

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) **Grand Gulf Nuclear Station - Unit 1** DOCKET NUMBER (2) **05000416** PAGE (3) **1 OF 04**

TITLE (4) **Reactor Water Cleanup System Isolation Due to Procedural Deficiency**

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 NAME (1)	DOCKET NUMBER (5)	
01	12	88	88	004	01	06	30	88	NA	050000	
									050000		

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

OPERATING MODE (9) 3	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
POWER LEVEL (10) 000	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)
	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.34(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	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)	
	<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	TELEPHONE NUMBER
Ronald Byrd/Licensing Engineer	6101143171-121419

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)

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)

At 2325 on January 12, 1988 a Reactor Water Cleanup (RWCU) system isolation occurred as operators prepared to secure one of two operating RWCU pumps. Because of the low level of decay heat present shortly after the refueling outage, reactor pressure was decreasing. Operations personnel had been instructed to minimize cooldown due to the anticipated transition to Operational Condition 2 on January 13, 1988. After observing system flow fluctuations, operators removed one filter/demineralizer from service. The operators noted that reactor pressure had decreased to 87 psig. The RWCU system flow fluctuations were induced by having both RWCU pumps operating. One RWCU pump is normally removed from service when reactor pressure decreases to 100 psig. When the operator began to throttle the filter/demineralizer bypass valve, a differential flow signal was sensed by leak detection instrumentation. The operator secured both RWCU pumps in an attempt to clear the high differential flow alarm before the 45 second time delay expired; however, the signal did not clear and all group 8 containment isolation valves closed. Operators performed a system walkdown inspection for abnormal leakage and verified system integrity. One RWCU pump was returned to operation at 0105 on January 13, 1988.

It has been determined that operators should be instructed to remove one operating RWCU pump at a pressure greater than 100 psig to allow sufficient time to establish stable flow to perform the evolution. The Plant Shutdown procedure, Plant Startup procedure, and the System Operating Instruction have been changed to implement this instruction.
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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		Grand Gulf Nuclear Station - Unit 1	0500041688	004	01	02	OF

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

A. REPORTABLE OCCURRENCE

On January 12, 1988 a Reactor Water Cleanup (RWCU) system isolation occurred while operators attempted to remove one of two operating RWCU pumps from service. The closure of the group 8 containment isolation valves on a leak detection differential flow signal is an ESF actuation reportable pursuant to 10CFR50.73(a)(2)(iv).

B. INITIAL CONDITIONS

The plant was in Operational Condition 3, Hot Shutdown, with reactor pressure decreasing. Two RWCU pumps were in service with a reactor pressure of 87 psig.

C. DESCRIPTION OF OCCURRENCE

At 2325 on January 12, 1988 an RWCU system isolation occurred as operators prepared to secure one of two operating RWCU pumps (EIIS code: GG-1CE-P-C001). Because of the low level of decay heat present shortly after the refueling outage, reactor pressure was decreasing. Operations personnel had been instructed to minimize cooldown due to the anticipated transition to Operational Condition 2 on January 13, 1988. After observing system flow fluctuations, operators removed one filter/demineralizer from service. The operators noted that reactor pressure had decreased to 87 psig. The RWCU system flow fluctuations were induced by having both RWCU pumps operating. One RWCU pump is normally removed from service when reactor pressure decreases to 100 psig.

When the operator began to throttle the filter/demineralizer bypass valve in preparation for pump shutdown, a differential flow signal was sensed by leak detection instrumentation. The operator secured both RWCU pumps in an attempt to clear the high differential flow alarm before the 45 second time delay expired; however, the signal did not clear and all group 8 containment isolation valves closed.

Operators performed a system walkdown inspection for abnormal leakage and verified system integrity. One RWCU pump was returned to operation at 0105 on January 13, 1988.

D. APPARENT CAUSE

The RWCU system is susceptible to perturbations at reactor pressures less than 100 psig when both RWCU pumps are operating.

J16AECM88061601 - 4

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

TEXT (If more space is required, use additional NRC Form 385A's) (17)

A similar event occurred on May 17, 1985 as described in LER 85-019-00. At that time, a caution statement was added to the Plant Shutdown procedure cautioning the operator of the possibility of an isolation if both RWCU pumps are operated at a reactor pressure less than 100 psig.

After review of this event, it has been determined that operators should be instructed to remove one operating RWCU pump at a reactor pressure greater than 100 psig. This action will allow sufficient time to establish stable flow to perform the activity without creating a differential flow signal.

E. SUPPLEMENTAL CORRECTIVE ACTIONS

The Plant Shutdown procedure, Plant Startup procedure, and the System Operating Instruction have been changed to provide adequate margin in the pump suction pressure for RWCU pump shutdown without causing a high differential flow system isolation. All integrated operating instructions will be reviewed to determine if the potential for creating low pump suction head exists in other operations of the RWCU system. Procedures requiring to be changed as a result of the review will be revised by March 31, 1988. All licensed operations personnel will be instructed to ensure they are aware of the significance of these changes and the potential for RWCU system isolations.

In LERs 87-009-01 and 87-015-00, System Energy Resources, Inc. (SERI) committed to perform an investigation to extend the automatic bypass time to greater than 45 seconds and submit the appropriate Technical Specification changes within the first quarter of 1988. In LER 88-004-00, SERI stated the extension of the timer delay beyond 45 seconds was still being evaluated and that the appropriate Technical Specification change would be submitted in the second quarter of 1988.

SERI has determined the prudent design change to make is to install a keylock bypass switch that bypasses the delta flow isolation signal. The keylock bypass switch will be used during anticipated RWCU system operating transients (RWCU system startup, shutdown, etc.) which could result in spurious isolations. The design change is currently scheduled for implementation during the third refueling outage.

SERI has reviewed the report prepared by Detroit Edison Company entitled "Reactor Water Cleanup Systems, A Comprehensive Summary of Design Corrective Actions, and Improvements" for recommendations pertaining to improved RWCU system operation. As part of this work, SERI is participating in a generic effort with the Boiling Water Reactor Owners Group to address RWCU operational concerns.

J16AECM88061601 - 5

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

TEXT (If more space is required, use additional NRC Form 385A's) (17)

F. SAFETY ASSESSMENT

There were no adverse safety consequences as a result of the group 8 containment isolation valves closing. No actual unidentified RWCU leakage was present. Containment isolation valves responded as designed. The RWCU system was out of operation for one hour and forty minutes which did not significantly affect reactor coolant chemistry.

J16AECM88061601 - 6



OLIVER D. KINGSLEY, JR.
Vice President
Nuclear Operations

June 30, 1988

U. S. Nuclear Regulatory Commission
Mail Station P1-137
Washington, D. C. 20555

Attention: Document Control Desk

Gentlemen:

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-29
Reactor Water Cleanup System
Isolation Due to Procedural
Deficiency
LER 88-004-01
AECM-88/0126

Attached is Licensee Event Report (LER) 88-004-01 which is a final report.

Yours truly,

ODK:bms
Attachment

cc: Mr. T. H. Cloninger (w/a)
Mr. R. B. McGehee (w/a)
Mr. N. S. Reynolds (w/a)
Mr. H. L. Thomas (w/o)
Mr. R. C. Butcher (w/a)

Dr. J. Nelson Grace, Regional Administrator (w/a)
U. S. Nuclear Regulatory Commission
Region II
101 Marietta St., N. W., Suite 2900
Atlanta, Georgia 30323

Mr. L. L. Kintner, Project Manager (w/a)
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Mail Stop 14B20
Washington, D.C. 20555

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