

**LICENSEE EVENT REPORT (LER)**

FACILITY NAME (1) PLANT HATCH, UNIT 1										DOCKET NUMBER (2) 0 5 0 0 0 3 2 1										PAGE (3) 1 OF 0 7																																		
TITLE (4) DESIGN DEFICIENCY COULD AFFECT CONTROL ROOM ENVIRONMENTAL CONTROL 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 E. I. HATCH, UNIT 2										DOCKET NUMBER(S) 0 5 0 0 0 3 6 6																	
0 4			1 5			8 7			8 7			0 0			4 0			0 1			0 8			0 8			8 8			0 5 0 0 0 0																								
OPERATING MODE (9) 1										THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)																																												
POWER LEVEL (10) 7 0 0										20.402(b)										20.405(e)										50.73(a)(2)(iv)										73.71(b)														
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										20.405(a)(1)(ii)										50.38(e)(2)										50.73(a)(2)(vii)										OTHER (Specify in Abstract below and in Text, NRC Form 368A)														
										20.405(a)(1)(iii)										50.73(a)(2)(i)										50.73(a)(2)(viii)(A)																								
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										20.405(a)(1)(v)										50.73(a)(2)(iii)										50.73(a)(2)(ix)																								
LICENSEE CONTACT FOR THIS LER (12) NAME Steven B. Tipps, Manager Nuclear Safety and Compliance, Hatch																														TELEPHONE NUMBER AREA CODE 9 1 2										3 6 7 + 7 8 5 1														
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																																																						
CAUSE					SYSTEM					COMPONENT					MANUFACTURER					REPORTABLE TO NRC					CAUSE					SYSTEM					COMPONENT					MANUFACTURER					REPORTABLE TO NRC									
SUPPLEMENTAL REPORT EXPECTED (14)																				EXPECTED SUBMISSION DATE (15)										MONTH DAY YEAR																								
YES (If yes, complete EXPECTED SUBMISSION DATE)																				NO																																		
ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)																																																						
<p>This report is voluntarily submitted because the event described may be of generic interest. On 3/26/87 at approximately 1130 CST, both Unit 1 and Unit 2 were in the run mode at an approximate power level of 2436 MWt (100 percent of rated thermal power). At that time, contract personnel in the Procedures Upgrade Program (PUP) determined that the Main Control Room Environmental Control (MCREC EIIS Code VI) dampers may not isolate the Main Control Room (MCR) with an electrical power failure to the damper's air solenoids. On 4/15/87, the Architect Engineer officially determined the MCREC system was not single failure proof, as required by the design. No actual failures of the MCREC system to perform its safety function occurred.</p> <p>The root cause of this event is a design deficiency. The design deficiency resulted from a failure to reconcile the system design requirements for the isolation and pressurization modes of operation with single failure criteria.</p> <p>Corrective actions for this event included: 1) developing a Justification for Continued Operation (JCO) which covered all operating modes of the MCREC, 2) issuing a standing order to the MCR operators, and 3) developing a change to modify both the chlorine system and the Technical Specifications.</p>																																																						
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## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
PLANT HATCH, UNIT 1	05000321	87	004	01	02	OF	07

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

## A. REQUIREMENT FOR REPORT

This report is submitted because the condition described may be of generic interest. While the event is not reportable per 10 CFR 50.73 (a)(2)(ii), the event is categorized in this reporting requirement for ease of discussion. This report describes a condition where the degree of assurance that the Main Control Room Environmental Control (MCREC EIIS Code VI) system would be able to perform its Engineered Safety Feature (ESF) function was reduced from that anticipated in the Final Safety Analysis Report (FSAR). This reduction in the degree of assurance was due to the existence of a design flaw which made the system susceptible to a single failure. While an actual failure of the MCREC system to perform its safety function did not occur, the lack of single failure protection is a reduction in the level of assurance that the system could perform its safety function under all postulated plant conditions.

## B. UNIT(s) STATUS AT TIME OF EVENT

Unit 1 was in the run mode at an approximate power level of 2436 MWt (approximately 100 percent of rated thermal power). Unit 2 was in the run mode at an approximate power level of 2436 MWt (100 percent of rated thermal power).

