

LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

Brunswick Steam Electric Plant, Unit 1

DOCKET NUMBER (2)

05000325

PAGE (3)

1 of 4

TITLE (4)

Reactor Water Cleanup System Isolation Due To Filter Leakage

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
05	24	95	95	- 12 -	00	06	22	95	FACILITY NAME	DOCKET NUMBER 05000
OPERATING MODE (9)		01	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following)(11)							
POWER LEVEL (10)		97	20.402(b)			20.405(c)		X	50.73(a)(2)(iv)	73.71(b)
			20.405(a)(1)(i)			50.36(c)(1)			50.73(a)(2)(iv)	73.71(c)
			20.405(a)(1)(ii)			50.36(c)(2)			50.73(a)(2)(vii)	OTHER
			20.405(a)(1)(iii)			50.73(a)(2)(ii)			50.73(a)(2)(viii)(A)	(Specify in Abstract and Text)
			20.405(a)(1)(iv)			50.73(a)(2)(iii)			50.73(a)(2)(viii)(B)	
			20.405(a)(1)(v)			50.73(a)(2)(iii)			50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME

Steve F. Tabor, Regulatory Affairs Specialist

TELEPHONE NUMBER

(910) 457-2178

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS
X	CE	*	L053	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X	NO					

ABSTRACT (Limit to 1400 spaces, i.e. approximately fifteen single space typewritten lines) (16)

On May 24, 1995, Unit 1 was operating at 97% power with the Reactor Water Cleanup (RWCU) system 1A Filter/Demineralizer (F/D) in service. While returning the RWCU 1B F/D to service following backwash and precoating of the filter, RWCU differential flow and Non-Regenerative Heat Exchanger (NRHX) discharge temperature increased. The RWCU System Leak Hi and Hi Hi annunciators actuated. About three minutes later the NRHX discharge high temperature annunciator actuated and by design, the RWCU System Inlet Outboard Isolation Valve, 1-G31-F004 closed. Isolation of the 1-G31-F004 caused the in-service RWCU pump to trip. To isolate the system the RWCU Inlet Inboard Isolation Valve, 1-G31-F001, was then closed.

Leakage from the RWCU 1B F/D head gasket caused the NRHX high discharge temperature condition and isolation of RWCU. The 1B F/D head gasket had been installed for approximately three years with no leaks. The cause of the gasket failure was the lack of a periodic RWCU F/D vessel inspection program. Corrective actions include the development of a plan for inspection and maintenance of the RWCU F/D vessels and creation of a maintenance procedure, as necessary, for identifying and repairing RWCU F/D vessel problems. On May 25, 1995, at approximately 0540 hours, RWCU was restored to service. This event has minimal safety significance in that vessel conductivity did not exceed acceptable limits while RWCU was out of service.

The cause classification for this event per the criteria of NUREG-1022 is E, due to RWCU system maintenance program deficiencies.

*EIS component identifier unavailable.

EXPIRES: 5/31/95

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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Brunswick Steam Electric Plant Unit 1	05000325	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 of 4
		95	- 12 -	00	

TEXT (If more space is required, use additional NRC Form 366A's) (17)

TITLE

Reactor Water Cleanup (RWCU) System Isolation Due To Filter Leakage

INITIAL CONDITIONS

On May 24, 1995, Unit 1 was operating at 97% power. The RWCU system 1A pump and the 1A Filter/Demineralizer (F/D) were in service. At the time of the event Operations was placing the RWCU system 1B F/D in service following backwash and precoat of the filter.

EVENT NARRATIVE

On May 24, 1995, at approximately 1801 hours, having pressurized the RWCU system 1B F/D in preparation for return to service, the Reactor Building Auxiliary Operator initiated placing the filter into service. In accordance with the RWCU system operating procedure the AO depressed the start button for the filter control logic to establish reactor coolant flow through the filter. When the start button was depressed the RWCU system 1A F/D flow dropped from 95 gpm to approximately 60 gpm and the RWCU system 1A pump flow increased to >300 gpm. Due to the resulting RWCU system high differential flow condition, the RWCU system high leak annunciators and the associated Primary Containment Group 3 (RWCU Inlet Inboard and Outboard Isolation Valves) isolation 30 minute timer actuated.

