



Carolina Power & Light Company

USNRC REGION II
ATLANTA, GEORGIA

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December 18, 1981

File: NG-3513(B)

Serial No.: NO-81-2075

Mr. James P. O'Reilly, Director
United States Nuclear Regulatory Commission
Region II
101 Marietta Street, N.W., Suite 3100
Atlanta, GA 30303

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 50-324
LICENSE NOS. DPR-71 AND DPR-62
RESPONSE TO INFRACTIONS OF NRC REQUIREMENTS

Dear Mr. O'Reilly:

Carolina Power & Light Company (CP&L) has received IE Investigation Reports 50-324/80-44 and 50-325/80-46 for the Brunswick Steam Electric Plant and finds that they do not contain any information of a proprietary nature.

The reports identified five items that appear to be in non-compliance with NRC requirements. The five items and CP&L's responses to each are addressed in Enclosure 1.

CP&L acknowledges that the five violations cited in IE Investigation Reports 50-325/80-44 and 50-325/80-46 are correct as stated. The corrective actions associated with each of these violations were implemented prior to June, 1981. This is discussed in our enclosed responses to the NRC Notice of Violation dated October 21, 1981. Although we do not agree with some of the adversary comments contained in the "Details" section of the report attached to your October 21, 1981 letter, we do not believe it would be productive to address each and every point of contention. Since our corrective actions have been extensively discussed both with NRC representatives during the course of this six-month investigation and with NRC management immediately following completion of the investigation in May, 1981, we have restricted our response at this time to the Notice of Violation transmitted with your October 21, 1981 letter. In addition, it should be noted that the violations cited in the above referenced investigation reports do not reflect the current status of the Brunswick Steam Electric Plant.

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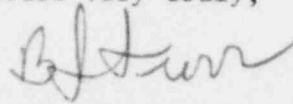
Mr. James P. O'Reilly

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December 18, 1981

We trust that the enclosed information satisfactorily responds to the citations identified in the investigation reports. If you should require additional information, please contact us.

Yours very truly,

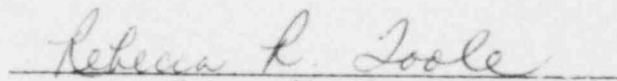


B. J. Furr
Vice President
Nuclear Operations

WRM/lr (7648)

Enclosure

B. J. Furr, having been first duly sworn, did depose and say that the information contained herein is true and correct to his own personal knowledge or based upon information and belief.



Notary (Seal)

My commission expires: **My Commission Expires 6-8-86**

ENCLOSURE 1

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
IE INVESTIGATION REPORTS 50-324/80-44 AND 50-325/80-46
RESPONSE TO NOTICE OF VIOLATION

IE Investigation Reports 50-324/80-44 and 50-325/80-46 identified five items that appear to be in noncompliance with NRC requirements. These items and Carolina Power & Light Company's response to each are addressed in the following text:

Violation A: (Severity Level IV)

10 CFR 20.201(b) requires each licensee to make or cause to be made such surveys as may be necessary for him to comply with the regulations of Part 20. 10 CFR 20.201(a) states that "survey" means an evaluation of the radiation hazards incident to the production, use, release, disposal or presence of radioactive materials or other sources of radiation under a specific set of conditions. When appropriate, such evaluation includes a physical survey of the location of materials and equipment, and measurements of levels of radiation or concentrations of radioactive material present. 10 CFR 20.106(a) states that a licensee (1) shall not possess, use or transfer licensed material so as to release to an unrestricted area radioactive material in concentrations which exceed the limits specified in Appendix "B", Table II of Part 20.

Contrary to the above, as of October 1980 the licensee had not performed surveys or evaluations to ensure that the concentrations of radioactive material released to unrestricted areas as the result of tube leaks in the auxiliary boilers on February 27-28, February 29 - March 2, March 3-6, March 8-10, and March 12-13, 1980, did not exceed the limits specified in Appendix "B", Table II of Part 20.

