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UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

November 29, 2011

EA-11-251

Mr. Michael Annacone
Vice President
Carolina Power and Light Company
Brunswick Steam Electric Plant
P. O. Box 10429
Southport, NC 28461

SUBJECT: BRUNSWICK STEAM ELECTRIC PLANT - NRC INSPECTION REPORT NOS.: 05000325/2011012 AND 05000324/2011012; PRELIMINARY WHITE FINDING

Dear Mr. Annacone:

This letter transmits a finding that has preliminarily been determined to be White, a finding with low to moderate safety significance that may require additional NRC inspections. As described in this letter (Section 1R01 of this report), the NRC inspectors identified an Apparent Violation (AV) of 10 CFR Part 50 Appendix B Criterion XVI, Corrective Action, for the failure to identify and correct a condition adverse to quality associated with the entrance enclosures for the Emergency Diesel Generator (EDG) fuel oil tank rooms. Specifically, the enclosures contained openings which would adversely impact their ability to mitigate external flooding of the EDG fuel oil tank rooms in the event of an external event (hurricane). In order to correct this condition, a new sealant material was installed to close the openings of the entrance enclosures for the EDG fuel oil tank rooms as well as installing jersey barriers to limit wave run-up on the enclosures. This finding was assessed based on the best available information, using the applicable Significance Determination Process (SDP) in accordance with Inspection Manual Chapter (IMC) 0609, Appendix M. The final resolution of this finding will be conveyed in a separate correspondence.

Following the initial review of this matter using preliminary quantitative analysis, Appendix M was used considering the uncertainties in the bounding analysis and the insights from the qualitative review. There is a lack of quantitative data and probabilistic risk assessment tools to accurately assess the risk significance of the performance deficiency in a timely manner. Based on the qualitative and quantitative analyses, this NRC identified finding has preliminarily been determined to have low to moderate safety significance.

~~Enclosures transmitted herewith contain SUNSI. When separated from Enclosures 2 and 3, this document is decontrolled.~~

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The finding is also an apparent violation (AV) of NRC requirements and is being considered for escalated enforcement action in accordance with the Enforcement Policy, which can be found on the NRC's Web site at http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html.

In accordance with NRC Inspection Manual Chapter (IMC) 0609, we intend to complete our evaluation using the best available information and issue our final safety significance determination within 60 days of the date of this letter. The significance determination process encourages an open dialogue between the NRC staff and the licensee; however, the dialogue should not impact the timeliness of the staff's final significance determination.

Before we make a final decision on this matter, we are providing you with an opportunity to: (1) attend a Regulatory Conference where you can present to the NRC your perspective on the facts and assumptions the NRC used to arrive at the finding and assess its significance, or (2) submit your position on the finding to the NRC in writing. If you request a Regulatory Conference, it should be held within 30 days of the receipt of this letter and we encourage you to submit supporting documentation as discussed below as soon as possible but at least 14 days prior to the conference in an effort to make the conference more efficient and effective. If a Regulatory Conference is held, it will be open for public observation. If you decide to submit only a written response, such submittal should be sent to the NRC within 30 days of your receipt of this letter. If you decline to request a Regulatory Conference or submit a written response, you relinquish your right to appeal the final SDP determination, in that by not doing either, you fail to meet the appeal requirements stated in the Prerequisite and Limitation sections of Attachment 2 of IMC 0609.

Please contact Randall Musser at (404) 997-4603 and in writing within 10 days from the issue date of this letter to notify the NRC of your intentions. If we have not heard from you within 10 days, we will continue with our significance determination and enforcement decision. The final resolution of this matter will be conveyed in separate correspondence.

Because the NRC has not made a final determination in this matter, no Notice of Violation is being issued for this inspection finding at this time. In addition, please be advised that the number and characterization of the apparent violation described in the enclosed inspection report may change as a result of further NRC review.

In accordance with 10 CFR 2.390 of the NRC's Rules of Practice, a copy of this letter, Enclosure 1, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of

NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room). However, because of the security-related information contained in Enclosures 2 and 3, and in accordance with 10 CFR 2.390, a copy of Enclosures 2 and 3 will not be available for public inspection.

