Clinton Power Station
8401 Power Road
Clinton, IL 61727

U-604598
January 15, 2021

10 CFR 50.73
SRRS 5A.108

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

Clinton Power Station, Unit 1
Facility Operating License No. NPF-62
NRC Docket No. 50-461

Subject: Licensee Event Report 2020-002-00

Enclosed is Licensee Event Report (LER) 2020-002-00: Simultaneous Inoperability of Main Control Room Ventilation Subsystems A and B. This report is being submitted in accordance with the requirements of 10 CFR 50.73.

There are no regulatory commitments contained in this report.

Should you have any questions concerning this report, please contact Mr. Dale Shelton, Regulatory Assurance Manager, at (217) 937-2800.

Respectfully,

Thomas D. Chalmers
Site Vice President
Clinton Power Station

Attachment: Licensee Event Report 2020-002-00

cc:

Regional Administrator - Region III
NRC Senior Resident Inspector - Clinton Power Station
Office of Nuclear Facility Safety - Illinois Emergency Management Agency

IE22
NRR

NRC FORM 366
(08-2020)

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 08/31/2023

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/)

1. Facility Name	2. Docket Number	3. Page
Clinton Power Station, Unit 1	05000461	1 OF 3

4. Title

Simultaneous Inoperability of Main Control Room Ventilation Subsystems A and B

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
11	16	2020	2020	- 002 -	00	01	15	20201		05000
									Facility Name	Docket Number
										05000

9. Operating Mode	10. Power Level
1	098

11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: *(Check all that apply)*

10 CFR Part 20	☐ 20.2203(a)(2)(vi)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(A)	**10 CFR Part 73**
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.69(g)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(4)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(i)	**10 CFR Part 21**	☐ 50.73(a)(2)(i)(B)	☒ 50.73(a)(2)(v)(D)	☐ 73.77(a)(1)(i)
☐ 20.2203(a)(2)(ii)	☐ 21.2(c)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)	☐ 73.77(a)(2)(i)
☐ 20.2203(a)(2)(iii)	**10 CFR Part 50**	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)	☐ 73.77(a)(2)(ii)
☐ 20.2203(a)(2)(iv)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)	
☐ 20.2203(a)(2)(v)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)	

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

12. Licensee Contact for this LER

Licensee Contact	Phone Number (Include area code)
Dale Shelton, Regulatory Assurance Manager	(217) 937-2800

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
X	VI	CL	GE	Y						

14. Supplemental Report Expected		15. Expected Submission Date	Month	Day	Year
☒ No	☐ Yes (If yes, complete 15. Expected Submission Date)				

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

The Main Control Room (MCR) Ventilation and Air Conditioning System (VC) subsystem A was removed from service for planned maintenance and declared inoperable on 11/16/20. At 1918 on 11/16/20, MCR VC subsystem B supply air isolation dampers 0VC21YB, 0VC24YB and 0VC27YB lost power and failed closed. Technical Specification (TS) 3.7.3, Control Room Ventilation System, Action F.1 and TS 3.7.4, Control Room AC System, Actions B.1 and B.2 were entered. VC subsystem A ventilation was restored to OPERABLE status and at 2036, TS 3.7.3 Action F.1 was exited. At 0350 on 11/17/20, VC subsystem A chiller was restored to OPERABLE status and TS 3.7.4 Actions B.1 and B.2 were exited. Investigation determined that a shorted coil in breaker cubicle 0AP25E-4B motor starter caused fuse 0AP25E4A-F01 to blow, which resulted in dampers 0VC21YB, 0VC24YB and 0VC27YB losing power and failing closed. The failed motor starter coil and fuse were replaced and successfully tested. The condition where both required VC subsystems were simultaneously inoperable is reportable under 10 CFR 50.73(a)(2)(v)(D), any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident. However, there was no impact to the health and safety of the public or plant personnel, as subsequent post-maintenance testing demonstrated VC subsystem A remained capable of performing its safety functions throughout the event.