Carolina Power & Light Company's Response:

Carolina Power & Light Company (CP&L) acknowledges that this violation is correct as stated. However, as noted in paragraph II.B.3 of I&E Inspection Reports 50-324/80-44 and 50-325/80-46, the NRC investigators were informed that a thorough evaluation was in progress at the time of the investigation (November 16, 1980 through May 8, 1981). The results of this evaluation were provided to the NRC Office of Inspection and Enforcement Region II as an enclosure to a CP&L letter dated January 27, 1981 (Serial No.: NO-81-119).

In addition, an extensive environmental monitoring program was initiated after the final shutdown of the auxiliary boilers. The program results have indicated that no hazard to the public health and safety existed as a result of any known or potential releases from the auxiliary boilers. The results of this environmental monitoring program were submitted to NRC in our transmittal of January 22, 1981.

Full compliance on this item has been achieved.

Violation B: (Severity Level IV)

Technical Specifications, Appendix B, Section 3.5.2.b requires that gaseous releases to the environment from the two reactor building vents, the two turbine building vents, and the off-gas vent (stack), shall be continuously monitored for gross radioactivity. Whenever these monitors are inoperable grab samples shall be taken and analyzed daily for gross gaseous radioactivity.

Contrary to the above, the requirements for monitoring gaseous radioactivity releases were not met in that:

1. The Unit 1 reactor building vent monitor was operated without a filter for collecting particulate radioactivity from 8:36 a.m. on December 11, 1980 until 11:19 a.m. on December 15, 1980. Daily grab samples were not taken during this period.
2. The main off-gas vent (stack) monitor was inoperable due to a pump malfunction from 5:36 p.m. on December 15, 1980 to 2:05 p.m. on December 22, 1980. Daily grab samples were not taken during this period.
3. The Unit 2 reactor building vent monitor was found not to be monitoring the exhaust stream on November 16, 1980 due to inadequate maintenance. This condition existed for an undeterminable period of time, but which was in excess of twenty-four hours. Daily grab samples were not taken during this period.
4. The Unit 1 reactor building vent monitor and the Units 1 and 2 turbine building vent monitors were found not to be monitoring the appropriate exhaust stream on November 17, 1980 due to inadequate maintenance. This condition existed for an undeterminable period of time, but which was in excess of twenty-four hours. Daily grab samples were not taken during this period.

Carolina Power & Light Company's Response:

Carolina Power & Light Company (CP&L) acknowledges that this violation is correct as stated. The maintenance actions in question only affected the particulate portion of the monitor.

The iodine and noble gas portions of the monitor were unaffected. Due to the conservative design of the reactor roof vent monitor sample probes, the pressure in the particulate chamber is positive compared to the building pressure under normal conditions. Consequently, air does not flow into the chamber from the outside when "O"-rings are missing or deteriorated, and the particulate sample stream is not diluted. Missing or deteriorated "O"-rings should not affect the particulate sample under normal operating conditions.

Our letter to you dated April 1, 1981 (Serial No.: BSE7/81-0694) [supplemental response to IE Reports 50-324/80-38 and 50-325/80-41] discussed the steps taken to review all weekly gaseous effluent reports and evaluate

the amount of particulate activity which had bypassed the particulate filters and was collected on the charcoal filters of the reactor and turbine building roof vent monitors. As indicated by our letter, an examination of the adjusted quarterly values of gaseous particulate effluents did not reveal any additional violations of Technical Specifications for gaseous effluent release limits given in Sections 2.5.2.b(2) and 2.5.2.c(2).

To ensure that the monitors are correctly maintained, a change has been made to Radiation Control and Test Procedure 2000, and the technicians have been counseled in the importance of maintaining these monitors. In addition, to ensure that the particulate filter is properly positioned and no bypass flow can occur, a new filter holder has been designed and placed in service.

Corrective action for this item has been completed.

Violation C: (Severity Level IV)

Technical Specifications, Appendix B, Section 3.5.1.d requires that radioactivity in liquid wastes be continuously monitored and recorded during release.