Sincerely,

/RA/

Richard P. Croteau, Director
Division of Reactor Projects

Docket Nos.: 50-325, 50-324
License Nos.: DPR-71, DPR-62

Enclosure: (1). Inspection Report 05000325, 324/2011012
w/Attachment: Supplemental Information
(2). Significance Determination Process Using Qualitative Criteria
(3). Significance Determination, SRA Analysis Number BRU1103
w/Attachments:

cc w/encl: (See page 4)

NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Richard P. Croteau, Director
Division of Reactor Projects

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☐ PUBLICLY AVAILABLE X NON-PUBLICLY AVAILABLE ☐ SENSITIVE X NON-SENSITIVE

ADAMS: X Yes ACCESSION NUMBER:___ML113340075_____ X SUNSI REVIEW COMPLETE X FORM 665 ATTACHED

OFFICE	RII:DRP	RII:DRP	RII:DRP	RII:EICS	RII:DRP		
SIGNATURE	JGW1	PBO by email	RAM	SES for C.Evans	/RA/		
NAME	JWorosilo	PO'Bryan	RMusser	SSparks	RCroteau		
DATE	11/28/2011	11/28/2011	11/25/2011	11/28/2011	11/29/2011		
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY DOCUMENT NAME: G:\DRPII\RPB4\BRUNSWICK\REPORTS\2011 REPORTS\11-012\BRU CHOICE LETTER WITHOUT ENCL 2011012.DOCX

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Letter to Michael J. Annacone from Richard P. Croteau dated November 29, 2011

SUBJECT: BRUNSWICK STEAM ELECTRIC PLANT - NRC INSPECTION REPORT NOS.: 05000325/2011012 AND 05000324/2011012; PRELIMINARY WHITE FINDING

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.:	50-325, 50-324
License Nos.:	DPR-71, DPR-62
Report Nos.:	05000325/2011012, 05000324/2011012
Licensee:	Carolina Power and Light (CP&L)
Facility:	Brunswick Steam Electric Plant, Units 1 & 2
Location:	8470 River Road, SE Southport, NC 28461
Dates:	July 1, 2011, through November 28, 2011
Inspectors:	P. O'Bryan, Senior Resident Inspector
Approved by:	Richard P. Croteau, Director Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000325/2011012, 05000324/2011012; July 1, 2011, - November 28, 2011; Brunswick Steam Electric Plant, Units 1 & 2; Adverse Weather Protection

This report covers a review of the Emergency Diesel Generator (EDG) fuel oil tank room enclosures by the resident inspectors and a senior reactor analyst. One preliminary White finding with an Apparent Violation was identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). The cross-cutting aspects were determined using IMC 0310, "Components Within the Cross-Cutting Areas". Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- (TBD) The inspectors identified an Apparent Violation (AV) of 10 CFR Part 50 Appendix B Criterion XVI, Corrective Action, for failure to identify and correct a condition adverse to quality associated with the entrance enclosures for the Emergency Diesel Generator (EDG) fuel oil tank rooms. Specifically, the enclosures contained openings which would adversely impact their ability to mitigate external flooding of the EDG fuel oil tank rooms in the event of a design basis external event (hurricane). These openings were not identified or corrected by the licensee prior to the inspectors identifying the issue. The licensee corrected this condition by installing new sealant material to close the openings and entered the issue into their corrective action program. The licensee entered this issue into their corrective action program as AR 466253.

  The licensee's failure to identify and correct the degradation of the access enclosures to the EDG fuel oil tank rooms was a performance deficiency. The finding is more than minor because it affects the Mitigating Systems cornerstone attribute of protection against external events and affects the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Specifically, the water entry pathways into the EDG fuel oil tank rooms increased the likelihood of EDG failure during an external weather event (hurricane). The significance of this finding was evaluated using Inspection Manual Chapter 0609, Significance Determination Process. Using the phase 1 worksheet tables 4a and 4b, the finding was evaluated to be potentially greater than green because it screens as potentially risk significant due to a seismic, flooding, or severe weather initiating event which would degrade two or more trains of a multi-train system or function. Table 4a of the phase 1 worksheet requires a phase 3 significance determination evaluation. Following the initial review of this matter using preliminary quantitative analysis, Appendix M was used considering the uncertainties in the bounding

