



Dresden Nuclear Power Station
6500 North Dresden Road
Morris, IL 60450

SVPLTR # 22-0047

10 CFR 50.73

October 28, 2022

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

Dresden Nuclear Power Station, Unit 2 and 3
Renewed Facility Operating License Nos. DPR-19 and DPR-25
NRC Docket Nos. 50-237 and 50-249

Subject: Licensee Event Report 237/2022-002-01, Ultimate Heat Sink Declared Inoperable due to River Grass Accumulation

Enclosed is Licensee Event Report 237/2022-002-01, Ultimate Heat Sink Declared Inoperable due to River Grass Accumulation. This report is being submitted in accordance with 10 CFR 50.73(a)(2)(v)(B) for an event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to remove residual heat.

There are no regulatory commitments contained in this submittal.

Should you have any questions concerning this letter, please contact Mr. Duane Avery, Acting Regulatory Assurance Manager, at (815) 416-2804.

Respectfully,

A handwritten signature in blue ink, appearing to read "Patrick J. Boyle".

Patrick J. Boyle
Site Vice President
Dresden Nuclear Power Station

Enclosure: Licensee Event Report 237/2022-002-01

CC: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Dresden Nuclear Power Station



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/nureqs/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 Infocollect.Resource@nrc.gov, and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0104), Attn: Desk air: omb_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 Dresden Nuclear Power Station, Unit 2	2. Docket Number 05000237	3. Page 1 OF 4
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4. Title
Ultimate Heat Sink Declared Inoperable due to River Grass Accumulation

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
07	29	2022	2022	- 002 -	01	10	28	2022	Dresden, Unit 3	05000249
									Facility Name	Docket Number
										05000

9. Operating 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 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 checked="" 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 Duane Avery – Acting Regulatory Assurance Manager	Phone Number (Include area code) 815-416-2804
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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

14. Supplemental Report Expected

<input checked="" type="checkbox"/> No	<input type="checkbox"/> 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)

On July 29, 2022, at 2217 CDT, Technical Specification (TS) 3.7.3, "Ultimate Heat Sink (UHS)" Limiting Conditions for Operation (LCO) was not met, and Condition A, UHS inoperable, was entered since UHS water level was determined to be below 501.5 feet. On July 30, 2022, at 0135 CDT, UHS water level was restored to be >= 501.5 feet. On July 30, 2022, at 1116 CDT, TS 3.7.3 LCO was not met, and Condition A was entered for water level identified to be less than 501.5 feet. At 1800 CDT, UHS water level was restored to be >= 501.5 feet. The cause of low water level was due to accumulation of river vegetation and grass on the Unit 2/3 Intake Bay 13 bar racks. The root cause was procedures and processes were not aligned with industry excellence standards to prevent intake blockage events. Corrective actions included clearing river vegetation from the Unit 2/3 Intake Bay 13 bar racks, securing one Circulating Water pump, and transitioning to closed cycle to restore UHS water level. Additional corrective actions included implementing tools and management model process changes to monitor and prevent future fouling of the intake.

This event is being reported in accordance with 10 CFR 50.73(a)(2)(v)(B), "Any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to remove residual heat."



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

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1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Dresden Nuclear Power Station, Unit 2	05000237	2022	- 002	- 01

NARRATIVE

PLANT AND SYSTEM IDENTIFICATION

General Electric – Boiling Water Reactor, 2957 megawatts thermal rated core power

Energy Industry Identification System (EIIS) codes are identified in the text as [XX].

A. CONDITIONS PRIOR TO EVENT

Unit: 2 Event Date: July 29, 2022 Event Time: 2217 CDT

Reactor Mode: 1 Mode Name: Power Operation Power Level: 100%

B. DESCRIPTION OF EVENT

The Ultimate Heat Sink (UHS) [BS] provides a suction pathway for the cooling water associated with Containment Cooling Service Water (CCSW) [BI] and Diesel Generator Cooling Water (DGCW) [LB] systems. The Technical Specification (TS) Surveillance Requirement (SR) verifies water level in the suction bays is sufficient for proper operation of the CCSW and DGCW pumps [P]. The CCSW pumps take suction from intake Bay 13.

