



Carolina Power & Light Company

Brunswick Nuclear Plant
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U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62
REPLY TO A NOTICE OF VIOLATION

Gentlemen:

On January 13, 1993, the Nuclear Regulatory Commission (NRC) issued a Notice of Violation for the Brunswick Steam Electric Plant, Units 1 and 2. The basis for the violation is provided in NRC Inspection Report 50-325/93-55 and 50-324/93-55. Carolina Power & Light Company finds the inspection does not contain information of a proprietary nature. Enclosure 1 provides Carolina Power & Light Company's response to the Notice of Violation in accordance with the provisions of 10CFR2.201. This response is provided in accordance with the agreement established between H. O. Christensen of the NRC and W. Levis of CP&L on January 26, 1994, regarding extension of the response time to February 25, 1994.

Please refer any questions regarding this submittal to Mr. S. F. Tabor at (910) 457-2178.

Very truly yours,

J. Cowan, Plant Manager - Unit 1
Brunswick Nuclear Plant

sft/

Enclosures

1. Reply to Notice of Violation
2. List of Commitments

cc: Mr. S. D. Ebnetter, Regional Administrator, Region II
Mr. P. D. Milano, NRR Project Manager - Brunswick Units 1 and 2
Mr. R. L. Prevatte, Brunswick NRC Senior Resident Inspector

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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. Communication training of appropriate maintenance personnel on procedure revision documentation requirements, the need for procedure group contact with procedure change request originators to ensure potential technical issues are prioritized properly, and the necessity of interaction between maintenance groups	N/A
2. Positive controls will be implemented to ensure procedural impact reviews are performed prior to plant modification operability.	N/A
3. Revision of PLP-22 or ENP-12 as appropriate to clarify the importance of specifying sheet number when listing drawing numbers	N/A
4. Training of Technical Support personnel on the need to specify sheet numbers on TPM travelers and on how the TPM traveler is used by the Operations Production Assistant to support drawing installation and removal	N/A
5. Review of AI-59 requirements by Operations and Maintenance to determine the acceptability of using AI-59 tags for general identification purposes and revision of AI-59 as needed to incorporate the results of this review	N/A
6. Review of the lessons learned from the event involving the failure to remove jumper and wire tags at completion of the work activity including classroom instruction on the AI-59 process with appropriate Maintenance personnel	N/A
7. The existing informational aid control processes will be consolidated into a site program.	N/A
8. Appropriate site personnel will receive training to ensure an adequate understanding of the processes used to control informational aids prevails and the expectations for addressing potential unauthorized informational aids during routine work activities and inspections are communicated.	N/A

ENCLOSURE

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 and 2
NRC DOCKET NOS. 50-325 & 50-324
OPERATING LICENSE NOS. DPR-71 & DPR-62
REPLY TO NOTICE OF VIOLATION

VIOLATION A:

Technical Specification 6.8.1.a requires that written procedures shall be established, implemented, and maintained covering the activities referenced in Regulatory Guide 1.33, November 1972. Included in the covered activities are maintenance procedures and instruction.

Contrary to the above,

1. Preventive maintenance procedure OPM-FLT508, Diesel Generator Starting Air and Control Air Filters, was not adequately maintained, in that torque specifications for the control air moisture-trap cap screws (obtained from the vendor on November 12, 1993, to preclude recurring gasket failures) were not included as of December 11, 1993. As a result, the control air moisture-trap associated with EDG 4 was reassembled on November 29, 1993, with technically deficient cap screw torque. This condition went undiscovered until NRC intervention on December 10, 1993.
2. As of December 11, 1993, Preventive Maintenance Routes 1MSLAAC and 1MSLAAB (Filter Inspection/Replacement On Starting/Control Air For EDGs 1 and 2, respectively) were not adequately maintained, in that both required inspection/replacement of a Hankinson Dehydrfilter which no longer exists. This component was eliminated from the control air systems of EDG 1 and 2 on July 17, and October 5, 1993, respectively.
3. On December 14, 1993, maintenance instructions provided in Work Request/Job Order 93-BFLR2 (Troubleshoot Service Water Pump A Discharge Valve 2-SW-V14) were not adequately established, in that motor operator valve coupling replacement instructions did not reflect required torquing.