analysis and the insights from the qualitative review (See Appendix M in Enclosure 2 and Phase 3 in Enclosure 3 of this report). There is a lack of quantitative data and probabilistic risk assessment tools to accurately assess the risk significance of this performance deficiency in a timely manner. The NRC preliminarily concluded that, although licensee performance is outside the bounds of nominal performance, cornerstone objectives were met with minimal reduction in safety margin. The Agency concluded that the finding likely did not represent a decline in licensee performance with a significant reduction in safety margin. Based on the available information from the quantitative and qualitative analyses, and the guidance of Appendix M, the NRC concluded that this performance deficiency is preliminarily characterized as a low to moderate safety significance finding (White). This finding has a cross-cutting aspect in the Corrective Action Program component of the Problem Identification and Resolution area because the licensee did not identify the issue completely, accurately, and in a timely manner commensurate with its safety significance, [P.1(a)]. (Section 1R01)

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection

.1 External Flooding

a. Inspection Scope

The inspectors evaluated the design, material condition, and procedures for coping with the design basis probable maximum flood. The evaluation included a review to check for deviations from the descriptions provided in the Updated Final Safety Analysis Report (UFSAR) for features intended to mitigate the potential for flooding from external factors. As part of this evaluation, the inspectors checked for obstructions that could prevent draining, checked that the roofs did not contain obvious loose items that could clog drains in the event of heavy precipitation, and determined that barriers required to mitigate the flood were in place and operable. Additionally, the inspectors performed a walkdown of the protected area to identify any modification to the site which would inhibit site drainage during a probable maximum precipitation event or allow water ingress past a barrier. The inspectors also reviewed the abnormal operating procedure (AOP) for mitigating the design basis flood to ensure it could be implemented as written.

b. Findings

Introduction: The inspectors identified an Apparent Violation (AV) of 10 CFR Part 50 Appendix B Criterion XVI, Corrective Action , for the licensee's failure to identify and correct a condition adverse to quality associated with the entrance enclosures for the Emergency Diesel Generator (EDG) fuel oil tank rooms. Specifically, the enclosures contained openings which would adversely impact their ability to mitigate external flooding of the EDG fuel oil tank rooms in the event of a design basis external event (hurricane). These openings were not identified or corrected by the licensee prior to the inspectors identifying the issue. The licensee entered this issue into their corrective action program as AR 466253.

Description: On April 20, 2011, inspectors observed openings in the two steel enclosures that house the water tight doors and cover the stairwells to the EDG 4-day fuel oil tank rooms. These enclosures are made of structural steel framing, corrugated sheet metal, and standard sheet metal building components for outdoor structures. These enclosures and their associated water-tight doors are required to prevent water entry into the 4-day tank rooms during flooding from a design basis hurricane. In both the north and south enclosures several holes with an area of up to 0.2 square feet each were found. In addition, there were several unsealed pin holes and a narrow gap along the perimeter of the base walls.

The licensee's Updated Final Safety Analysis Report (UFSAR) section 2.4.5.2, Surge and Seiche Water Levels, specifies the maximum flood level for still water during the design basis hurricane is 22' mean sea level (MSL) and section 2.4.5.3, Wave Action, specifies the maximum height of water due to wave action forces is 25' 6' MSL. The concrete bases of the EDG fuel oil tank room enclosures rests at 23' MSL. UFSAR section 3.4.1.1.1, Protection of Access Openings below Maximum High Water Elevation states that access openings located below the maximum high water elevation, including the access to the EDG fuel oil tank rooms, are designed to limit in-leakage to 5 gallons per minute. The gaps and holes found in the EDG fuel oil tank room enclosures were at an elevation of approximately 23' 11" MSL, 1' 7" below the maximum high water elevation of 25' 6". The holes in the enclosures would allow more than 5 gpm to pass into the access to the EDG fuel oil tank rooms during a design basis hurricane. This condition is believed to have existed for more than a year. The licensee corrected this condition by installing new sealant material to close the openings and entered the issue into their corrective action program (AR #466253).

