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10 CFR 50.73

GNRO2021/00036

November 04, 2021

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

SUBJECT: Grand Gulf Nuclear Station, Unit 1 Licensee Event Report 2021-003-00,
High Pressure Core Spray Declared Inoperable.

Grand Gulf Nuclear Station, Unit 1
Docket No. 50-416
Renewed License No. NPF-29

Attached is Licensee Event Report 2021-003-00, High Pressure Core Spray Declared Inoperable. This report is being submitted in accordance with 10 CFR 50.73(a)(2)(v)(D), any event or condition that could have prevented the fulfillment of the safety function needed to mitigate the consequences of an accident.

This letter contains no new Regulatory Commitments. Should you have any questions concerning the content of this letter, please contact Jeff Hardy, Regulatory Assurance Manager at 802-380-5124.

Sincerely,

A handwritten signature in black ink, appearing to read "JAH" followed by a flourish.

JAH/saw

Attachments: Licensee Event Report 2021-003-00

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

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

Attachment
Licensee Event Report 2021-003-00



LICENSEE EVENT REPORT (LER)

(See Page 3 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-m/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 process and fed back to industry. Send comments regarding burden estimate to the FOIA, Library, and Information Collections Branch (T-6 A10M), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to infocollections.Resource@nrc.gov, and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0104), Attn: Desk ail: oir_submission@omb.eop.gov. The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

1. Facility Name Grand Gulf Nuclear Station, Unit 1	2. Docket Number 05000416	3. Page 1 OF 2
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4. Title
High Pressure Core Spray Declared Inoperable

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
09	09	2021	2021	- 003 -	00	11	04	2021	N/A	05000 N/A
									N/A	05000 N/A

9. Operating Mode 1	10. Power Level 70
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11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: (Check all that apply)

<input type="checkbox"/> 10 CFR Part 20	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	10 CFR Part 73
<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.69(g)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(4)
<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> 73.71(a)(5)
<input type="checkbox"/> 20.2203(a)(2)(i)	10 CFR Part 21	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input checked="" type="checkbox"/> 50.73(a)(2)(v)(D)	<input type="checkbox"/> 73.77(a)(1)(i)
<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 21.2(c)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> 73.77(a)(2)(i)
<input type="checkbox"/> 20.2203(a)(2)(iii)	10 CFR Part 50	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	<input type="checkbox"/> 73.77(a)(2)(ii)
<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	
<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)	
<input type="checkbox"/> Other (Specify here, in abstract, or NRC 366A)				

12. Licensee Contact for this LER

Licensee Contact Jeff Hardy, Manager Regulatory Assurance	Telephone Number (include Area Code) (802)-380-5124
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13. Complete One Line for each Component Failure Described in this Report

Cause	System	Component	Manufacturer	Reportable To IRIS	Cause	System	Component	Manufacturer	Reportable To IRIS
X	BJ	RLY	GE	N	N/A	N/A	N/A	N/A	N/A

14. Supplemental Report Expected <input type="checkbox"/> Yes (If yes, complete 15. Expected Submission Date) <input checked="" type="checkbox"/> No	15. Expected Submission Date Month: N/A Day: N/A Year: N/A
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Abstract (Limit to 1560 spaces, i.e., approximately 15 single-spaced typewritten lines)

On September 9, 2021, at 0033 CT, while Grand Gulf Nuclear Station was operating in MODE 1 at 70 percent power, the control room received the following alarms: High Pressure Core Spray System (HPCS) Out of Service, along with HPCS Motor Operated Valve/Overload Power loss status light. Additionally, the HPCS Min Flow to Suppression Pool light indication was lost.

An operator and electrician were dispatched to the HPCS Min Flow to Suppression Pool Breaker, reporting back that the breaker was in the closed position. Troubleshooting identified the following: HPCS MIN FLO TO SUPP POOL, control circuit alarm relay, shorted causing the control transformer fuse to fail.

The direct cause of equipment failure was the alarm relay, associated with breaker HPCS Min Flow to Suppression Pool Breaker, failed due to the coil shorting. This caused the control circuit fuse to blow resulting in the inability to open the High Pressure Core Spray min flow valve to the suppression pool.

Immediate action taken was to replace the damaged relay and associated control fuse.

There were no consequences to the general safety of the public, nuclear safety, industrial safety or radiological safety. No radiological releases occurred due to this event.



**LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET**

(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 process and fed back to industry. Send comments regarding burden estimate to the FOIA, Library, and Information Collections Branch (T-6 A10M), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@nrc.gov, and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0104), Attn: Desk Officer for the Nuclear Regulatory Commission, 725 17th Street NW, Washington, DC 20503; e-mail: oira_submission@omb.eop.gov. The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Grand Gulf Nuclear Station, Unit 1	05000-416	2021	- 003	- 00

NARRATIVE

Plant Conditions:

Grand Gulf Nuclear Station (GGNS) Unit 1 was operating at 70 percent power in MODE 1. There were no Structures, Systems, or Components that were inoperable that contributed to this event.

Event Description:

On September 9, 2021, at 0033 CT, the control room received the following alarms: High Pressure Core Spray System (HPCS) [BJ] Out of Service, 1H13-P601-16A-H5 along with HPCS Motor Operated Valve/Overload Power loss status light. Additionally, the HPCS Min Flow to Suppression Pool light indication was lost.

An operator and electrician were dispatched to the HPCS Min Flow to Suppression Pool Breaker [BKR] (52-170109) and reported back that breaker was in the closed position. Troubleshooting the cause of the event identified that the HPCS MIN FLO TO SUPP POOL, control circuit alarm relay [RLY] device shorted causing the control transformer fuse to fail. This caused the hand switch for the Min Flow Valve to be non-functional. Loss of the control fuse caused the Min Flow Valve to be inoperable and resulted in declaring HPCS inoperable. The inability to open the Min Flow Valve adversely affects overall system injection response time to inject and provide containment isolation by closing.

This event was reported under 10 CFR 50.72(b)(3)(v)(D), any event or condition which could have prevented the fulfillment of a safety function needed to mitigate the consequences of an accident. (EN 55451)

This report is made in accordance with 10 CFR 50.73(a)(2)(v)(D), any event or condition that could have prevented the fulfillment of the safety function needed to mitigate the consequences of an accident.

Safety Assessment:

There were no actual consequences for this event. The event posed no threat to the health and safety of the general public or to nuclear safety as HPCS was inoperable but available. Industrial safety was not challenged, and there was no potential or actual radiological release during the event.

Event Cause(s):

The direct cause of equipment failure was the alarm relay, associated with breaker 52-170109, failed due to the coil shorting. This caused the control circuit fuse to blow resulting in the inability to open the High Pressure Core Spray min flow valve to the suppression pool.

Corrective Actions:

Work Order 567580 replaced the shorted control circuit alarm relay and blown control circuit fuse. Completed.

Generate Preventive Maintenance to replace General Electric (GE) alarm relay on the same 10-year frequency as the associated circuit breakers. AR 21010831

Previous Similar Events:

None.