



Carolina Power & Light Company
P.O. Box 10429
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10 CFR 50.73

JUL 27 1998

SERIAL NO: BSEP 98-0153

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

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 50-324
LICENSE NOS. DPR-71 AND DPR-62
LICENSEE EVENT REPORT 1-98-004

Gentlemen:

In accordance with the Code of Federal Regulations, Title 10, Part 50.73, Carolina Power & Light Company submits the enclosed Licensee Event Report. This report fulfills the requirement for a written report within thirty (30) days of a reportable occurrence.

Please refer any questions regarding this submittal to Mr. Keith R. Jury, Manager - Regulatory Affairs, at (910) 457-2783.

Sincerely,

Jeffrey J. Lyash
Plant General Manager
Brunswick Steam Electric Plant

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Enclosure: Licensee Event Report

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Document Control Desk
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cc:

U. S. Nuclear Regulatory Commission
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NRC FORM 366 (4-98)	U.S. NUCLEAR REGULATORY COMMISSION LICENSEE EVENT REPORT (LER) (See reverse for required number of digits/characters for each block)	APPROVED BY OMB NO. 3150-0104 EXPIRES 04/30/98 <small>ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 60.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 P33), 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.</small>
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FACILITY NAME (1) Brunswick Steam Electric Plant (BSEP), Unit No. 1	DOCKET NUMBER (2) 05000325	PAGE (9) 1 OF 4
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TITLE (4)
 Standby Gas Treatment System Surveillance Deficiency

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NO.	REVISION	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
06	27	1998	1998	-- 004	-- 00	07	27	1998	BSEP, Unit No. 2	05000324
									FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9) 1

POWER LEVEL (10) 100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more) (11)

20.2201(b)	20.2203(a)(2)(v)	<input checked="" type="checkbox"/> 50.73(a)(2)(i)	50.73(a)(2)(viii)
20.2203(a)(1)	20.2203(a)(3)(i)	50.73(a)(2)(ii)	50.73(a)(2)(x)
20.2203(a)(2)(i)	20.2203(a)(3)(ii)	50.73(a)(2)(iii)	73.71
20.2203(a)(2)(ii)	20.2203(a)(4)	50.73(a)(2)(iv)	OTHER
20.2203(a)(2)(iii)	50.36(c)(1)	50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A
20.2203(a)(2)(iv)	50.36(c)(2)	50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME Steven F. Tabor, Project Analyst - Regulatory Affairs	TELEPHONE NUMBER (Include Area Code) (910) 457-2178
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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

SUPPLEMENTAL REPORT EXPECTED (14)	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO			

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On June 27, 1998, at 1100 hours, with both Units operating at rated power, it was determined that testing performed on the Unit 1 and 2 Standby Gas Treatment (SBGT) systems has not satisfied the Air-Aerosol Mixing Uniformity Test requirements of Regulatory Guide 1.52, Revision 1. Specifically, the test gas injection methodology did not ensure adequate mixing of the test gas injected into the downstream High Efficiency Particulate Air (HEPA) filter bank as required by Technical Specification (TS) Surveillance Requirement 4.6.6.1.b.1 which specifies testing that meets Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 1. Upon identification of this issue, entry into the applicable Limiting Condition for Operation was delayed for 24 hours in accordance with TS Surveillance Requirement 4.0.3 to allow retesting of the Unit 1 and 2 SBGT systems. This testing was satisfactorily completed by 1810 hours. The cause of this issue is attributed to the failure of the individuals responsible for development of the SBGT test procedure to fully understand the air-aerosol mixing uniformity test requirements and to ensure that the test gas injection location and methodology was consistent with a verified air-aerosol mixing uniformity test methodology. Additional corrective actions include revision of surveillance procedures to reflect the new HEPA testing methodology and dissemination of the lessons learned from this issue to appropriate personnel. This issue is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B) in that, an inadequate surveillance test methodology resulted in the failure to satisfy TS Surveillance Requirements 4.6.6.1.b.1 (i.e., a condition prohibited by TS).

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

TITLE

Standby Gas Treatment System Surveillance Deficiency

INITIAL CONDITIONS

On June 27, 1998, Units 1 and 2 were operating at rated power.

EVENT NARRATIVE

Technical Specification (TS) Surveillance Requirement 4.5.6.1.b.1 specifies periodic testing to verify that each Standby Gas Treatment (SBGT)/[BH] subsystem satisfies the in-place testing acceptance criteria in accordance with the test procedures of Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, "Design, Testing, And Maintenance Criteria For Engineered-Safety-Feature Atmosphere Cleanup System Air Filtration And Adsorption Units Of Light-Water-Cooled Nuclear Power Plants," Revision 1, July 1976. Section C.5.c of Regulatory Guide 1.52, Revision 1 states, that the in-place dioctyl phthalate (DOP) test for High Efficiency Particulate Air (HEPA) filters should conform to Section 10 of American National Standards Institute (ANSI) N510-1975. Section 10.3 of ANSI N510-1975 specifies that Section 9 of that standard is a prerequisite for the in-place leak test of the HEPA filter banks. Section 9 of ANSI N510-1975 specifies the purpose of and requirements for air-aerosol mixing uniformity tests. The purpose of the air-aerosol mixing uniformity test is to verify that tracer DOP injection and sample ports are located to provide proper mixing of the tracer in the air approaching the HEPA filter bank. In addition, Section 9 states that a valid in-place test is not possible without a uniform tracer-air mixture.

