



Entergy

Entergy Operations, Inc.

P. O. Box 756

Port Gibson, MS 39150

Tel 601 437 6409

Fax 601 437 2795

William A. Eaton

Vice President.

Operations

Grand Gulf Nuclear Station

November 22, 2000

U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Document Control Desk

Subject: Grand Gulf Nuclear Station
Docket No. 50-416
License No. NPF-29
LER 2000-007-00
Plant Outside of its Design Basis With Respect to Appendix R

GNRO-2000/00088

Ladies & Gentlemen:

Attached is Licensee Event Report (LER) 2000-007-00 which is a final report.

Yours truly,

WAE/ACG:acg

attachment:

cc:

Licensee Event Report (LER) 2000-007-00

Mr. Timothy Hoeg, GGNS Senior Resident (w/a)

Mr. D. E. Levanway (Wise Carter) (w/a)

Mr. L. J. Smith (Wise Carter) (w/a)

Mr. N. S. Reynolds (w/a)

Mr. H. L. Thomas (w/o)

Mr. E. W. Merschoff (w/2)

Regional Administrator

U.S. Nuclear Regulatory Commission

Region IV

611 Ryan Plaza Drive,

Suite 400 Arlington, TX 76011

Mr. S. P. Sekerak, NRR/DLPM/PD IV-1 (w/2)

ATTN: ADDRESSEE ONLY

U.S. Nuclear Regulatory Commission

One White Flint North, Mail Stop O7-D1

11555 Rockville Pike

Rockville, MD 20852-2378

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NRC FORM 366 (6-1998)		U.S. NUCLEAR REGULATORY COMMISSION			APPROVED BY OMB NO. 3150-0104 EXPIRES 06/30/2001 Estimated burden per response to comply with this mandatory information collection request: 50.0 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Records Management Branch (T-6 F33), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.							
LICENSEE EVENT REPORT (LER)												
FACILITY NAME (1) Grand Gulf Nuclear Station					DOCKET NUMBER (2) 05000-416		PAGE (3) 1 of 3					
TITLE (4) Title: Plant Outside of its Design Basis with Respect to Appendix R												
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	DOCKET NUMBER		
10	26	2000	2000	007	00	11	22	2000	N/A	N/A		
									FACILITY NAME	DOCKET NUMBER		
									N/A	N/A		
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more) (11)										
1		20.2201(b)				20.2203(a)(2)(v)		50.73(a)(2)(i)		50.73(a)(2)(viii)		
POWER LEVEL (10)		20.2203(a)(2)(i)				20.2203(a)(3)(i)		50.73(a)(2)(ii)		50.73(a)(2)(x)		
100		20.405(a)(1)(ii)				20.2203(a)(3)(ii)		50.73(a)(2)(iii)		73.71		
		20.2203(a)(2)(ii)				20.2203(a)(4)		50.73(a)(2)(iv)		OTHER		
		20.2203(a)(2)(iii)				50.36(c)(1)		50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A		
		20.2203(a)(2)(iv)				50.36(c)(2)		50.73(a)(2)(vii)				
LICENSEE CONTACT FOR THIS LER (12)												
NAME Name / Title Avinash C. Goel/Sr. Licensing Engineer					TELEPHONE NUMBER (Include Area Code) 601-437-6296							
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)												
CAUSE	SYSTEM	COMPONENT	MANUFACTURER			REPORTABLE TO EPIX		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
SUPPLEMENTAL REPORT EXPECTED (14)								EXPECTED SUBMISSION DATE (15)				
YES (If yes, complete EXPECTED SUBMISSION DATE).						X NO				MONTH DAY YEAR		
ABSTRACT (Limit to 1400 spaces, i. e., approximately 15 single-spaced typewritten lines) (16)												
<p>The Kaowool fire wrap system is used in certain plant areas as a nominal 1-hour fire barrier to satisfy GGNS' License Condition to meet 10CFR50, Appendix R, Section III.G.2.c commitments. While performing plant walkdowns as part of the GGNS effort to address Kaowool issues in SECY 99-204, deficiencies were identified with the as-installed fire barrier configuration. The initial evaluation identified a condition that may prevent the fire barrier from providing adequate protection for raceways containing Division I and II circuits for ESF Switchgear Room Coolers which support the operation of redundant Division I and II SSD components. Loss of Coolers may potentially affect Division I and II SSD capability. The affected area was under an hourly fire watch. Early warning fire detection and automatic fire suppression are available in this area. Review of the GGNS IPEEE Fire Model confirms that due to the location of the SSD raceways and the projected flame spread of a fire, a transient or fixed fire in this area is not expected to damage these cables. Additionally, there is an alternative method of actuating the affected Coolers locally. Therefore, in the event of a fire in the affected area, the ability of the plant to shutdown and maintain shutdown condition would be maintained.</p> <p>However, the event is being reported pursuant to 10CFR50.73(a)(2)(ii).</p>												

NRC FORM 366A

U.S. NUCLEAR REGULATORY COMMISSION

(6-1998)

LICENSEE EVENT REPORT (LER)

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Grand Gulf Nuclear Station, Unit 1	05000-416	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 3
		2000	007	00	

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

A. Reportable Occurrence

The Kaowool fire wrap system is used in certain areas of the plant as a nominal 1-hour fire barrier to satisfy GGNS License Condition to meet 10CFR50, Appendix R, Section III.G.2.c commitments. While performing plant walkdowns as part of the GGNS efforts to address Kaowool issues in SECY 99-204, deficiencies were identified with the as-installed fire barrier configuration. On October 26, 2000, the initial engineering evaluation concluded that a fire in Fire Zone 1A211 may damage redundant safe shutdown components.

