



Carolina Power & Light Company  
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MAY 25 2000

SERIAL NO: BSEP 00-0068

10 CFR 50.73

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 1-2000-002-00

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. Warren J. Dorman,  
Manager - Regulatory Affairs, at (910) 457-2068.

Sincerely,

C. G. Gannon  
Plant General Manager  
Brunswick Steam Electric Plant

SFT/sft

Enclosure: Licensee Event Report

RGN-001

IE22

Document Control Desk  
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cc:

U. S. Nuclear Regulatory Commission  
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**LICENSEE EVENT REPORT (LER)**

(See reverse for required number of digits/characters for each block)

Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Records Management Branch (T-6 F33), 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. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

FACILITY NAME (1) Brunswick Steam Electric Plant (BSEP), Unit No. 1	DOCKET NUMBER (2) 05000325	PAGE (3) 1 OF 4
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TITLE (4)  
Control Room Emergency Ventilation System Actuation During Chlorination System Venting

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
04	28	2000	2000	002	00	05	25	2000	BSEP Unit No. 2	05000324
OPERATING) 1			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)							
POWER LEVEL (10) 100			20.2201(b)			20.2203(a)(2)(v)		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)		X 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 EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On April 28, 2000, at 1630 hours, with both units operating at rated power, the Control Room Emergency Ventilation (CREV) system actuated and aligned to the chlorine protection mode. At the time of the occurrence, maintenance personnel were venting nitrogen gas containing residual chlorine from the chlorination system following the performance of scheduled system maintenance. By 1802 hours, venting of the chlorination system was completed and the CREV system was restored to its normal configuration. The cause of this occurrence is attributed to an external factor. Specifically, the prevailing wind direction abruptly changed during the venting of the chlorination system. Residual chlorine gas, vented from the system, actuated the chlorine detectors located at the chlorine loading area resulting in the CREV system actuation. Due to the nature of this event, corrective actions are not warranted.

This event is being reported in accordance with the requirements of 10 CFR 50.73(a)(2)(iv) in that the condition resulted in the automatic actuation of an engineered safety feature.

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TEXT CONTINUATION

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Brunswick Steam Electric Plant, Unit No. 1	05000325	2000	002	00	2 OF 4

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

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

INITIAL CONDITIONS

On April 28, 2000, the Brunswick Steam Electric Plant (BSEP) Units 1 and 2 were operating at rated power. Scheduled maintenance on the chlorination system [KF] was in progress. The on-site chlorine tank car (i.e., chlorine source) was isolated and under clearance to support the maintenance activity. To ensure system leak integrity following the completion of the maintenance activity, the chlorination system was pressurized with nitrogen gas. Following successful completion of the leak testing, venting of the nitrogen gas to the atmosphere outside the chlorination building was initiated. In accordance with the guidance provided during a pre-job briefing, the temporary vent tubing had been installed such that the prevailing wind would disperse the exhausting gaseous nitrogen away from the chlorine detectors located outside the service water and chlorination buildings. At approximately 1612 hours, a severe thunderstorm warning was issued for the Brunswick County area from 1615 to 1800 hours.

EVENT NARRATIVE

On April 28, 2000, at approximately 1630 hours, while venting the nitrogen gas containing residual chlorine from the chlorination system, the Control Room Emergency Ventilation (CREV) [VI] system actuated and aligned to the chlorine protection mode. Control room operators verified that the required automatic actuations occurred. Abnormal operating procedure, 0AOP-34, "Chlorine Emergencies," was entered for both units.

Following the CREV system actuation, area surveys using portable monitoring instrumentation were performed. The surveys confirmed that no detectable chlorine gas concentration levels existed inside or outside the chlorination building. By 1802 hours, venting of the chlorination system was completed and the CREV system restored to its normal configuration.

At 1806 hours, a four-hour non-emergency event report (Event Number 36941) was made in accordance with 10 CFR 50.72(b)(2)(ii), for a condition that resulted in the automatic actuation of an engineered safety feature (ESF). This event is being reported in accordance with the requirements of 10 CFR 50.73(a)(2)(iv) in that the condition resulted in the automatic actuation of an ESF.

EVENT CAUSE

The cause of this occurrence is attributed to an external factor. Specifically, the prevailing wind direction abruptly changed during the venting of the chlorination system. As such, residual chlorine gas within the system was directed toward the chlorine detectors located at the chlorine loading area. As designed, the affected detectors actuated resulting in the CREV system actuation.

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

CORRECTIVE ACTIONS

Due to the nature of this occurrence, corrective actions are not warranted. The cause of the occurrence is attributed to an external factor. Prior to the occurrence, a thorough pre-job briefing was conducted with the involved personnel regarding the work items and safety aspects of the job. Part of this pre-job brief included the discussion of pressurizing the chlorination system piping with gaseous nitrogen to check for leak tightness prior to the introduction of chlorine. The individual performing the pre-job brief was familiar with the chlorination system and discussed the method of venting the chlorination piping following the leak check with the involved technicians. The pre-job briefing addressed the need to check the direction of the wind via visual observation of the site wind sock and to locate the vent rig outlet as far as possible from and downwind of the area chlorine detectors. In addition, the fact that a CREV system actuation would occur if residual chlorine gas levels came into contact with the detectors was discussed in the pre-job brief.

Just prior to system depressurization, the wind sock direction was rechecked and the wind was verified to be blowing away from the chlorine detectors. While venting the chlorination system, the technician noted the shift in wind direction that occurred with the approaching thunderstorm, but was unable to secure the venting process quickly enough to prevent some nitrogen gas containing residual chlorine from reaching the chlorine loading area chlorine detectors. Carolina Power & Light Company has determined that actions, in addition to those identified above, are not reasonable with respect to the extremely low nuclear and personnel safety significance associated with nitrogen pressure testing and venting of the chlorine system.

SAFETY ASSESSMENT

The safety significance of this occurrence is considered minimal. The design basis chlorine release is based on a complete rupture of a chlorine tank car containing 55 tons of chlorine. The quantity of chlorine gas released in this event is considered insignificant with respect to the bounding analysis. Additionally, the affected safety systems functioned as designed to ensure control room habitability.

Prior to the initiation of the chlorination system maintenance activity, the chlorine tank car was isolated and the chlorination system purged; minimizing the amount of residual chlorine gas which could be inadvertently released. During the occurrence, the personnel chlorine detectors worn by individuals in the vicinity of the venting evolution did not alarm; indicating that the safety of the personnel involved with the activity was not jeopardized. In addition, the chlorine detectors are designed to actuate upon detection of a chlorine gas concentration of one part per million. This level is well below that which constitutes a personnel hazard.

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PREVIOUS SIMILAR EVENTS

LERs 1-90-004, 1-94-013, 1-98-005, and 1-99-003 documented events in which the CREV system automatically isolated due to the release of chlorine gas from the chlorination system. With the exception of the 1994 occurrence, the previously reported CREV system actuations resulted from equipment failures. The cause of LER 1-94-013 was attributed to inadequate procedures and personnel error in operating a chlorination evaporator. The corrective actions associated with the previous events could not reasonably be expected to prevent the recent occurrence.

COMMITMENTS

None