

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 1 6					1 OF 0 1 3										
TITLE (4)																									
RWCU Isolation Due To Blown Fuse Caused By Working Conditions																									
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)											
									NA					0 5 0 0 0											
1	2	0	7	8	7	8	7	8	7	0	2	2	0	0	0	1	0	6	8	8	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)																							
	5	20.402(b)				20.405(c)				<input checked="" type="checkbox"/> 50.73(a)(2)(iv)					73.71(b)										
POWE LEVEL (10)		20.405(a)(1)(i)				50.36(e)(1)				50.73(a)(2)(v)					73.71(e)										
0 1 0 1 0		20.405(a)(1)(ii)				50.36(e)(2)				50.73(a)(2)(viii)					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)(ix)															
LICENSEE CONTACT FOR THIS LER (12)																									
NAME										TELEPHONE NUMBER															
Jewel Summers/Compliance Coordinator										6 0 1 4 3 7 1 - 2 1 4 9															
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																									
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRRDS											
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)															
YES (If yes, complete EXPECTED SUBMISSION DATE)										<input checked="" type="checkbox"/> NO															
										MONTH DAY YEAR															
ABSTRACT (Limits to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)																									
<p>On December 6, 1987 at 1815 Reactor Water Cleanup (RWCU) isolation valve 1G33-F004 closed due to a high temperature signal received from temperature switch N1G33-N008. This temperature signal is not an ESF actuation. The switch tripped prior to reaching its calibrated setpoint of 140 degrees F and is believed to have been tripped by Radio Frequency Interference (RFI). RWCU was restored to service in five minutes. A Maintenance Work Order was initiated. Instrumentation and Control technicians investigated the temperature switch since RWCU was being used as an alternate shutdown cooling method.</p> <p>On December 7, 1987 at 0130 RWCU isolation valves 1G33-F004, F054, and F039 closed due to an ESF actuation caused by a blown fuse. The fuse blew while troubleshooting temperature switch N1G33-N008 which had tripped earlier during the shift as discussed above. The fuse was replaced. However, the fuse blew a second time at 0200 during the troubleshooting effort. The switch is located in an area that requires full anti-contamination clothing and is mounted in a small metal enclosure on panel 1H22-P004 which makes access and troubleshooting difficult. These conditions contributed to the incident. A Limiting Condition for Operations was entered at 0130. The second fuse was replaced and the system restored to normal at 0220.</p>																									
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8801120122 880106 PDR ADOCK 05000416 S DCD																									

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

## A. REPORTABLE OCCURRENCE

On December 7, 1987 at 0130 Reactor Water Cleanup isolation valves 1G33-F004, F054, and F039 closed due to a blown fuse. This incident is reportable pursuant to 10CFR 50.73(a)(2)(iv).

## B. INITIAL CONDITION

The plant was in Mode 5 - Refueling Outage Number 2 in progress at the time of the incident with the vessel head off and reactor cavity flooded.

## C. DESCRIPTION OF OCCURRENCE

On December 6, 1987 at 1815 Reactor Water Cleanup (RWCU) isolation valve 1G33-F004 closed due to a high temperature signal received from temperature switch 1G33-N008 (GG-1CE-TS-N008). The high temperature signal is not considered an ESF actuation. The switch tripped prior to reaching its calibrated setpoint of 140 degrees F and is believed to have been tripped by Radio Frequency Interference (RFI). RWCU was restored to service in five minutes. A Maintenance Work Order (MWO) was initiated to investigate the incident.

On December 7, 1987 at 0130 Instrumentation and Control (I&C) technicians, working under the MWO discussed above, were instructed to troubleshoot the temperature switch. RWCU at the time was being used as an alternate shutdown cooling method and required prompt attention. While working on the switch, with the temperature switch contact leads lifted, fuse B21-F18 (GG-1JM-FU-F18) blew. This fuse, located in the Control Room, supplies power to four parallel relays which are the final steps of the ESF isolation logic for RWCU outboard isolation valves. Since these are normally energized relays, the loss of power caused Motor Operated Valves (MOVs) 1G33-F004, 1G33-F054, and 1G33-F039 to close.

A Limiting Condition for Operation (LCO) was entered at 0130. The fuse was replaced and RWCU restored to operation. However, RWCU isolated again at approximately 0200 when fuse B21-F18 blew a second time during the troubleshooting effort. The leads were relanded, the fuse was again replaced and RWCU restored to operation at 0220. Temperature switch 1G33-N008 was calibrated and found to be within tolerance.

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## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

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

## D. APPARENT CAUSE

The exact cause of blown fuse B21-F18 is indeterminate. It is believed that the technicians may have inadvertently and unknowingly grounded the energized leads while troubleshooting the temperature switch. Environmental conditions may have been another contributing factor, in that temperature switch N1G33-N008 is located in an area which requires full anti-contamination clothing and is mounted on panel 1H22-P004 in a small metal enclosure which made access difficult.

A similar event was documented in LER 87-020 involving isolation of RHR Shutdown Cooling due to a blown fuse. While in LER 87-020 the exact cause of the blown fuse was indeterminate, there was no activity in progress that was directly related to RHR as was the case in the event described here.

## E. SUPPLEMENTAL CORRECTIVE ACTION

Due to troubleshooting an energized circuit and dress out requirements, this incident is categorized as neither a personnel error nor an equipment failure; therefore, no further actions are required.

## F. SAFETY ASSESSMENT

RWCU was lost for 50 minutes as an alternate shutdown cooling method. However, Control Rod Drive (CRD) and Fuel Pool Cooling were available for use. Additionally, Residual Heat Removal (RHR) "B" was functional at the time of the incident. Reactor coolant temperature was not significantly affected by the isolation since the reactor cavity was flooded to greater than 22 feet, eight inches providing an increase coolant inventory; therefore, no safety consequences existed.

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OLIVER D. KINGSLEY, JR.  
Vice President  
Nuclear Operations

January 6, 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  
RWCU Isolation Due To Blown  
Fuse Caused By  
Working Conditions  
LER 87-022-00  
AECM-88/0001

Attached is Licensee Event Report (LER) 87-022-00 which is a final report.

Yours truly,

ODK:rg  
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  
7920 Norfolk Avenue  
Bethesda, Maryland 20814

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