On July 29, 2022, at approx. 1000 CDT, station Operators performed routine rounds in the Unit 2/3 Cribhouse [NN], which included review of traveling screen [SCN] differential pressure recorders [PDR], observing intake suction Bay 13 water level, and general condition of the Unit 2/3 Cribhouse. Station Operations recorded the intake bar racks were free of debris, the traveling screen differential pressure recorders were satisfactory, and the Cribhouse intake suction Bay water levels were satisfactory.

On July 29, 2022, at 2217 CDT, an equipment operator identified the Unit 2/3 intake suction Bay 13 water level was less than the TS SR value of ≥ 501.5 feet. This condition did not meet TS 3.7.3, "Ultimate Heat Sink (UHS)," and required entering Condition A, UHS inoperable. The associated Required Actions and Completion Times were A.1, be in Mode 3 in 12 hours, and A.2, be in Mode 4 in 36 hours.

Actions were taken to clear river vegetation and grass from the intake bar racks, troughs and traveling screens. On July 30, 2022, at 0135 CDT, Bay 13 water level was restored to ≥ 501.5 feet and TS 3.7.3 Condition A was exited.

On July 30, 2022, at 1116 CDT, accumulation of river vegetation and grass occurred and the TS 3.7.3 Condition A, UHS inoperable, was entered due to UHS water level in Bay 13 being less than 501.5 feet. The station continued clearing debris, secured a Circulating Water [KE] pump, and transitioned the plant to closed cycle (see Safety Analysis section below for further explanation) to restore intake suction Bay 13 water level. At 1800 CDT, intake suction Bay 13 water level was restored to ≥ 501.5 feet and TS 3.7.3 Condition A was exited.



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Dresden Nuclear Power Station, Unit 2	05000237	2022	- 002	- 01

NARRATIVE

The NRC was notified via ENS Report 56023 at 0400 EDT on July 30, 2022 with an updated notification at 1934 EDT.

This event is being reported in accordance with 10 CFR 50.73(a)(2)(v)(B), "Any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to remove residual heat."

C. CAUSE OF EVENT

The cause of low water level was due to accumulation of river vegetation and grass on the Unit 2/3 Bay 13 intake bar racks.

The root cause determined procedures and process were not aligned with industry excellence standards to prevent intake blockage events. Specifically, responses to industry operating experiences were insufficient.

A contributing cause was the site had not identified the worst-case river conditions and corresponding modifications to ensure no challenges to protection of safety related plant equipment at the Cribhouse.

D. SAFETY ANALYSIS

There were no actual safety consequences affecting the general safety of the public, nuclear safety, industrial safety, or radiological safety as a result of this event. As the UHS was inoperable for the time period the water level in the intake suction bays was below the TS allowable value (501.5 feet), this event is considered a condition that could have prevented the fulfillment of a safety function.

The UHS consists of water sources from either the Kankakee River (normal), or the cooling lake (alternate) and can be aligned as either a closed cycle operating system utilizing the cooling lake and canals, or an open cycle operating system with the discharge returning to the Illinois River. The UHS provides cooling water to plant systems (Main Condenser Circulating Water System (primary user), the Containment Cooling Service Water (CCSW) System, the Service Water System, the Fire Protection System, and the Diesel Generator Cooling Water (DGCW) System) for both normal and emergency plant operations.

The safety consequences of the event if it occurred during a design basis event are of very low safety significance. The station did not operate beyond TS Required Action Completion Times. The longest duration of the degraded condition (i.e., UHS inoperability) was 6 hours and 44 minutes, from 1116 CDT to 1800 CDT on July 30, 2022.

Additionally, probabilistic risk assessment (PRA) modeling was used to perform a conservative quantitative analysis. The Incremental Conditional Core Damage Probability (ICCDP) and Incremental Conditional Large Early Release Probability (ICLERP) were calculated. The results corresponded to a determination that the events described in this LER were of very low safety significance.



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NARRATIVE

E. CORRECTIVE ACTIONS

Corrective actions included clearing river vegetation and grass from the Unit 2/3 Bay 13 intake bar racks, securing one Circulating Water pump, and transitioning to closed cycle to restore UHS water level.

Additional corrective action(s) include implementing improved equipment, tools and management model processes for conditions related to river vegetation and grass growth and other environmental challenges. The changes involve monitoring river conditions that could lead to potential intake blockage.

F. PREVIOUS OCCURRENCES

No previous occurrences of this event were determined through the investigation.

G. COMPONENT FAILURE DATA

Not applicable