Per 10CFR50.72(b)(1)(ii), on October 26, 2000, a one-hour telephone notification was made to the NRC's Emergency Notification System – a condition that places the plant outside its design basis.

Based on conservative assumptions regarding the impact of a single fire affecting safe shutdown capability coupled with NRC and industry concerns about the qualification of the Kaowool fire barrier, GGNS is reporting this condition in accordance with 10CFR50.73(a)(2)(ii) – a condition that is outside the design basis of the plant.

B. Initial Conditions

At the time of the discovery of the event the reactor was in OPERATIONAL MODE 1 with reactor power of approximately 100 percent.

C. Description of Occurrence

The Kaowool fire wrap system is used in various areas of the plant to provide a nominal 1-hour fire barrier to satisfy GGNS license condition for meeting 10CFR50, Appendix R, Section III.G.2.c commitments. As a result of the field walk-downs to resolve NRC concerns promulgated in SECY 99-204, the following deficiency was identified with the as-installed Kaowool fire wrap configuration on raceways containing redundant safe shutdown circuits.

In Fire Zone 1A211, a deficiency was identified where a Division I safe shutdown cable protruded outside of the Appendix R fire wrap and the redundant Division II cable would be exposed to the same exposure fire hazard due to the unistrut support members penetrating the supported raceway not being enclosed in the Appendix R fire wrap, thus creating a through path for fire impingement into the Division II raceway. The horizontal distance between the deficiencies identified in the Division I and the Division II trays is approximately 10 feet. The Fire Hazards Analysis identifies the combustible loading in this area to be representative of a fire with a duration of less than 30 minutes. These cable trays contain instrumentation and control circuits for multiple Division I and Division II ESF Switchgear Room Coolers (System T46). These Room Coolers, which are the only functionally redundant components affected by this deficiency, support the operation of multiple redundant SSD components for Divisions I and Division II circuits that are required for achieving and maintaining safe shutdown conditions of the plant in the event of a fire.

D. Apparent Cause

The cause of this deficiency has been determined to be the inadequate level of detail provided in the documents used for the Kaowool installation. The details did not address configurations other than straight runs of cable tray with no supports or intervening structural steel members. The installation details specifically address straight runs of cable tray and provide no guidance for transitions between vertical and horizontal trays, T-sections, tray intersections, bends, supports, etc.

E. Corrective Actions

Immediate Corrective Actions:

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

Division I

The non-conforming conditions on the Division I raceways in Fire Zone 1A211 were reworked/repared. The fire watch remains in place since the overall qualification of the Kawool fire wrap system is still being addressed. The immediate Corrective Action restores the Division I raceways into compliance with the original design requirements.

Division II

The non-conforming conditions on Division II raceway supports in Fire Zone 1A211 were reworked/repared, to eliminate the identified deficiency.

No immediate actions were taken to confirm and/or correct the potential discrepancy with the configuration of the Kaowool wrap on the identified raceway in Fire Zone 1A211; however, a destructive examination of the Kaowool fire wrap on this raceway has been scheduled as part of the ongoing Kaowool Project configuration validation effort. The fire watch remains in place since the overall qualification of the Kawool fire wrap system is still being addressed.

Long Term Corrective Actions:

The long-term resolution of the issues will be addressed in the Kaowool resolution project plan and being controlled under CR 1999-1004.

F. Safety Assessment

The safety significance evaluation using GGNS IPEEE fire modeling for Fire Probabilistic Risk Assessment was performed for the affected Fire Zone (1A211). Considering the potential ignition sources, the associated energy released, cable damage temperature heights and the proximity of the raceways to fixed combustibles in the area, no damage to the unprotected cables is expected to result from a postulated fire. This area is protected by an automatic sprinkler system and smoke detection. The area is currently under an hourly fire watch.

Additionally, although not proceduralized, there is an alternative method of actuating the affected Room Coolers Q1T46-B001A-A and Q1T46-B002A-A locally for their respective Division I switchgear rooms. The panels for Control Room Fire Alternative Shutdown purposes have the capability to isolate the T46 circuits and allow the affected Room Coolers to be manually controlled from these locations. If used for this purpose, at least one train of SSD components (Division I) would be capable of performing its required function. Each of these rooms should remain accessible during a postulated fire in Fire Zone 1A211, as the rooms are at a significant distance from this location. Also, initial loss of the room cooler capability would not result in an immediate loss of function of the supported equipment, which should allow time to implement this or other compensatory measures.

All of the above provide adequate assurance that in the event of a fire, the affected redundant SSD components required to shutdown and maintain safe shutdown conditions are not impacted and the safety significance of the nonconforming conditions is minimal.

G. Additional Information

None