Contrary to the above, the requirements for continuously monitoring and recording the radioactivity in liquid waste were not met, in that:

1. Liquid waste containing radioactivity was released from the facility's storm drain system to a stabilization pond from April 1978 until July 1980 without continuously monitoring and recording the radioactivity level.
2. Liquid waste containing radioactivity was released from the overflow structure of the storm drain catch basin to the discharge canal through cracks in the wall of the overflow structure from May 1980 until November 1980 without continuously monitoring and recording the radioactivity level.

Carolina Power & Light Company's Response:

Carolina Power & Light Company (CP&L) acknowledges that this violation is correct as stated. Prior to February 22, 1980, the Storm Drain Collection Basin (SDCB) operated in an automatic mode. After February 22, 1980, due to contaminated liquids entering the storm drains located at the auxiliary boilers, a requirement for a Shift Foreman's clearance before pumping was placed on the SDCB discharge pumps, and the Radiation Control & Test (RC&T) group sampled the basin prior to each discharge to the stabilization pond. The storm drain basin water consistently showed very little activity going to the stabilization pond. The storm drain basin/stabilization pond liquid pathway was later examined as part of the NRC IE Bulletin 81-10 evaluation. As a result of this evaluation, a Radiation Control and Test procedure was developed to sample each batch of liquid pumped from the Storm Drain Collection Basin to the stabilization pond. These sample results, combined with the total pump flow, give a measure of the total activity discharged to the stabilization pond.

During May, 1980, CP&L Construction began to investigate sources of leakage to Radwaste. During this investigation, it was discovered that leakage was coming from a manhole located next to the SDCB, and leaks were suspected to exist from the basin to the manhole and thereby to Radwaste.

A RC&T Technician was assigned to work with the Construction group on cleaning the basin for examination. On August 1, 1980, the RC&T Technician noted that as the basin level rose, water could be seen rising in the overflow weir section of the basin, indicating a leak in the inner wall. The RC&T Technician notified the Environmental & Radiation Control (E&RC) Supervisor, who initiated a sampling program on the overflow section of the weir. Sample results indicated radioactivity concentrations at or near minimum detectable levels. Additionally, an analysis

was performed utilizing conservative values of radioactivity concentrations and leak rates to determine the environmental impact of potential releases via this pathway. This analysis was included in Enclosure 3, Storm Drain/Stabilization Pond System at BSEP, of the supplemental response issued to the NRC Region II Office on January 22, 1981 (Serial No. NO-81-119). Environmental doses attributable to this pathway were insignificant.

The SDCB was recognized as a potential effluent pathway, and actions were taken to prevent release. Between August 11 and 16, 1980, the basin was pumped out and cleaned of accumulated silt in preparation for locating and repairing holes in the basin wall. During the months of August, September, October, and November, the SDCB level was kept as low as possible due to continuing work at the basin and to prevent the basin overflowing to the discharge canal. When the storm drain basin water level reached the overflow pipe during periods of high rainfall, samples were taken of water entering the overflow pipe to ensure no radioactivity was being released by this route. On November 24, 1980, an inflatable air bag was placed in the overflow line to prevent the basin overflowing to the discharge canal; and on April 3, 1981, the inflatable bag was replaced by a permanent concrete patch.

Corrective action for this item is complete.

Violation D: (Severity Level IV)

10 CFR 50.72(a), requires that each licensee of a nuclear power reactor licensed under 50.21 or 50.22 notify the NRC Operations Center as soon as possible and in all cases within one hour by telephone of the occurrence of any of significant events including, any accidental, unplanned or uncontrolled radioactive release.

Contrary to the above, notification of a significant event was not made within one hour in that the NRC Operations Center was not notified of an unplanned release of airborne radioactivity from Auxiliary Boiler No. 2 on March 13, 1980. Members of the plant staff observed the release of steam resulting from tube leaks in the contaminated auxiliary boiler.

Carolina Power & Light Company's Response

Carolina Power & Light Company (CP&L) acknowledges that this violation is correct as stated; however, during this time period, there was a considerable amount of confusion concerning the requirements of 10 CFR 50.72, which was issued on February 29, 1980. This regulation made major changes in reporting requirements, and the specific requirements were not clear. Subsequently, we received guidelines from NRC in the form of Supplement No. 1 to IE Information Notice No. 80-06, dated July 29, 1980, for either reporting or not reporting under the provisions of 10 CFR 50.72. These guidelines were disseminated to the plant operating staff.