This is a Severity Level IV violation (Supplement I).

RESPONSE TO VIOLATION A:

Admission or Denial of Violation

Carolina Power & Light admits the violation.

Reason for Violation

Example 1:

On November 15, 1993, Component Engineering submitted a procedure change request for OPM-FLT508 to include a vendor recommended change to the Emergency Diesel Generator (EDG) control air filter gasket fastener torque requirements. The vendor recommendation had been provided to resolve gasket failures experienced on EDGs #3 and #4 on November 12, 1993. On November 29, 1993, prior to revising OPM-FLT508, EDG #4 scheduled preventive maintenance was performed utilizing OPM-FLT508. Consequently,

the torquing of the control air filter gasket to a value other than that recommended by the vendor occurred.

The use of OPM-FLT508 prior to inclusion of the vendor recommended torque requirements resulted from assigning an insufficient priority to the procedure change request. The assigned priority indicated that although the revision adds value, a technical deficiency did not exist. Consequently, OPM-FLT508 was not placed on hold to prevent further use of the procedure.

The assignment of an insufficient priority to the OPM-FLT508 procedure change resulted from inadequate communication between Component Engineering and Maintenance Procedures group personnel. The procedure change request documentation did not specify that the revision was needed to ensure the technical accuracy of the procedure. Additionally, Maintenance Procedure personnel did not adequately question the impact of the change on the technical accuracy of the procedure.

Example 2:

EDGs #1 and #2 preventive maintenance routes 1MSLAAC and 1MSLAAB prescribed the use of procedure OPM-FLT508, Diesel Generator Starting Air and Control Air Filters, to support inspection/replacement of the diesel control air filters. The OPM-FLT508 procedure included in the route work packages had not been revised to reflect a change to the type of filter previously installed by plant modification (PM) 92-107, Diesel Generator Air System Moisture Removal. Although PM 92-107 had been turned over to the plant by November 11, 1993, a review of the modification's procedural impact had not been performed by Maintenance. The delay in performance of this review was due to the inadequate assignment of resources needed to perform plant modification review. Consequently, the necessary actions were not taken prior to the development of the preventive maintenance work packages to ensure that OPM-FLT508 was revised prior to its use on December 6 and 13, 1993.

Example 3:

Work Request Job Order (WR/JO) 93-BFLR2 was initiated to support troubleshooting of the 2-SW-V14, Service Water Pump A Discharge Valve, which was stuck in the closed position. The initial troubleshooting plan included uncoupling the valve from the valve actuator to isolate the cause of the problem. The maintenance planner included references to the appropriate procedures required to identify and repair potential problems which might be encountered with the valve or the valve actuator. To support the repair, the corrective maintenance procedure OCM-VBF501, Jamesbury Model 815L, 150 PSI, 4 Inch - 60 Inch, Lugged Body, Wafer - Sphere, Butterfly Valves, was referenced in the WR/JO. OCM-VBF501 contains the torque requirements for the 2-SW-V14 valve coupling.

While uncoupling the valve from its actuator a helicoil backed out of the threaded hole in the casting of the coupling. To acquire a replacement coupling a complete valve and actuator assembly was obtained and its coupling removed. In preparation for the installation of the new coupling, the technicians questioned a maintenance engineer about the coupling torque requirements. The engineer informed the technicians that he believed tightening the coupling to "wrench-tight" was appropriate but recommended that the technicians reference the appropriate procedure requirements prior to installing the coupling. Prior to ascertaining the torque requirements and installing the new coupling the technicians were questioned by an NRC inspector about the torquing requirements for the coupling. The technicians informed the inspector that they believed "wrench-tight" was acceptable based on their previous discussion with the

maintenance engineer but that they would need to verify that information against the procedural requirements. The technicians later reviewed OCM-VBF501 as referenced in the WR/JO work instruction and determined the appropriate torque requirement for the coupling.

Maintenance Management expects technicians to perform maintenance in accordance with the work instructions provided on WR/JOs. In this event the technicians were in the Clean Maintenance Shop preparing to go to the field to complete coupling installation and recognized that a review of the procedures as specified in the WR/JO was needed. Without NRC intervention, the expectation is that the technicians would have identified the torque requirements from the procedure references provided, obtained specific written instructions in the WR/JO to apply the torque, and installed the new coupling satisfactorily.

