NRC Form 366 (9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

LICENSEE EVENT REPORT (LER)

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

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 NAMES	DOCKET NUMBER(S)
0 1	1 2	8 8	8 8	— 0 0 4	— 0 0	0 2	1 1	8 8	NA	0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	3	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	0 0 0	20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
Ronald Byrd/Licensing Engineer	6 0 1 — 4 3 7 - 2 1 4 9

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	

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

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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* U.S.GPO:1984-0-454-481/18758

NRC Form 366A (9-83)

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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Grand Gulf Nuclear Station - Unit 1	0 5 0 0 0 4 1 6	8 8	— 0 0 4	— 0 0	0 2 OF 0 3

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.

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. SERI is still considering extending the timer delay beyond 45 seconds; however, the schedule for Technical Specification change submittal has slipped to the second quarter of 1988.

In addition, SERI is considering the use of the existing manual bypass switches as allowed by Technical Specifications as a means to avoid spurious RWCU system isolations.

SERI is also reviewing 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.

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.

SYSTEM ENERGY RESOURCES, INC.

OLIVER D. KINGSLEY, JR
Vice President
Nuclear Operations

February 11, 1988

U. S. Nuclear Regulatory Commission
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 88-004-00
AECM-88/0038

Attached is Licensee Event Report (LER) 88-004-00 which is a final report.

Yours truly,

ODK

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)
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