The full potential of auxiliary boiler releases was not recognized by our plant staff, so no complete evaluation was made for operating the boiler in a contaminated mode. While auxiliary boiler contamination was recognized as a problem area by the plant staff, it was the consensus of the plant staff that the auxiliary boilers could be cleaned. Decontamination was performed in a continuing effort from April 1978 until February 1980. Three separate blowdown lines were installed from the boiler into radwaste to aid in the cleaning effort. Chemical decontamination was attempted on both boilers with the assistance of the corporate technical staff. The health physics staff relied on extensive sample results which indicated a phase separation factor of 1000 between condensed steam and the auxiliary boiler drum. We now know that this separation factor is not appropriate in a situation where water is flashing to steam.

The failure to fully appreciate the potential for radiological releases resulting from auxiliary boiler tube leaks, combined with the confusion associated with the newly issued 10 CFR 50.72 revisions to reporting requirements, contributed to the failure to report the March 13, 1980 potential release from Auxiliary Boiler No. 2. A complete evaluation has been made for the maximum theoretical results of potential auxiliary boiler releases. The semi-annual effluent report for the period January 1, 1980 to June 30, 1980 has been revised by our letter of March 3, 1981 to include the maximum theoretical results of any known or potential releases; therefore, corrective action for this item is considered completed.

Violation E (Severity Level IV)

BSEP Technical Specifications, Appendix B, Section 5.4.1.1 requires that the licensee submit a semiannual report covering the previous six months operation within 60 days after January 1 and July 1 of each year. These reports shall include a summary of the quantities of radioactive effluents released from the plant.

Contrary to the above, the semiannual reports for June 30, 1979, December 31, 1979, and June 30, 1980 did not include (1) liquid effluents discharged from the stabilization pond during 1979 and 1980, and (2) auxiliary boiler releases subsequent to the auxiliary boiler atmospheric release of February 22, 1980 described in IE Reports 50-325/80-12 and 50-324/80-11.

Carolina Power & Light Company's Response

Carolina Power & Light Company (CP&L) acknowledges that this violation is correct as stated. The semi-annual reports specified in the BSEP Technical Specifications, Appendix B, Section 5.4.1.1, are required to contain a summary of the quantities of radioactive effluents released from the site. The report includes a summary of the quantities of radioactive liquid and gaseous effluents and solid wastes released from the plant as outlined in Regulatory Guide 1.21.

It had always been CP&L practice at Brunswick to use 10CFR20 guidelines for determining when a radioactive release occurred for both reporting and effluent accountability purposes. Note 5 to Table II, Appendix B, 10CFR20, states that an isotope can be considered as not present if it is less than 1/10 of the MPC as long as all radionuclides considered as not present do not exceed 1/4. If liquids were below this criteria, it was not considered as a radioactive release for both reporting and accounting purposes. This we subsequently learned was a misinterpretation of Regulatory Guide 1.21 and 10CFR50, Appendix I.

It was decided to seek guidance from the NRC regarding the appropriateness of this practice. Subsequently, a letter was written to NRC and the NRC response dated December 12, 1980 confirmed that it was appropriate to use Note 5 for determining reporting requirements for compliance with 10CFR20 but it did not apply for effluent accountability purposes. All future semi-annual effluent reports will comply with the accountability requirements in Regulatory Guide 1.21 and 10CFR50, Appendix I, and in accordance with the additional NRC guidance received. In the light of our previous interpretation of the regulations and regulatory guidance, the information we provided in the semi-annual reports may have been incomplete. As a result of NRC guidance, the semi-annual effluent reports of January 1, 1979 to June 30, 1979, July 1, 1979 to December 31, 1979, and January 1, 1980 to June 30, 1980 were revised by a letter March 3, 1981 to include liquid effluents discharged from the stabilization pond and to describe the maximum theoretical results of potential auxiliary boilers releases subsequent to the auxiliary boiler release of February 22, 1980.

Corrective action for this item has been completed.