



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 Infocoll.Resource@nrc.gov, and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0104), Attn: Desk #1: 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.

1. Facility Name Braidwood Station, Unit 1	2. Docket Number 05000456	3. Page 1 OF 3
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4. Title
Unit Trip on Generator Load Rejection Due to Lightning Strike Within the Unit Switchyard Exceeding the Capabilities of the Switchyard Grounding System

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
6	21	2021	2021	- 002 -	00	08	18	2021	N/A	N/A
									Facility Name	Docket Number
									N/A	N/A

9. Operating Mode Mode 1 **10. Power Level** 100

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)	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 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)	

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

12. Licensee Contact for this LER

Licensee Contact Kevin Lueshen, Regulatory Assurance Manager **Phone Number (Include area code)** (815) 417-2800

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

14. Supplemental Report Expected

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

15. Expected Submission Date		
Month	Day	Year
N/A	N/A	N/A

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

On June 21, 2021 at 0051 hours, Unit 1 experienced an automatic reactor trip due to a generator lockout relay actuation and subsequent turbine trip and reactor trip.

The cause of the event was determined to be due to a lightning strike within the unit switchyard exceeding the capabilities of the switchyard grounding system, which resulted in induced voltage on the 125 Volt DC load rejection circuit for the Unit 1 generator output breakers. Planned corrective actions are to conduct a study of the grounding system and implement appropriate approved upgrades to the station and switchyard grounding grid to reduce the impact of future lightning strikes.

This event is reportable in accordance with 10 CFR 50.73(a)(2)(iv)(A) for "Any event or condition that resulted in manual or automatic actuation of any of the systems listed in paragraph (a)(2)(iv)(B) of this section, ..." Specifically, for 1) 10 CFR 50.73(a)(2)(iv)(B)(1) for the "Reactor protection system (RPS) including: reactor scram or reactor trip," and 2) 10 CFR 50.73(a)(2)(iv)(B)(6) for the "PWR auxiliary or emergency feedwater system."



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

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1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Braidwood Station, Unit 1	05000456	2021	- 002	- 00

NARRATIVE

A. Plant Operating Conditions Before the Event:

Event Date: June 21, 2021

Unit: 1 MODE: 1 Reactor Power: 100 percent

Unit 1 Reactor Coolant System (RCS) [AB]: Normal operating temperature and pressure

No structures, systems or components were inoperable at the start of this event that contributed to the event.

B. Description of Event:

On June 21, 2021 at 0051 CDT Braidwood Unit 1 experienced an automatic reactor trip due to a generator lockout relay actuation and subsequent turbine trip and reactor trip.

Both trains of auxiliary feedwater [BA] started automatically following the reactor trip to maintain steam generator water levels. All systems responded as expected with the exception of a failure of the source range nuclear instruments to automatically re-energize following the reactor trip. Both source range nuclear instruments were manually energized in accordance with station procedures.

This event is reportable in accordance with 10 CFR 50.73(a)(2)(iv)(A) for "Any event or condition that resulted in manual or automatic actuation of any of the systems listed in paragraph (a)(2)(iv)(B) of this section, ..." Specifically, for 1) 10 CFR 50.73(a)(2)(iv)(B)(1) for the "Reactor protection system (RPS) including: reactor scram or reactor trip," and 2) 10 CFR 50.73(a)(2)(iv)(B)(6) for the "PWR auxiliary or emergency feedwater system." This LER is being submitted in follow-up to ENS 55320 made on June 21, 2021.

C. Cause of Event

The cause of unit trip from the generator load rejection was determined to be due to a lightning strike within the unit switchyard exceeding the capabilities of the switchyard grounding system [FC], which resulted in induced voltage on the 125 Volt DC load rejection circuit for the Unit 1 generator output breakers.

D. Safety Consequences:

There were no safety consequences impacting plant or public safety as a result of this event. The reactor trip system responded automatically due to the trip signal received. There was no loss of any function that would have prevented fulfillment of actions necessary to 1) Shutdown the reactor and maintain it in a safe shutdown condition, 2) Remove residual heat, 3) Control the release of radioactive material, or 4) Mitigate the consequences of an accident.

There was no loss of safety function for this event.

E. Corrective Actions:

Planned corrective actions are to conduct a study of the grounding system and implement appropriate approved upgrades to the station and switchyard grounding grid to reduce the impact of future lightning strikes.



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NARRATIVE

F. Previous Occurrences:

No previous, similar Licensee Event Reports were identified at the Braidwood Station in the past three years.

G. Component Failure Data:

<u>Manufacturer</u>	<u>Nomenclature</u>	<u>Model</u>	<u>Mfg. Part Number</u>
N/A	N/A	N/A	N/A