## C. DESCRIPTION OF EVENT

On 3/26/87, at approximately 1130 CST, contractor personnel were reviewing the "MAIN CONTROL ROOM ISOLATION AND PRESSURIZATION LSFT" procedure (42SV-Z41-001-1S) as part of the on going Procedures Upgrade Program (PUP). During the procedure review, it was determined that MCREC system air operated (fail open) isolation dampers (see simplified drawing), 1Z41-F016 and 1Z41-F013A (Channel "A"), received electrical power for their air operator solenoids from fuse UU-F12. Dampers 1Z41-F015 and 1Z41-F013B (Channel "B") receive electrical power for their air operator solenoids from fuse TT-F1. If either of the fuses blow, their respective dampers will fail, by design, in the open position. If a high chlorine concentration is present in the MCREC outside air intake at the same time the dampers have moved to their failure default positions, the MCREC system will not automatically isolate as required by the system design. The failure of the dampers to automatically isolate was documented by PUP personnel in accordance with plant procedures.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

FACILITY NAME (1)  PLANT HATCH, UNIT 1	DOCKET NUMBER (2)  0 5 0 0 0 3 2 1	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 7	0 0 4	0 1	0 3	OF	0 7

TEXT (If more space is required, use additional NRC Form 365A's) (17)

Plant personnel requested that representatives of the Architect Engineer (AE) investigate the documented condition and provide input into the reportability of the condition. Specifically, the AE was requested to perform an engineering evaluation and determine if the condition satisfied the single failure criteria for the system as currently designed.

Engineering evaluation was completed on 04/15/87 with the determination that the system, as currently designed, did not meet the single failure criteria requirements.

During the engineering evaluation, it was also concurrently determined, by the AE, that in the event of a Loss Of Coolant Accident (LOCA) with the single failure of either of the two MCREC air inlet chlorine monitors (1Z41-R615A and 1Z41-R615B), isolation dampers 1Z41-F016 and 1Z41-F013A or 1Z41-F015 and 1Z41-F013B would close and prevent pressurization of the main control room. The pressurization mode of operation is assumed to automatically initiate in the LOCA analyses.

#### D. CAUSE OF EVENT

The root cause of this event has been determined to be a plant design deficiency in that portions of the MCREC system do not meet the single failure criteria as defined in the following documents:

1. Regulatory Guide 1.78, Rev. 0, June, 1974
2. Regulatory Guide 1.95, Rev. 0, February, 1975
3. IEEE Standard 379-1977, December, 1977
4. IEEE Standard 279-1971, April, 1972
5. HNP-2-FSAR-7, Section 7.3.5.3.1

The design deficiency resulted from a failure to reconcile the system design requirements for the isolation and pressurization modes of operation with single failure criteria.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
PLANT HATCH, UNIT 1	0 15 0 0 0 3 2 1	8 7	— 0 0 4	— 0 1	0 4	OF	0 7

TEXT (If more space is required, use additional NRC Form 365A's) (17)

## E. ANALYSIS OF EVENT

The major concentration of chlorine at the plant is contained in the chlorine storage building. This storage area is located outside the plant structures on the east side of the Unit 1 reactor building. The air intake for the MCREC system is located on the west side of the control building. The chlorine storage building is equipped with chlorine detectors and these detectors will generate an alarm signal in the Main Control Room (MCR) in the event of a chlorine accident. This provides operations personnel with a warning of a potential chlorine hazard.

Currently, there are two plant annunciator response procedures that provide operations personnel guidance in the event that a chlorine alarm is received in the MCR. The first procedure requires the operations personnel to determine the cause of any alarm condition as a result of an alarm at the chlorine building. The second procedure requires the main control room operating personnel to verify, as an immediate operator action, that the MCREC dampers have moved to their isolation positions in response to a chlorine signal at the MCREC system outside air intake. If these dampers have not moved to their correct safety positions, the operators are to take manual actions to move them to their safety positions.

While the design deficiency has existed for some time, the probability of a chlorine release is very remote. To date, there have been no actual chlorine releases at the plant. Were a chlorine release to occur, it would be first alarmed at the chlorine building and the control room operators would have forewarning of an off normal condition. Additionally, even if chlorine were detected in the air inlet to the main control room, the existing plant procedures provide sufficient guidance for the operations personnel to take the necessary corrective actions to insure habitability of the main control room.

Based on the above information, it is concluded that this event had no actual detrimental effect on plant safety.



## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
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PLANT HATCH, UNIT 1	0 5 0 0 0 3 2 1	8 7	0 0 4	0 1	0 5	OF	0 7

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

## F. CORRECTIVE ACTIONS

On 04/15/87 at approximately 1700 CDT, the AE determined that the MCREC system isolation dampers did not meet the single failure criteria of the plant's design basis. As a result of that determination, a Justification for Continued Operation (JCO) was written that day at approximately 1940 CDT to cover the chlorine release scenario and the LOCA scenario.

