wiring of the phases as Red-White-Black, which was the correct configuration for the ESF room cooler fan. However, on January 11, 2000, a maintenance work order documented the as-found wiring as Black-White-Red, with the as-left wiring the same. The only MWO identified between the 1995 and the 2000 MWO was a 10 year Motor Control Center PM completed in 1999 which required the de-termination of numerous load side power cables, including the cables for 2-1555-A7-003. However, this work order does not contain any documentation of the lifting or landing of these leads. This most likely resulted in all of the cables being re-terminated in the standard Black-White-Red configuration, which was incorrect for room cooler fan 2-1555-A7-003. In addition, the 1999 maintenance work order did not identify that the room cooler fan was rotating backwards after maintenance. The functional test for the MCC stated to "verify proper operation after energization" and was signed off satisfactory. The identification tags added in 1988 for the phases were not present in 2006. It is not known when they were removed.

The issue of the ESF room cooler motor being wired incorrectly was first identified during operator rounds on October 1, 2006. The operator identified that there was no discernible air flow on the discharge of the ESF room cooler fan while investigating why the fan was running continuously. During the maintenance investigation of the issue, electricians discovered that the leads at the MCC had been swapped causing the fan motor to run in the reverse direction.

**LICENSEE EVENT REPORT (LER)**

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Vogtle Electric Generating Plant - Unit 2	05000-425	2006	-- 004	-- 00	3 OF 4

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

It was also determined that a missed opportunity to identify the room cooler fan issue occurred in May 2006. A maintenance work order was written when the room was reported warm and the fan was found to be running continuously. This work order was closed after the temperature switch which controls the fan was found to be out of calibration and was recalibrated within tolerance. The functional test of "proper operation" was signed off as satisfactory.

This event did not involve any automatic or manually initiated safety system responses.

**D. CAUSE OF EVENT**

The cause of the event was personnel error resulting from inadequate use of the "Plant Equipment Component Configuration Control" procedure which resulted in swapping the motor leads at the MCC. A contributing cause to this event was that functional testing for the work order utilized in 1999 and subsequent work orders on the MCC breaker did not detect the error.

**E. ANALYSIS OF EVENT**

An analysis was performed to evaluate the impact to the electrical equipment upon loss of Auxiliary Building normal ventilation and without cooling from the MCC Room Cooler. The radiological conditions to gain access to the electrical equipment room and cooler rooms were also evaluated.

Based on the estimated temperature rise due to loss of cooling, the electrical equipment would have continued to perform its intended function while the room temperature was approaching the room stabilization temperature and would have continued to perform its intended function once the room achieved the stabilization temperature. Based on the estimated post-accident dose rates, it is reasonable to expect that corrective measures to reestablish room cooling could have been taken. This event did not result in a Safety System Functional Failure.

**F. CORRECTIVE ACTIONS**

- 1) The motor leads at the MCC were re-landed in the proper configuration and color phasing tape was used to insure that the as-found condition matched the wiring configuration controls.
- 2) Following the October 1, 2006 discovery, similar ESF room cooler fan applications were identified and checked for correct air flow indication. Proper airflow direction has been verified on the remaining ESF room cooler fans.
- 3) The Maintenance functional test procedure was revised to include a fan rotational check and/or air flow check after maintenance.
- 4) This event will be discussed with the Maintenance, Work Planning, and Operations personnel by February 15, 2007, or prior to any ESF room cooler maintenance if required before that date.
- 5) Procedure 25506-C, "Motor Control Center Preventative Maintenance" was previously revised to ensure an adequate Functional Test is performed after maintenance.

LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Vogtle Electric Generating Plant - Unit 2	05000-425	2006	-- 004	-- 00	4 OF 4

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

G. ADDITIONAL INFORMATION

- 1) Failed Components:  
None
  
- 2) Previous Similar Events:  
None
  
- 3) Energy Industry Identification System Codes:  
Engineered Safety Features Actuation System – JE