



Entergy Operations, Inc.
P. O. Box 756
Port Gibson, MS 39150

Eric A. Larson
Site Vice President
Grand Gulf Nuclear Station
Tel. (601) 437-7500

10CFR50.73

GNRO-2018/00010

March 29, 2018

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

SUBJECT: Licensee Event Report 2018-001-00, Reactor Manual Shutdown due to Turbine Pressure Control Valve Position Changes
Grand Gulf Nuclear Station, Unit 1
Docket No. 50-416
License No. NPF-29

Dear Sir or Madam:

Attached is Licensee Event Report 2018-001-00, Reactor Manual Shutdown due to Turbine Pressure Control Valve Changes. This report is being submitted in accordance with 10CFR50.73(a)(2)(iv)(A) for any event or condition that resulted in a manual or automatic actuation of any of the systems listed in 10CFR50.73(a)(2)(iv)(B).

This letter contains no new commitments. If you have any questions or require additional information, please contact Douglas Neve at 601-437-2103.

Sincerely,

A handwritten signature in black ink, appearing to read "E. A. Larson".

Eric A. Larson
Site Vice President
Grand Gulf Nuclear Station
EAL/dre

Attachment: Licensee Event Report 2018-001-00

cc: see next page

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

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

U. S. Nuclear Regulatory Commission
ATTN: Mr. Kriss Kennedy, NRR/DORL (w/2)
Mail Stop OWFN 8 B1
Washington, DC 20555-0001

GNRO-2018/00010

Attachment

Licensee Event Report 2018-001-00

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 FOIA, Privacy and Information Collections Branch (T-5 F53), 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.



**LICENSEE EVENT REPORT
(LER)**

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

1. FACILITY NAME

Grand Gulf Nuclear Station, Unit 1

2. DOCKET NUMBER

05000 416

3. PAGE

1 OF 3

4. TITLE

Reactor Manual Shutdown due to Turbine Pressure Control Valve Position Changes

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
01	30	2018	2018-001-00			03	29	2018	N/A	05000 N/A
									N/A	05000 N/A

9. OPERATING MODE

MODE 1

10. POWER LEVEL

91%

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

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

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME

Douglas Neve / Manager, Regulatory Assurance

TELEPHONE NUMBER (Include Area Code)

(601) 437-2103

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
B	H13	1H13P825 JCO5 C332	Siemens	Yes	N/A	N/A	N/A	N/A	N/A

14. SUPPLEMENTAL REPORT EXPECTED

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

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR
N/A	N/A	N/A

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

On January 30, 2018, Grand Gulf Nuclear Station (GGNS) was operating in Mode 1 at 91% power and was in the process of increasing power. At 1739 hours CST on January 30, 2018, GGNS experienced main turbine control valve (TCV) position changes of between 3 and 5 percent and main generator output load changes of approximately 20 megawatts with a periodicity of approximately 3 seconds.

At 1822 on January 30, 2018, operators performed a manual shut down of the reactor by moving the reactor mode switch from RUN to SHUTDOWN to place the unit in Mode 3. Upon reactor shutdown all systems performed as designed and no subsequent safety system actuations occurred. The cause of the manual shutdown was conservative operator response to unanticipated main turbine generator output changes. Corrective actions include adjustments to the control circuit, and revision of work task documents for adjustment of the control circuits.

There were no consequences to the general safety of the public, nuclear safety, industrial safety and radiological safety for this event.



LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET

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 FOIA, Privacy and Information Collections Branch (T-5 F53), 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..

1. FACILITY NAME	2. DOCKET	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV. NO.
Grand Gulf Nuclear Station, Unit 1	05000 416		2018-001-00	

NARRATIVE

A. PLANT CONDITIONS PRIOR TO THE EVENT

Grand Gulf Nuclear Station (GGNS) Unit 1 was operating at 91% power in Mode 1 and increasing power. There were no Structures, Systems, or Components that were inoperable that contributed to the event.

B. DESCRIPTION

At 1739 hours CST on January 30, 2018, while the plant was operating at approximately 91% reactor power/1322 megawatts electric power (mwe), operators observed a 20 mwe electrical oscillation (peak to peak) with a periodicity of approximately 3 seconds. Concurrent oscillations of between 3 and 5% were noted on all four turbine control valves.

At 1822 hours on January 30, 2018, operators performed a manual shutdown of the reactor by moving the reactor mode switch from RUN to SHUTDOWN. Upon reactor shutdown all systems performed as designed and no subsequent safety system actuations occurred.

C. REPORTABILITY

This report is made pursuant to 10CFR50.73(a)(2)(iv)(A) for any event or condition that resulted in a manual or automatic actuation of any of the systems listed in 10CFR50.73(a)(2)(iv)(B). This event was reported under 10CFR50.72(b)(3)(iv)(B)(1) in ENS notification 53115.

D. CAUSE

The cause of the reactor scram was a manual shutdown of the reactor due to operator concerns about main generator output variations, caused by unanticipated turbine pressure control valve (TCV) motion.

The turbine pressure control system controls turbine speed, operates the steam bypass system to keep reactor pressure within limits and avoid transients, and controls main turbine inlet pressure.

The unanticipated TCV motion was caused by an incorrect setting in one element of a three element turbine control anti-resonance circuit. The incorrect setting did not create an error of such magnitude as to be automatically excluded from the circuit internal diagnostics, but did create enough compensatory response from the TCV to be discernable by the operating crew.

The cause evaluation is in progress and the licensee event report will be updated if any substantive changes in the cause or corrective actions.

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LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET

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E. CORRECTIVE ACTIONS

The following corrective actions are completed or planned.

Completed:

- Control circuit card has been replaced and adjusted to correct tolerances and retested satisfactorily.

Planned actions included in the corrective action program which may be changed in accordance with the program:

- Revise procedure to set up TCV circuitry to reflect appropriate test report

F. SAFETY SIGNIFICANCE

The safety significance of this event is low because all systems operated as designed and the TCV changes did not challenge any safety parameters. The manual scram was performed as a conservative measure. There were no actual nuclear safety consequences or radiological consequences during the event.

G. PREVIOUS SIMILAR EVENTS

Entergy conducted a three-year review of the relevant licensee event reports and determined that there was one similar known event reported as GGNS Licensee Event Report 2016-05-00 "Automatic Reactor SCRAM." The failure in that event was a failed amplifier card, which is different from this event which is an incorrect potentiometer setting. Therefore, the corrective actions for the previous event would not have prevented this event.