A review of the initial work package instruction reaffirms that the level of instruction provided in the planning of the 2-SW-V14 WR/JO exceeded management expectations and procedural requirements for troubleshooting. Consequently, CP&L does not consider this event to be an adverse condition and therefore, no corrective actions are planned.

Corrective Actions Which Have Been Taken and Results Achieved

Example 1:

EDG #4 control air filter gasket has been torqued in accordance with the vendor recommendations.

OPM-FLT508 has been revised to include the vendor recommended torque requirements.

Example 2:

Maintenance Procedure Group personnel have been reassigned to the review of plant modifications. The backlog of plant modifications is the initial focus of this review.

Corrective Steps Which Will Be Taken to Avoid Further Violations

Example 1:

Communication training of appropriate maintenance personnel will be performed on the following:

Documentation requirements for revising procedures

The need for procedure group contact with procedure change request originators to ensure potential technical issues are prioritized properly

The necessity of interaction between maintenance groups

Example 2:

Positive controls will be implemented to ensure procedural impact reviews are performed prior to plant modification operability.

Date When Full Compliance Will Be Achieved

Carolina Power & Light believes that it is in compliance with Technical Specification 6.8.1.a.

VIOLATION B:

Technical Specification 6.8.1.a requires that written procedures shall be established, implemented, and maintained as recommended in Appendix "A" of Regulatory Guide 1.33, November 1972. Paragraphs A.3 and A.4 of Regulatory Guide 1.33 recommend procedures for equipment control, temporary changes, jumper control, and administrative procedures.

Instruction OI-13, Valve and Electrical Lineup Administrative Controls, Operating Procedure Step 4.6, requires that all valves will be maintained in the position required for the Operating Procedure (OP) valve lineup. It further states that if a valve is being operated in the course of an approved procedure it will be returned to its OP lineup position when the procedure is completed.

Plant Procedure PLP-22, Temporary Modifications, Step 5.6, closeout, requires that temporary modifications (TPM) sketches be removed from the control room drawings when the TPM is closed.

Plant Notice PN-30, Integrated Recovery Methodology, Step 6.7.5, requires that for open items, the outage scope deletion form shall be used for the deletion of an item that is in the integrated startup schedule.

Administrative Instruction AI-59, Jumpering and Wire Removal, Step 5.3, requires that after the completion of the job, the wire is reconnected, the jumper and wire removal tags shall be attached to the work request (if contaminated, tags should be disposed of properly and explanation attached to the work request).

Contrary to the above:

1. On December 9, 1993, valve 1-E41-F036 had not been returned to its OP valve line-up position upon completion of special procedure 1-SP-93-070, RCIC/HPCI Low Pressure Testing Using Auxiliary Steam. Based on this finding, the licensee identified three additional valves that had not been returned to their OP valve lineup positions.
2. On December 11, 1993, a TPM (1-92-0336) sketch was not removed from the Unit 1 Core Spray drawing D-25024 following closeout of the TPM on September 30, 1993. The licensee conducted an audit of temporary modifications on December 13, 1993, and identified additional problems with control of TPM sketches.
3. Open Item 93-ATDD1, Drywell Fan Isolators, was deleted from the startup schedule without completing the outage scope deletion form.
4. As of December 10, 1993, several jumper and wire removal tags in the Unit 1 drywell were not properly removed after work had been completed.

This is a Severity Level IV violation (Supplement I).

RESPONSE TO VIOLATION B:

Admission or Denial of Violation

Carolina Power & Light admits the violation.

Reason for Violation

Example 1:

The special procedure (SP) developers did not utilize the applicable

reference procedure to validate the restoration of the four valves found in the open versus the locked open position. The OPs are the sole reference for system standby line-up. Procedure authors and reviewers are expected to utilize the applicable OP in determining valve position; however, in this case the persons involved relied upon their understanding of the valve and system function and failed to recognize the need to address those factors which do not directly impact system function such as the installation of valve locking devices. Although SP 1-93-070 was written to ensure that the affected valves were returned to their standby line-up positions, the SP did not specify locking the valves in those positions.