Approximately three minutes later the Non-Regenerative Heat Exchanger (NRHX) discharge high temperature annunciator actuated. The NRHX temperature sensor provides filter protection and is not designed to provide an Engineered Safety Feature logic actuation. By design, due to the actuation of the RWCU NRHX temperature logic, the RWCU Inlet Outboard Isolation Valve, 1-G31-F004, closed. As the 1-G31-F004 closed the RWCU 1A pump tripped as designed. To isolate the RWCU system the 1-G31-F001, RWCU Inlet Inboard Isolation Valve, and the 1-G31-F042, RWCU Return to Reactor Isolation Valve were manually closed. Following isolation of the RWCU system, an inspection of the accessible areas of the RWCU system was performed to determine whether a leak had occurred. The inspection revealed a small unquantified amount of leakage from the ceiling of the RWCU pump and valve room located on the 77 foot elevation of the Reactor Building. Further investigation revealed that the RWCU system 1B F/D head gasket was the source of the leakage.

On May 25, 1995, at approximately 0540 hours, RWCU system operation was restored with the 1A F/D in service.

EXPIRES: 5/31/95

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

This event is being reported in accordance with the requirements of 10 CFR 50.73 (a) (2) (iv) in that the failure of the RWCU system 1B F/D head gasket resulted in the manual isolation of the RWCU system related Primary Containment Isolation System valves.

CAUSE OF EVENT

Leakage from the RWCU system 1B F/D head gasket caused the actuation of the NRHX high discharge temperature condition and subsequent isolation of the RWCU system. The leakage resulted from poor surface contact between the gasket and filter flange. The carbon steel filter dome and body including the flange to gasket sealing surface have an interior coating of Plasite 7155 to inhibit corrosion. Filter dome interior coating deterioration has created minor surface imperfections at the gasket/flange sealing interface.

The 1B F/D head gasket had been installed for approximately three years with no leaks. During previous F/D gasket replacements flange coating/surface preparations have not been adequately addressed. The periodic maintenance program did not provide guidance for inspection and repair of the F/D vessel and flange. The investigation into the cause of this event determined that the manufacturer's guaranteed service life of the coating product is 5-7 years depending on the application and service conditions. The absence of a periodic F/D vessel inspection program allowed the deterioration of the F/D interior coating and flange sealing surfaces to continue undetected.

CORRECTIVE ACTIONS

The RWCU system 1B F/D head gasket was replaced and the system returned to operation.

A maintenance procedure will be developed by November 15, 1995 to identify and repair, as necessary, RWCU F/D vessel coating problems.

A plan for continuing inspection and maintenance of the RWCU F/D vessels will be developed by December 15, 1995, to provide future corrosion protection and improvements for filter dome sealing.

SAFETY ASSESSMENT

This event is of minimal safety significance in that the RWCU system was restored in a timely manner and as such reactor water conductivity remained within Technical Specification limits. Furthermore, the affected systems responded as designed.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

PREVIOUS SIMILAR EVENTS

A similar event involving an RWCU system isolation due to a F/D head gasket failure was reported in LER 1-88-004.

EIIS COMPONENT IDENTIFICATION

<u>System/Component</u>	<u>EIIS Code</u>
Reactor Water Cleanup System	CE
RWCU System F/D	CE/FDM
1-G31-F004	CE/ISV
1-G31-F001	CE/ISV

Enclosure
List of Regulatory Commitments

The following table identifies those actions committed to by Carolina Power & Light Company in this document. Any other actions discussed in the submittal represent intended or planned actions by Carolina Power & Light Company. They are described to the NRC for the NRC's information and are not regulatory commitments. Please notify the Manager-Regulatory Affairs at the Brunswick Nuclear Plant of any questions regarding this document or any associated regulatory commitments.

Commitment	Committed date or outage
1. Develop a maintenance procedure to identify and repair, as necessary, RWCU F/D vessel coating problems.	11/15/95
2. Develop a plan for continuing inspection and maintenance of the RWCU F/D vessels to provide future corrosion protection and improvements for filter dome sealing.	12/15/95