Analysis: The licensee's failure to identify and correct the degradation of the access enclosures to the EDG fuel oil tank rooms was a performance deficiency. The finding is more than minor because it affects the Mitigating Systems cornerstone attribute of protection against external events and affects the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Specifically, the water entry pathways into the EDG fuel oil tank rooms increased the likelihood of EDG failure during an external weather event (hurricane). The significance of this finding was evaluated using Inspection Manual Chapter 0609, Significance Determination Process. Using the phase 1 worksheet tables 4a and 4b, the finding was evaluated to be potentially greater than green because it screens as potentially risk significant due to a seismic, flooding, or severe weather initiating event which would degrade two or more trains of a multi-train system or function. Table 4a of the phase 1 worksheet requires a phase 3 significance determination evaluation. Following the initial review of this matter using preliminary quantitative analysis, Appendix M was used considering the uncertainties in the bounding analysis and the insights from the qualitative review (See Appendix M in Enclosure 2 and Phase 3 in Enclosure 3 of this report). There is a lack of quantitative data and probabilistic risk assessment tools to accurately assess the risk significance of this performance deficiency in a timely manner. Some qualitative circumstances associated with the finding include, but are not limited to, the regulatory response to be taken by the Agency based on different levels of licensee performance. In this regard, the increased regulatory response band (i.e. White) would be entered when licensee performance is outside the normal performance range, but would still represent an acceptable level of performance. The NRC preliminarily concluded that, although licensee performance is outside the bounds of nominal performance, cornerstone objectives were met with minimal reduction in safety margin. The Agency concluded that the finding likely did not represent a decline in licensee performance with a significant reduction in safety margin.

Based on the available information from the quantitative and qualitative analyses, and the guidance of Appendix M, the NRC concluded that preliminarily the significance of low to moderate safety significance (White) is appropriate for this performance deficiency. This finding has a cross-cutting aspect in the Corrective Action Program component of the Problem Identification and Resolution area because the licensee did not identify the issue completely, accurately, and in a timely manner commensurate with its safety significance. [P.1(a)]

Enforcement: 10 CFR Part 50 Appendix B Criterion XVI, Corrective Action states, in part, that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected. Contrary to the above, as of April 20, 2011, the licensee failed to identify and correct a condition adverse to quality involving the external flood barrier for the EDG fuel oil tank rooms. Specifically, the entrance enclosures had several openings, unsealed pin holes, and a narrow gap along the perimeter of the base walls, which would allow water intrusion into the EDG fuel oil tank rooms during a design basis external event (hurricane). Upon discovery by the inspectors, the licensee corrected this condition by installing new sealant material to close the openings and entered the issue into their corrective action program (AR #466253). Because this violation has been determined to have preliminary low to moderate safety significance (White), it will be tracked as AV 05000325, 324/2011012-01, Failure to Identify and Correct Degradation of the Emergency Diesel Generator Fuel Oil Tank Room Entrance Enclosures.

4OA6 Management Meetings

1. Exit Meeting Summary

On November 28, 2011, the resident inspectors presented the inspection results to Mr. Michael Annacone, and other members of the licensee staff. The inspectors confirmed that proprietary information was not provided or examined during the inspection period.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

M. Annacone, Site Vice President
J. Burke, Director – Engineering
J. Frisco, Plant General Manager
K. Gerald, Acting Manager - Maintenance
S. Gordy, Manager – Operations
F. Jefferson, Manager – Systems Engineering
P. Mentel, Manager - Support Services
A. Pope, Supervisor – Licensing and Regulatory Affairs
T. Sherrill, Engineer - Technical Support
H. Willets, Manager– Design Engineering
E. Wills, Director – Site Operations

NRC Personnel

Randall A. Musser, Chief, Reactor Projects Branch 4, Division of Reactor Projects Region II

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000325,324/2011012-01	AV	Failure to Identify and Correct a Degraded Flood Barrier for the Emergency Diesel Generator Fuel Oil Tank Rooms (Section 1R01)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

0AOP-13.0, Operation during Hurricane, Flood Conditions, Tornado, or Earthquake
0A1-68, Brunswick Nuclear Plant Response to Severe Weather Warnings
0PEP-02.1, Initial Emergency Actions
0PEP-02.6, Severe Weather
0O1-01.03, Non-Routine Activities
EGR-NGGC-0351, Condition Monitoring of Structures
PMID 43240, Building Inspection Routes
WO 753925, EDG Building Inspection Results