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Clinton Power Station, Unit 1	05000461	2020	- 002	- 00

NARRATIVE

PLANT AND SYSTEM IDENTIFICATION

General Electric -- Boiling Water Reactor, 3473 Megawatts Thermal Rated Core Power
Energy Industry Identification System (EIIS) codes are identified in text as [XX].

EVENT IDENTIFICATION

Divisions 1 and 2 Main Control Room Ventilation and Air Conditioning Systems Simultaneously Inoperable

A. Plant Operating Conditions Before the Event

Unit: 1 Event Date: November 16, 2020 Event Time: 1918
Mode: 1 Mode Name: Power Operation Reactor Power: 098

B. Description of Event

On November 16, 2020 at 0153 CDT, Main Control Room (MCR) Ventilation [VI] and Air Conditioning [KM] System (VC) subsystem A was removed from service and declared inoperable for scheduled maintenance. At 1918 CDT, MCR VC subsystem B supply air isolation dampers [DMP] 0VC21YB, 0VC24YB and 0VC27YB lost power and failed closed. Technical Specification (TS) 3.7.3, Control Room Ventilation System, Action F.1 and TS 3.7.4, Control Room Air Conditioning (AC) System Actions B.1 and B.2 were entered. TS 3.7.3 Action F.1 directs the plant be in MODE 3 within 12 hours. TS 3.7.4 Action B.1 requires verification of MCR temperature to be less than or equal to 86 degrees F and Action B.2 requires one VC subsystem to be restored to OPERABLE status within 7 days. VC subsystem A ventilation was restored to OPERABLE status at 2036 CDT and TS 3.7.3 Action F.1 was exited. At 0350 CDT on November 17, 2020, VC subsystem A chiller was restored to OPERABLE status and TS 3.7.4 Actions B.1 and B.2 were exited. At 1737 CDT on November 17, 2020, VC subsystem B was restored to OPERABLE and TS 3.7.3 and TS 3.7.4, Action A.1, were exited.

Simultaneous inoperability of VC subsystems A and B resulted in a condition that could have prevented fulfillment of a safety function. Therefore, this condition was reported to the NRC Operations Center via ENS Notification 55002 on November 17, 2020, at 0340 CDT, in accordance with the reporting requirements of 10 CFR 50.72(b)(3)(v)(D), any event or condition that at the time of discovery could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident.

C. Cause of the Event

Investigation determined that a shorted coil [CL] in breaker cubicle 0AP25E-4B motor starter [MSTR] caused fuse [FU] 0AP25E4A-F01 to blow, which resulted in dampers 0VC21YB, 0VC24YB and 0VC27YB losing power and failing closed. Based on the visual evidence and electrical testing, the motor starter coil failed due to electrical overheating. The motor starter coil is a high duty cycle component and cycles frequently when either of the two VC subsystems is in service. The failed motor starter coil was installed in July 2005 and failed after approximately fifteen years of service.

D. Safety Consequences

The condition where both required VC subsystems were simultaneously inoperable described in this LER is reportable under 10 CFR 50.73(a)(2)(v)(D), any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident. There was no impact to the health and safety of the public or plant personnel, as subsequent post-maintenance testing demonstrated VC subsystem A remained capable of performing the safety functions of the VC system throughout this event. Engineering analysis has determined that this event does not meet the criteria for a Safety System Functional Failure.

E. Corrective Actions

The failed 0AP25E-4B motor starter coil and fuse 0AP25E4A-F01 were replaced and successfully post-maintenance tested on November 17, 2020.

F. Previous Similar Occurrences

There were no previous events identified involving failed motor starter coils similar to the condition described in this LER.

G. Component Failure Data

GE, Magnetic Pickup (Motor Starter) Coil, Part 55-537289G002 Series A, VA1498, 115-120V, 60Hz