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Port Gibson, MS 39150

David R Ellis  
Acting Regulatory Assurance Manager  
Grand Gulf Nuclear Station  
Tel. (601) 437-2489

GNRO-2017/00046

July 13, 2017

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
11555 Rockville Pike  
Rockville, MD 20852

SUBJECT: Outside-of-Tech-Spec-Allowable-Value Automatic Depressurization System  
(ADS) initiation timer relay because of age degradation.  
Docket No. 50-416  
License No. NPF-29

Dear Sir or Madam:

Attached is Licensee Event Report (LER) 2017-004-00, Outside-of-Tech-Spec-Allowable-Value Automatic Depressurization System (ADS) initiation timer relay because of age degradation, which is a final report.

This letter contains no new commitments. Should you have any questions or require additional information, please contact David Ellis at (601) 437-2489.

Sincerely,

A handwritten signature in black ink, appearing to read "David R Ellis", written over a large, loopy scribble.

David R Ellis  
Acting Regulatory Assurance Manager  
Grand Gulf Nuclear Station

DRE/amh

Attachment: Licensee Event Report (LER) 2017-004-00.

cc: (See Next Page)

cc: with Attachment and Enclosures

Mr. John P. Boska, Project Manager  
Plant Licensing Branch 1-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Mail Stop 0-8-C2  
Washington, DC 20555

Mr. Kriss M. Kennedy  
U.S. Nuclear Regulatory Commission  
Regional Administrator, Region IV  
1600 East Lamar Boulevard  
Arlington, TX 76011-4511

Mr. Siva Lingham  
U.S. Nuclear Regulatory Commission  
Mail Stop OWFN 8 B1  
Rockville, MD 20852-2738

NRC Senior Resident Inspector  
Grand Gulf Nuclear Station  
Port Gibson, MS 39150

## Attachment

Licensee Event Report (LER) 2017-004-00.



**LICENSEE EVENT REPORT (LER)**

(See Page 2 for required number of digits/characters for each block)

(See NUREG-1022, R.3 for instruction and guidance for completing this form  
http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/)

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing collection process and fed back to industry. Send comments regarding burden estimate to the Information Services Branch (T-2 F43), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NE0B-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose 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.

**1. FACILITY NAME**

Grand Gulf Nuclear Station, Unit 1

**2. DOCKET NUMBER**

05000 416

**3. PAGE**

1 OF 3

**4. TITLE**

Outside-of-Tech-Spec-Allowable-Value Automatic Depressurization System (ADS) initiation timer relay because of age degradation.

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
05	26	2017	2017 - 004 - 00			07	13	2017	N/A	05000 N/A
									N/A	05000 N/A

**11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)**

<b>9. OPERATING MODE</b>  MODE 1	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)
<b>10. POWER LEVEL</b>  100	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> 73.77(a)(1)
	<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	<input type="checkbox"/> 73.77(a)(2)(i)
	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> 73.77(a)(2)(ii)
		<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> OTHER Specify in Abstract below or in NRC Form 366A	

**12. LICENSEE CONTACT FOR THIS LER**

FACILITY NAME David Ellis / Manager (acting), Regulatory Assurance	TELEPHONE NUMBER (Include Area Code) (601) 437-2489
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**13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT**

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
X					NA	NA	NA	NA	NA

**14. SUPPLEMENTAL REPORT EXPECTED**


YES (If yes, complete 15. EXPECTED SUBMISSION DATE)  NO

**15. EXPECTED SUBMISSION DATE**

MONTH	DAY	YEAR
12	14	2017

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On May 26, 2017, while performing the Automatic Depressurization System (ADS) quarterly surveillance the time delay on the ADS initiation timer relay was found outside of its technical specification allowable value of  $\leq 115$  seconds, as documented in the corrective action program. Inadequate preventative maintenance is identified as the likely causal factor resulting in degradation to the timing function for the ADS initiation timer relay. The causal analysis is ongoing and this licensee event report may be supplemented upon completion of this analysis. This event is reportable as a license event report (LER) in accordance with NUREG-1022, Section 3.2.2, and 10CFR50.73(a)(2)(i)(B), because it was a "condition prohibited by Technical Specifications." No loss of safety function would have occurred for this condition.