Example 2:

PLP-22 requires that engineering personnel list the plant drawings affected by the temporary modification on the TPM traveler. Sketches reflecting changes to the plant drawings are then attached to the TPM traveler along with the associated engineering evaluation and routed to Operations. The TPM sketches are then attached to the affected plant drawing by the Operations Production Assistant. Upon cancellation of the TPM the Production Assistant references the TPM traveler listing of affected plant drawings to support removal of the TPM sketches.

The system engineer responsible for ensuring the accuracy of the drawings affected by TPM 1-92-0336 did not ensure that the plant drawing sheet number was included along with the drawing number on the TPM traveler. The original TPM traveler approved for installation on March 31, 1993, listed the drawings affected by TPM 1-92-0336 generically as D-25024. Drawing D-25024 consists of two sheets, one for the "A" loop and another for the "B" loop of Core Spray. The original traveler was intended for only the "A" loop of Core Spray and thus should have specified sheet #2 of drawing D-25024. On June 11, 1993, following a revision to TPM 1-92-0336 for inclusion of the "B" loop of Core Spray, an additional TPM traveler was generated. The additional traveler correctly listed the drawing affected by the TPM revision as D-25024, sheet #1. Both travelers existed in the control room for the remaining duration of the temporary modification installation. Upon cancellation of TPM 1-92-0336, the Operations Production Assistant assumed that the additional traveler indicating the sheet number was provided to further clarify that sheet #1 was the drawing affected by TPM 1-92-0336. Consequently, the Production Assistant removed only the sketch attached to D-25024, sheet #1.

Example 3:

To support the design and construction planning of anticipated drywell cooling system supports, a block of sketch numbers was reserved and WR/JO 93-ATDD1 was initiated. In accordance with PN-30 requirements, a review of WR/JO 93-ATDD1 was performed to determine whether the WR/JO should be considered as outage scope. With the work identified as STSI and recognizing that commitments existed for resolving STSI issues prior to startup, the decision was made to add the WR/JO to the outage scope.

Prior to the development of the proposed sketches, engineering determined that the anticipated supports would not be required. Consequently, the proposed sketches were never issued and the engineering for the anticipated duct supports was canceled. After being informed that the proposed sketches and associated supports were not necessary, the drywell cooling system engineer deleted WR/JO 93-ATDD1 on August 27, 1993. The deletion of the WR/JO was conducted in accordance with plant procedure PLP-24, Work Management Process.

The PN-30 process was established to ensure that outage scope additions and deletions are accomplished within a controlled process. The PN-30 outage scope deletion process provides for the review of work items to determine whether the item is required to be completed during the current outage or acceptable for rescheduling. In this event, WR/JO 93-ATDD1 was established to identify proposed work for work planning/scheduling purposes. When an evaluation determined that the proposed work was not necessary, a PN-30 outage scope deletion review was deemed as not necessary since the intent of that review is to assess the acceptability of deferring actual work. The manner in which WR/JO 93-ATDD1 was deleted was in accordance with PN-30 methodology and is not considered an adverse condition. To verify the application of the PN-30 process, a review of the deleted work items in five systems was performed. This review did not identify the deletion of work which was required to be performed and therefore, further corrective actions are not appropriate.

Example 4:

During the NRC Readiness Assessment Team inspection conducted in December of 1993, an inspector observed 10 jumper and wire removal tags which remained installed on equipment work on that equipment had been completed. Seven of the jumper and wire removal tags had been left on safety relief valve (SRV) air tubing which had been removed during the B109R1 refuel outage to support SRV repairs and three of the tags had been left on neutron monitoring cables which had been disconnected to support corrective maintenance performed in 1988.

Personnel performing neutron monitoring system corrective maintenance did not apply adequate self checking to ensure that the jumper and wire removal tags attached to the neutron monitoring instrumentation cables were removed prior to completion of the work activity. Additionally, maintenance personnel did not recognize the need to document the status of the tags on the WR/JO upon installation of the tags or at the completion of the work activity.