An operations department standing order was issued on 4/16/87 for an operator to continuously monitor the MCREC system in the event of a high chlorine alarm at the chlorine building. If a MCREC system isolation signal is received due to high chlorine concentration and either dampers Z41-F015 and Z41-F013A or Z41-F016 and Z41-F013B do not close, the standing order requires MCR operations personnel to immediately disconnect power to all MCREC system fans. Power to the fans can be restored after either all operators have put on Self Contained Breathing Apparatus (SCBA) or the isolation signal can be demonstrated to be erroneous. If the chlorine signal occurs during a radiological event, the operations personnel are additionally required to verify the validity of the chlorine alarm and to take the appropriate actions which can include manually opening links to place the MCREC system into the pressurization mode of operation.

After a design study, plant engineering personnel determined that the most feasible method of correcting the single failure criteria deficiency (associated with the chlorine monitors) was to discontinue the use of gaseous chlorine, utilized for water treatment, at the plant.

Consequently, a temporary Design Change Request (DCR 88-045) was initiated on 2/15/88. The temporary DCR will install a temporary liquid sodium hypochlorate (NaOCl) system, for water treatment, prior to removing the gaseous chlorination system. The temporary liquid sodium hypochlorate system is expected to be operable by approximately August, 1988. The gaseous chlorine will be removed from the site by 9/30/88.

A request to revise the Technical Specifications to remove the requirements for chlorine monitors was submitted on 6/20/88.

A permanent DCR has been initiated. This DCR will install a permanent sodium hypochlorate system at the plant. It is currently anticipated that the completion date for this DCR is approximately the end of 1988.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

FACILITY NAME (1)  PLANT HATCH, UNIT 1	DOCKET NUMBER (2)  05000321	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		87	004	01	06	OF	07

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## G. ADDITIONAL INFORMATION

## 1. FAILED COMPONENT(S) IDENTIFICATION

No components failed in this event.

## 2. PREVIOUS SIMILAR EVENTS

LER 50-321/1986-039 Rev 1 (dated 10/23/86) reported a event where the MCREC system was found to not fully perform its protective functions. This LER described an event where plant personnel found that the MCREC system would not automatically switch to either the pressurization or isolation modes of operation upon receipt of a high chlorine signal. The event was caused by two blown power supply fuses (one in either MCREC system trip channel).

The corrective actions for the event included: 1) replacing the blown fuses, 2) performing the system operability procedure, and 3) performing an engineering study to determine the cause of the blown fuses.

The corrective actions for the event described in LER 50-321/1986-039 Rev 1 could not have prevented the event described in LER 50-321/1987-004 Rev 1 because on 10/23/86, it was not recognized that the design of the MCREC system was deficient. The engineering study performed for LER 50-321/1986-039 Rev 1 was primarily interested in determining the cause for the fuse failures in the two separate trip channels.

# LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES 8/31/88

FACILITY NAME (1)

DOCKET NUMBER (2)

