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Grand Gulf Nuclear Station  
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10 CFR 50.73  
10 CFR 21.21

GNRO2022-00035

November 30, 2022

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

**SUBJECT:** Grand Gulf Nuclear Station, Unit 1 Licensee Event Report 2021-001-01,  
Primary Containment Outer Airlock Door Inoperable Due to Unacceptable  
Leak Rate

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

Attached is Licensee Event Report 2021-001-01, Primary Containment Outer Airlock Door Inoperable Due To Unacceptable Leak Rate. This report was previously submitted in accordance with 10 CFR 50.73(a)(2)(i)(B), as an operation or condition which was prohibited by the plant's Technical Specifications, and under 10 CFR 50.73(a)(2)(v)(D) as a condition that could have prevented the fulfillment of a safety function. This supplement is being provided to include the reporting criteria of 10 CFR 21.21.

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

Sincerely,

A handwritten signature in blue ink, appearing to read 'JAH' with a stylized flourish.

JAH

Attachments: Licensee Event Report 2021-001-01

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 2021-001-01**



**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-mv/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](mailto:infocollects.Resource@nrc.gov), and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0104), Attn: Desk all: [ora\\_submission@omb.eop.gov](mailto:ora_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.

<b>1. Facility Name</b> Grand Gulf Nuclear Station, Unit 1	<b>2. Docket Number</b> 05000416	<b>3. Page</b> 1 OF 3
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**4. Title**  
Primary Containment Outer Airlock Door Inoperable Due To Unacceptable Leak Rate

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
02	22	2021	2021	- 001 -	01	11	30	2022	N/A	05000 N/A
									N/A	05000 N/A

<b>9. Operating Mode</b> 1	<b>10. Power Level</b> 100
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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)	<b>10 CFR Part 73</b>
<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)	<b>10 CFR Part 21</b>	<input checked="" 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 checked="" 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)	<b>10 CFR Part 50</b>	<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) ((601) 437-2103
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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
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

<b>14. Supplemental Report Expected</b> <input type="checkbox"/> Yes (If yes, complete 15. Expected Submission Date) <input checked="" type="checkbox"/> No	<b>15. Expected Submission Date</b>	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 February 22, 2021, Grand Gulf Nuclear Station's Primary Containment Outer Airlock located on 208' elevation exceeded the Technical Specification (TS) Surveillance Requirements 3.6.1.2.1 leakage rate during the pre-maintenance barrel test due to gross leakage of the equalizing valve associated with the outer airlock door. Analysis determined that the inner and outer airlock equalizing valves were leaking – caused by lack of lubrication during valve installation.

This event is reportable under 10 CFR 50.73(a)(2)(i)(B), as an operation or condition which was prohibited by the plant's Technical Specifications. The event is also being reported under 10 CFR 50.73(a)(2)(v)(D) as a condition that could have prevented the fulfillment of a safety function. This supplement expands the original Licensee Event Report to include applicability of 10 CFR 21.2(c).

Actions taken were the lubrication and replacement of the equalizing valve on the outer door. The equalizing valve on the inner door was rebuilt with new O-rings and lubricated prior to reinstallation. Following replacement of the outer door and rebuild of the inner door, the local leak rate test (LLRT) was tested satisfactorily.

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  
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1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
Grand Gulf Nuclear Station, Unit 1	05000-416	YEAR	SEQUENTIAL NUMBER	REV NO.
		2021	- 001	- 01

**NARRATIVE**

**Plant Conditions:**

Grand Gulf Nuclear Station (GGNS) Unit 1 was operating at 100 percent power in MODE 1. There were no Structures, Systems, or Components that were inoperable that contributed to this event.

**Event Description:**

On February 22, 2021, GGNS's Primary Containment [NH] Airlock [AL] outer door located on 208' elevation exceeded the Technical Specification (TS) Surveillance Requirements (SR) 3.6.1.2.1 leakage rate during the pre-maintenance barrel test due to gross leakage of the 1M23F018D equalizing valve [V] associated with the outer airlock door, resulting in a condition that could have prevented the fulfillment of a safety function during times when the inner airlock door was open.

A maintenance work window for the 208' Containment Personnel Airlock outer door was scheduled for February 22, 2021. As part of the maintenance evolution, the airlock barrel local leak rate test (LLRT) was performed to identify any leaking components needing to be repaired during the maintenance window. Technical Specification 3.6.1.2, Primary Containment Airlocks, was entered on February 22, 2021, at 0530 hrs. for the maintenance window.

Per calculation MC-Q1M23-16001, the maximum allowable primary containment leakage rate (La) for the calculated maximum peak containment pressure (Pa) 12.1psig is 337,617 SCCM. Per SR 3.6.1.2.1 overall airlock leakage rate is less than or equal to 0.05 times La which is 16,880 SCCM.

Analysis determined that the equalizing valves had failed prior to February 22 due to lack of lubrication during installation. The Containment Airlock outer door was declared inoperable due to excessive leakage. In accordance with TS 3.6.1.2 Condition (One or more primary containment airlocks with one primary containment airlock door inoperable), the OPERABLE door should be closed and locked in the affected airlock. The required actions were not met in the required completion time. This event is reportable under 10 CFR 50.73(a)(2)(i)(B), any operation or condition which was prohibited by the plant's Technical Specifications.

This also resulted in a condition that could have prevented the fulfillment of a safety function to mitigate the consequences of an accident, during times when the inner airlock door was open, and is reportable under 10 CFR 50.73(a)(2)(v)(D).

Subsequent investigation led to the determination that the equalizing valves had been dedicated by a vendor and that lubrication was to have been performed during the dedication process. Lubrication was not performed, leading to the failure of the leakage test. As a result, this event is reportable under 10 CFR 21.2(c). The site formally completed its 10 CFR 21 Evaluation on October 17, 2022.

During the periods when the outer airlock door was inoperable, the inner airlock door either remained closed (Operable) or was opened for passage and under the control of site personnel. As a result, Entergy has determined that it did not result in a safety system functional failure. Therefore, in accordance with the guidance provided in NEI 99-02, Revision 7, Regulatory Assessment Performance Indicator Guideline, Section 2.2, Mitigating Systems Cornerstone, Sub-Section, Safety System Functional Failures, Page 30, Lines 27 through 30; this condition will not be counted as a safety system functional failure against Performance Indicator MS05, Safety System Functional Failures.



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CONTINUATION SHEET**

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		2021	- 001	- 01

**Safety Assessment:**

There were no actual consequences for this event. Primary Containment Inner Door was either closed and OPERABLE or under the direct control of site personnel during the identified condition. There was no radiological release from the primary containment as a result of this event. There were no other actual consequences to safety of the general public, nuclear safety, industrial safety, or radiological safety.

**Event Cause(s):**

The direct cause of the event was that the Primary Containment inner and outer airlock doors equalizing valves were leaking. The inner and outer airlock equalizing valves were not lubricated prior to installation causing premature failure of the O-rings to be the contributor to this event.

**Corrective Actions:**

Actions taken were the lubrication and replacement of the equalizing valve on the outer door. The equalizing valve on the inner door was rebuilt with new O-rings and lubricated prior to reinstallation. Following replacement of the outer door and rebuild of the inner door, the local leak rate test (LLRT) was conducted with satisfactory results. Additionally, the valve replacement instructions were updated to include lubricating the equalizing valve or verification of lubrication prior to installation to prevent future premature failure of the O-rings.

**Previous Similar Events:**

None.

**Additional Information:**

The equalizing valve is a Parker/Schrader bellows valve model number M096-818-05 and dedicated by Trentec.