Carolina Power & Light (CP&L) Company performed a Safety System Functional Inspection of the Control Building Emergency Air Filtration (CBEAF)/[VI] system in 1995. During that inspection, questions were raised regarding air-aerosol mixing uniformity testing of the CBEAF system. Extensive research into the basis for the CBEAF testing requirements was performed and actions taken to resolve this issue.

During the CBEAF resolution effort it was recognized that, due to the similarities between the CBEAF and SBGT systems, the potential existed for similar concerns on the SBGT system. Consequently, research into the basis for testing requirements was performed for the SBGT system including reviews of the air-aerosol mixing uniformity test methodologies. During these reviews, questions associated with the DOP test gas injection locations used during previous SBGT surveillances were identified. On June 15, 1998, these discrepancies were documented in the corrective action program. Testing of the Unit 2 2B SBGT system upstream and downstream HEPA filter banks was performed on June 27, 1998, to verify the adequacy of the past air-aerosol mixing uniformity test methodology. The testing confirmed that the past test methodology applied to the upstream HEPA filter banks was adequate for ensuring proper DOP test gas mixing. However, at 1100 hours, following testing of the 2B SBGT downstream HEPA filter bank, it was determined that the past

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test methodology applied to the downstream HEPA filter banks was not adequate. Consequently, based on the test results and the fact that the same test methodology had been applied to the Units 1 and 2 SBT system trains, the past testing performed to satisfy TS Surveillance Requirement 4.6.6.1.b.1 for the Units 1 and 2 SBT systems was considered invalid.

Upon discovery of this issue, entry into the applicable Limiting Condition for Operation was delayed for 24 hours in accordance with TS Surveillance Requirement 4.0.3 until valid DOP tests could be performed on the Unit 1 and 2 SBT systems. A new test methodology for the air-aerosol mixing uniformity tests was developed and verified prior to performing the DOP tests. The DOP tests were satisfactorily completed by 1810 hours.

This issue is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B) in that an inadequate surveillance test methodology resulted in the failure to satisfy TS Surveillance Requirements 4.6.6.1.b.1., and as such, resulted in a condition prohibited by TS.

EVENT CAUSE

The cause of this issue is attributed to the failure of the individuals responsible for development of the SBT DOP test procedure to fully understand the air-aerosol mixing uniformity test requirements and ensure that the DOP test gas injection location and methodology was consistent with a verified air-aerosol mixing uniformity test methodology.

Review of previous revisions to SBT system HEPA filter bank DOP test procedures identified two concerns that are related to the cause of this issue. First, the procedure does not specify test gas injection point locations or test gas injection methods. The procedure relied upon the knowledge and expertise of the test coordinator to install the needed test equipment and employ the appropriate test methodology. Secondly, the procedure did not include a reference to a verified air-aerosol mixing uniformity test methodology. Review of historical records determined that initial air-aerosol mixing uniformity tests were performed on the Units 1 and 2 SBT systems in 1978; however, the test methods verified in those tests were not referenced nor included in the test procedures that were subsequently developed. As such, it is believed that the surveillance testing performed since 1978 has not satisfied the air aerosol mixing uniformity test requirements as specified by Regulatory Guide 1.52, Revision 1.

CORRECTIVE ACTIONS

On June 27, 1998, DOP testing of the Units 1 and 2 SBT systems was performed using the test methodologies which were verified to provide proper mixing of the DOP tracer in the air approaching the HEPA filter banks.

Revisions to the applicable surveillance procedures will be implemented by August 31, 1998, to reflect the downstream HEPA test methodology which was verified on June 27, 1998.

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The lessons learned from this issue, including the need to thoroughly research applicable regulatory requirements during surveillance test procedure preparation, will be disseminated to appropriate personnel by August 13, 1998.

SAFETY ASSESSMENT

The safety significance of this condition is minimal. The issue concerning inadequate testing is isolated to the downstream HEPA filter banks. The upstream HEPA testing performed on June 27, 1998, verified that the previous test methodology applied to the upstream HEPA was adequate. Past test data indicates that the upstream HEPA filter bank has consistently provided the required 99.95% efficiency factor required by Regulatory Guide 1.52, Revision 1 (i.e., the downstream HEPA filter bank has not been needed to ensure the 99.95% efficiency factor). The upstream HEPA performance is consistent with the description provided in the Updated Final Safety Analysis Report Section 6.5.1.1.1 which states that the in-place filters were designed for a minimum of 99 percent efficiency using the standard DOP test. Also, subsequent testing verified the adequacy of the downstream HEPA filter bank.

PREVIOUS SIMILAR EVENTS

A similar issue involving the adequacy of the air-aerosol mixing uniformity testing of the CBEAF system was identified during the Safety System Functional Inspection performed in 1995. The retesting of the CBEAF system performed at that time to verify the adequacy of past test methodologies determined that past testing satisfied the requirements of Regulatory Guide 1.52, Revision 1. As part of the actions taken to address that issue an action item was generated to address similar concerns with the SBTG air-aerosol mixing uniformity testing. During the implementation of those actions, the issue discussed in this report was identified.

COMMITMENTS

Those actions committed to by Carolina Power & Light (CP&L) Company in this document are identified below. Any other actions discussed in the submittal represent intended or planned actions by CP&L. They are described for the NRC's information and are not regulatory commitments. Please notify the Manager - Regulatory Affairs at the Brunswick Steam Electric Plant (BSEP) of any questions regarding this document or any associated regulatory commitments.

Revisions to the applicable surveillance procedures will be implemented by August 31, 1998, to reflect the downstream HEPA test methodology which was verified on June 27, 1998.

The lessons learned from this issue, including the need to thoroughly research applicable regulatory requirements during surveillance test procedure preparation, will be disseminated to appropriate personnel by August 13, 1998.