



June 21, 2021

Docket No.: 50-348

NL-21-0561

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

Joseph M. Farley Nuclear Plant - Unit 1  
Licensee Event Report 2021-001-00  
Automatic Reactor Trip due to Turbine Generator Trip

Ladies and Gentlemen:

In accordance with the requirements of 10 CFR 50.73(a)(2)(iv)(A), Southern Nuclear Company is submitting the enclosed Licensee Event Report for Unit 1.

This letter contains no NRC commitments. If you have any questions regarding this submittal, please contact Gene Surber at (334) 661-2265.

Respectfully submitted,

Charles Kharrl  
Vice President – Farley

CK/rgs/cbg

Enclosure: Unit 1 Licensee Event Report 2021-001-00

Cc: Regional Administrator, Region II  
NRR Project Manager – Farley Nuclear Plant  
Senior Resident Inspector – Farley Nuclear Plant  
RTYPE: CFA04.054

**Joseph M. Farley Nuclear Plant - Unit 1  
Licensee Event Report 2021-001-00  
Automatic Reactor Trip due to Turbine Generator Trip**

**Enclosure**

**Unit 1 Licensee Event Report 2021-001-00**



**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-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 [Infocollcts.Resource@nrc.gov](mailto:Infocollcts.Resource@nrc.gov), and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0104), Attn: Desk alt: [oir\\_submission@omb.eop.gov](mailto: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.

<b>1. Facility Name</b> Joseph M. Farley Nuclear Plant, Unit 1	<b>2. Docket Number</b> 05000 348	<b>3. Page</b> 1 OF 2
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**4. Title**  
Automatic Reactor Trip due to Turbine Generator Trip

5. Event Date			6. LER Number			7. Report Date			8. Other Facilities Involved	
Month	Day	Year	Year	Sequential Number	Revision No.	Month	Day	Year	Facility Name	Docket Number
4	22	2021	2021	001	00	06	21	2021		05000
									Facility Name	Docket Number
										05000

<b>9. Operating Mode</b> 1	<b>10. Power Level</b> 048
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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 checked="" 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 type="checkbox"/> 50.73(a)(2)(i)(B)	<input 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)	<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)	

OTHER (Specify here, in abstract, or NRC 366A).

**12. Licensee Contact for this LER**

<b>Licensee Contact</b> Gene Surber, Licensing Manager	<b>Phone Number (Include area code)</b> (334) 661-2265
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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									

**14. Supplemental Report Expected**

No  Yes (If yes, complete 15. Expected Submission Date)

**15. Expected Submission Date**

Month	Day	Year

**16. Abstract (Limit to 1560 spaces, i.e., approximately 15 single-spaced typewritten lines)**

At 1450 CDT on April 22, 2021, with Farley Nuclear Plant (FNP) Unit 1 in Mode 1 at 48% power an automatic reactor trip occurred due to a main turbine trip. The main turbine / generator trip was due to data input error in the exciter switchgear software during exciter testing. The trip was not complex with all systems responding normally. Operations stabilized the plant in Mode 3. Due to low decay heat load, the Main Steam Isolation valves were closed to minimize cooldown and the Atmospheric Relief Valves were used to remove decay heat. This event was initially reported as event notification 55206.

Corrective Actions included correcting the data entry in the exciter switchgear control software and performing causal analysis on the human performance aspect of this event.

This event is reportable under 10CFR50.73(a)(2)(iv)(A) due to the automatic actuation of a system listed in 10CFR50.73(a)(2)(iv)(B).

FNP Unit 2 was not affected during 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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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 Officer for the Nuclear Regulatory Commission, 725 17th Street NW, Washington, DC 20503; e-mail: [oira\\_submission@omb.eop.gov](mailto: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 Joseph M. Farley Nuclear Plant, Unit 1	2. DOCKET NUMBER 05000- 348	3. LER NUMBER		
		YEAR 2021	SEQUENTIAL NUMBER 001	REV NO. 00

**NARRATIVE**

**A. EVENT / CAUSE DESCRIPTION:**

At 1450 CDT on April 22, 2021, with Farley Nuclear Plant (FNP) Unit 1 in Mode 1 at 48% power an automatic reactor trip [EEIS: JC] occurred due to a main turbine [EEIS: TA] trip. Unit 1 had just recently completed a refueling outage and was ascending in power. The unit was at 48% power with exciter switchgear [EEIS:TL] power ascension testing in progress by ABB contractors under the supervision of FNP Site Projects personnel. The ABB contractor updating the software made a human performance error and inserted an incorrect setpoint value within the exciter switchgear software. This caused the exciter to drive the excitation voltage and current on the generator to near zero. This caused a corresponding rise in generator current on all three phases. Ultimately, this sequence was secured when the distance relay [EEIS: TB / 21] provided a generator trip. This resulted in a cascading turbine trip and subsequent automatic reactor trip.

**B. SAFETY ASSESSMENT / REPORTABILITY:**

There were no safety consequences as result of this event. The operating crew responded correctly to the event. The applicable abnormal / emergency operating procedures were properly entered and documentation met expectations. This event was within the analysis of the UFSAR Chapter 15. Additionally, no radiological release occurred due to this event. This event is reportable under 10CFR50.73(a)(2)(iv)(A) due to the automatic actuation of the Reactor Protection System (RPS) as identified in 10CFR50.73(a)(2)(iv)(B).

**C. CORRECTIVE ACTIONS:**

Corrective Actions included correcting the data entry in the exciter switchgear control software and performing causal analysis on the human performance aspect of this event. Causal analysis determined there was a lack of risk recognition and over reliance on vendor expertise.

**D. PREVIOUS SIMILAR EVENTS:**

The following similar events were reported, however these similar events are component related and are not human performance related:

LER U2 2019-002-00, Manual Reactor Trip due to Misaligned Rod during Low Power Physics Testing

LER U2 2019-003-00, Manual Reactor Trip due to 2C Reactor Coolant Pump High Vibration Indication

**E. OTHER SYSTEMS AFFECTED:**

No other systems were affected by this event.