NRC FORM (4-2017)	366A U.S. NUCLEAR REGULATORY COMMISSION	APPROVED BY OMB: NO. 3150-0104	EXPIRES: 3/31/2020	
 <b>LICENSEE EVENT REPORT (LER) CONTINUATION SHEET</b>		Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Information Services Branch (T-2 F43), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose 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.		
(See NUREG-1022, R.3 for instruction and guidance for completing this form <a href="http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/">http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/</a> )				
<b>1. FACILITY NAME</b>	<b>2. DOCKET</b>	<b>3. LER NUMBER</b>		
Grand Gulf Nuclear Station, Unit 1	05000 416	YEAR	SEQUENTIAL NUMBER	REV. NO.
		2017 - 004 - 00		
<b>NARRATIVE</b>				
<p><b>DESCRIPTION</b></p> <p>On May 26, 2017, while performing Automatic Depressurization System (ADS) quarterly surveillance, the time delay on the ADS initiation timer relay was found outside of its technical specification allowable value of <math>\leq 115</math> seconds, as documented in the corrective action program.</p> <p>The failure mechanism is the degradation of timing function for the ADS initiation timer relay that delays initiation of ADS in order to allow time for high pressure injection to restore reactor water level. The technical specification allowable value for this timer is less than or equal to 115 seconds. The as found value was beyond this value, indicating that this timer was inoperable prior to the adjustment. This surveillance is performed on a quarterly basis. This same condition was found during the last surveillance on February 23, 2017. The surveillance performed prior to that on 11/18/2016 had as founds that were within tolerance.</p> <p>Automatic Depressurization System is required in modes 1, 2, and 3 with the reactor above 150 psig. Therefore this function was not required from November 18, 2016 to January 30, 2017, which is when the reactor reached 150 psig in mode 2. Between November 18, 2016 and January 30, 2017 plant was in Mode 4.</p> <p>Automatic Depressurization System initiation is accomplished by energization of either the Division 1 or Division 2 solenoids associated with each of the ADS valves. The logic for each division is separate. Therefore, the automatic safety function would still be accomplished within the allowable time provided that the Division 2 system was Operable. The Division 2 initiation logic was taken out of service on March 10, 2017, to support performance of surveillance 06-EL-1B21-Q-0001. In order to determine if the Division 1 logic would have initiated within the allowable time during the period when the Division 2 logic was inoperable, an additional review was performed. The average rate of change of the setpoint between surveillances was 0.402 seconds/day for the first interval (November 18, 2016 – February 23, 2017) and 0.424 seconds/day for the second interval (February 23, 2017 – May 26, 2017). Use of the larger rate of change is conservative, and therefore a rate of 0.424 seconds/day was assumed. Linearly extrapolating from an as left condition of 104 seconds on February 23, 2017, it is concluded that the setpoint would have been 110.4 seconds on March 10, 2017. This value is within the 115 second TS AV. Therefore it is concluded that no loss of safety function would have occurred for this condition. The linearity assumption was validated as conservative on subsequent calibration.</p> <p><b>REPORTABILITY</b></p> <p>This event is reportable as a license event report (LER) in accordance with NUREG-1022, Section 3.2.2, and 10CFR50.73(a)(2)(i)(B), because it was a "condition prohibited by Technical Specifications."</p>				



LICENSEE EVENT REPORT (LER)  
CONTINUATION SHEET

(See NUREG-1022, R.3 for instruction and guidance for completing this form  
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Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Information Services Branch (T-2 F43), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to [Infocollects.Resource@nrc.gov](mailto:Infocollects.Resource@nrc.gov), and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose 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.

1. FACILITY NAME	2. DOCKET	3. LER NUMBER		
Grand Gulf Nuclear Station, Unit 1	05000 416	YEAR	SEQUENTIAL NUMBER	REV. NO.
		2017 - 004 - 00		

**NARRATIVE**

**CAUSE**

The cause of the failure mechanism is the degradation of timing function for the ADS initiation timer relay 1B21-K5A. The degradation of the timer relay is most likely due to the electrolytic capacitors.

This section will be supplemented upon completion of the analysis.

**CORRECTIVE ACTIONS**

The event was entered into the Grand Gulf Nuclear Station corrective action program and the causal analysis is ongoing.

**SAFETY SIGNIFICANCE**

There were no nuclear safety consequences or radiological consequences as a result of this event. No Technical Specification Safety Limits were violated.

This section will be supplemented upon completion of the analysis.

**PREVIOUS SIMILAR OCCURRENCES**

LER 2017-002-00 Loss of Secondary Containment and Inoperability of the Standby Gas Treatment Systems.

LER 2015-003-00 Technical Specification Surveillance on Primary Containment Isolation Valves.

LER 2016-008-00 Entry into Mode of Applicability with the Alternate Decay Heat Removal System Inoperable.

LER 2016-009-00 Entry into Mode of Applicability with the Oscillation Power Range Monitor Upscale Settings Incorrectly Set.

The identified licensee event reports were reviewed and it has been determined that the causes and corrective actions for the previously identified events were sufficiently different that they could not have predicted or prevented the occurrence of this event.