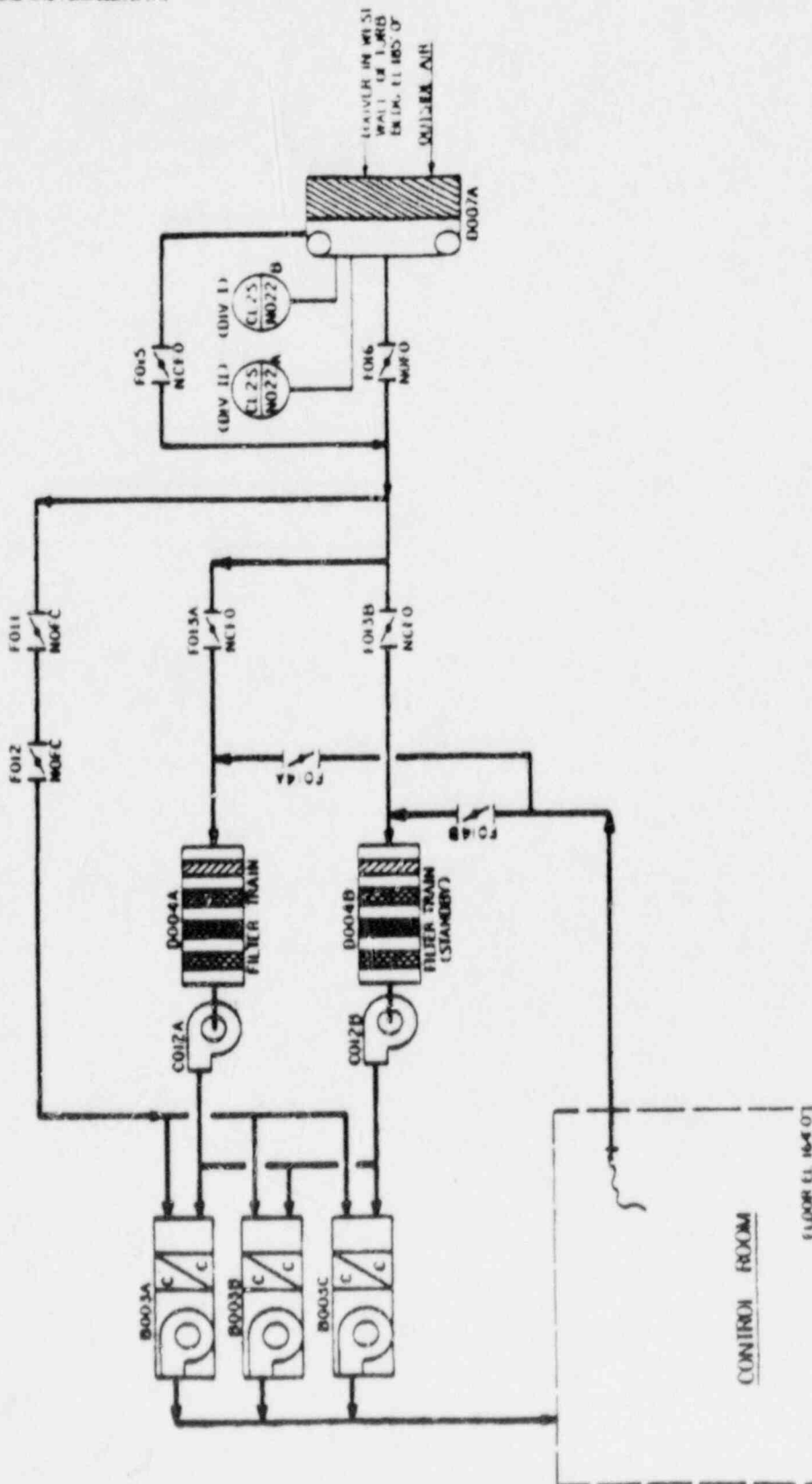
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PAGE (3)

PLANT HATCH, UNIT 1

0 5 0 0 0 3 2 1 8 7 - 0 0 4 - 0 1 0 7 OF 0 7

TEXT (If more space is required, use additional NRC Form 305A's) (17)



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Nuclear Operations Department



the southern electric system

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August 8, 1988

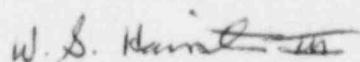
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PLANT HATCH - UNIT 1  
NRC DOCKET 50-321  
OPERATING LICENSE DPR-57  
LICENSEE EVENT REPORT  
DESIGN DEFICIENCY COULD AFFECT CONTROL  
ROOM ENVIRONMENTAL CONTROL SYSTEM

Gentlemen:

In accordance with the requirements of 10 CFR 50.73(a)(2)(ii), Georgia Power Company is submitting the enclosed, revised, Licensee Event Report (LER) concerning a design deficiency in the Plant Hatch - Unit 1 Main Control Room Environmental Control System. This event occurred in April of 1987.

Sincerely,

  
W. G. Hairston, III  
Senior Vice President

CLT/ct

Enclosure: LER 50-321/1987-004 Rev 1

c: (see next page)

IE22  
11



U. S. Nuclear Regulatory Commission  
August 8, 1988  
Page Two

c: Georgia Power Company  
Mr. H. C. Nix, General Manager - Plant Hatch  
Mr. L. T. Gucwa, Manager Licensing and Engineering - Plant Hatch  
GO-NORMS

U. S. Nuclear Regulatory Commission, Washington, D. C.  
Mr. L. P. Crocker, Licensing Project Manager - Hatch

U. S. Nuclear Regulatory Commission, Region II  
Dr. J. N. Grace, Regional Administrator  
Mr. J. E. Menning, Senior Resident Inspector - Hatch

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