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January 28, 1991

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

Attention: Document Control Desk

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
License No. NPF-29
Reactor Water Cleanup System Containment
Isolation On High Differential
LER 90-027-01

GNRO-91/00014

Gentlemen:

Attached is Licensee Event Report (LER) 90-027-01 which is a final report.

Yours truly,

WTC/JS/cg
attachment
cc: cc: Mr. D. C. Hintz (w/a)
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NRC Form 366 (9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES 8-31-88

LICENSEE EVENT REPORT (LER)

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TITLE (4)

Reactor Water Cleanup System Containment Isolation On High Differential Flow

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)
1 1	2 4	9 0	9 0	0 2 7	0 1	0 1	2 8	9 1	NA	0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)				
2	20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)	
POWER LEVEL (10) 0 2 0	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
Jewel Summers / Sr. Compliance Coordinator	AREA CODE 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)

On November 24, 1990, during transfer of the Reactor Water Cleanup (RWCU) system (EIIS Code: CE) from the pre-pump mode to the post-pump mode, a containment isolation of the RWCU system occurred due to high differential flow.

Contrary to the requirements of the Integrated Operating Instruction (IOI), operators shifted from pre-pump mode to post-pump mode of operations prior to reactor pressure reaching 100 psig. The operator also violated the procedure by starting the second RWCU pump prior to reaching adequate reactor pressure. These actions caused flow perturbations which caused the isolation.

Further investigations revealed that an inadequate pre-shift briefing was a contributing factor in this incident. The responsible Shift Superintendents and the reactor operator involved in this incident were counselled.

There were no adverse safety consequences as a result of this incident. The RWCU system was restored to service in approximately 33 minutes.

NRC Form 366A
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

A. Reportable Occurrence

On November 24, 1990, during transfer of the Reactor Water Cleanup (RWCU) system from the pre-pump mode to the post-pump mode, a high differential flow isolation occurred. The automatic isolation of the RWCU system containment isolation valves is reported as an Engineered Safety Feature (ESF) actuation pursuant to 10CFR50.73(a)(2)(iv).

B. Initial Condition

The plant was in Mode 2, Startup, with a reactor pressure of 40 psig.

C. Description of Occurrence

At 2245 on November 24, 1990, the plant was in a startup evolution. Operators began shifting the Reactor Water Cleanup System (CIIS Code: CE) from the pre-pump mode to the post-pump mode at 25 psig reactor pressure; however, the Integrated Operating Instruction (IOI) required shifting RWCU operation from pre-pump to post-pump at approximately 100 psig.

In addition to the early shift from pre-pump mode to post-pump mode, operators also started the second (i.e., "B") RWCU pump before sufficient reactor pressure was established. This action also was contrary to the instructions contained in the IOI. Erratic RWCU differential flow indications occurred upon RWCU pump "B" being placed in service. The operators attempted to adjust flow by using bypass valve G33-F044. In an effort to reduce flow, operators tripped the "B" pump. Upon closure of the G33-F044 valve, all flow was secured to the "A" pump which tripped on low flow. The delta flow timer timed out and the RWCU system containment isolation valves automatically closed. Instrumentation and Control (I&C) personnel were subsequently notified to fill and vent the RWCU inlet transmitters. The RWCU system was restored to service at 2318.

D. Apparent Cause

This incident occurred due to licensed personnel error. The RWCU system is susceptible to perturbations at reactor pressures less than 100 psig when both pumps are operating, thereby causing the system to isolate on high delta flow.

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

As a result of several RWCU isolations experienced in the past and efforts to make personnel aware of these operating conditions, plant procedures were changed to provide adequate margin in the pump suction pressure to prevent system isolations (Reference: LER 88-004, dated February 11, 1988.) All licensed operations personnel were instructed on the significance of these changes and the potential for RWCU system isolations. The reactor operator involved in this incident failed to follow plant procedures by placing the second RWCU pump in post-pump operation at a reactor pressure less than 200 psig.

Further investigations revealed that an inadequate pre-shift briefing, i.e., discussions on required hold points by the responsible shift superintendent, was a contributing factor.

E. Supplemental Corrective Actions

The reactor operator involved is this incident was counselled and disciplinary actions were taken. Additionally, the responsible Shift Superintendents were counselled on the importance of conducting proper pre-shift briefings.

F. Safety Assessment

There were no adverse safety consequences as a result of this incident. Containment isolation valves responded as designed. Further, no actual unidentified RWCU leakage was present.