Technicians disconnecting the SRV air tubing used the jumper and wire removal tags controlled by AI-59 to temporarily label the SRV tubing. Due to the unique design of each piece of SRV air tubing, temporary labelling was considered necessary to support SRV air tubing reconnection. The WR/JO controlling the work activity required tagging the disconnected tubing; however, no specific guidance regarding the appropriate tagging process was provided. The technicians used the AI-59 tags due to their convenience and durability and because of past experience with the use of these tags. Use of the AI-59 tags in this manner represents a misapplication of the AI-59 process. The technicians misapplied the jumper and wire removal process controlled by AI-59 because they did not fully understand the specific requirements established in AI-59 for the proper use of jumper and wire removal tags.

The technicians did not apply adequate attention to detail during the SRV tubing reconnection activity. Consequently, the AI-59 tags were not removed from the tubing reconnected to 7 of the 11 SRVs. The technicians performing the tubing reconnection believed that once the tubing was reconnected, pressurized, and successfully post maintenance tested that the tags would be removed. However, the need to remove the tags was not recognized at the completion of the work activity.

Corrective Actions Which Have Been Taken and Results Achieved

Example 1:

SP 1-93-070 was reviewed to ensure affected valves had been returned to their correct positions. No valves were identified as being out of position.

The valves repositioned by SP 1-93-070 were reviewed to determine if locking devices should have been reinstalled at completion of the special procedure. A total of four valves were identified as requiring the installation of locking devices. These locking devices have been installed.

Training of appropriate Technical Support personnel on the event has been conducted to emphasize the need to reference pertinent procedures such as the OPS.

Example 2:

Adverse Condition Report (ACR) B93-398 was initiated to identify and correct the problems associated with TPM 1-92-0336. As part of the corrective action for ACR B93-398 an audit of the Main Control Room, Work Control Center, and Clearance Center controlled drawings was performed. The audit revealed additional drawing discrepancies associated with temporary modifications for which immediate corrective actions have been completed. The scope of the root cause analysis for ACR B93-398 was expanded to address the audit findings.

Example 4:

Permanent identification tags have been installed on the SRV tubing to alleviate the need to install temporary tags during future maintenance.

Clear expectations concerning the proper labeling of components and the proper documentation of information on WR/JOs have been reviewed with the appropriate maintenance personnel.

Corrective Steps Which Will Be Taken to Avoid Further Violations

Example 1:

CP&L believes the corrective actions already taken are adequate for preventing further violations.

Example 2:

PLP-22 or ENP-12, Engineering Evaluation Procedure, will be revised as appropriate to clarify the importance of specifying sheet number when listing drawing numbers.

Technical Support personnel will review the need to specify sheet numbers on TPM travelers during Technical Support Real Time Training. This training will also stress how the TPM traveler is used by the Operations Production Assistant to support drawing installation and removal.

Example 4:

Maintenance and Operations will perform a review of the requirements of AI-59 to determine the acceptability of using AI-59 tags for general identification purposes and Operations will revise the procedure as needed.

A review of the lessons learned from this event including classroom instruction on the AI-59 process will be conducted with the appropriate Maintenance personnel.

Date When Full Compliance Will Be Achieved

Carolina Power & Light believes it is in compliance with Technical Specification 6.8.1.a.

VIOLATION C:

10 CFR 50, Appendix B, Criterion XVI, Corrective Action, states in part, measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected.

Contrary to the above, the corrective actions for violations B.1, for NRC Inspection Report 50-324/93-201, dated June 23, 1993, were inadequate, in that on December 14, 1993, an unauthorized operator aid (span gas data sheets) was identified on the drywell hydrogen and oxygen monitor, CAC 4409 and 4410. The data sheets were unauthorized due to the cancellation of Maintenance Procedure OMI-16-040A, Replacement of CAC-QT-4409/4410 Calibration Gas Cylinders, on November 2, 1993.

This is a Severity Level IV violation (supplement I).

RESPONSE TO VIOLATION C:

Admission or Denial of Violation

Carolina Power & Light admits the violation.

Reason for Violation

The corrective actions for Notice of Violation 93-201 were intended to eliminate unauthorized operator aids at BNP through an initial limited scope inspection of site control panels and removal of the remaining unauthorized aids during routine activities. Although the initial inspection of site control panels was successful in identifying and removing a significant number of the existing unauthorized aids, the actions taken to support the removal of the remaining unauthorized aids were inadequate.

The ongoing effort was inadequate because the multiple processes (including plant approved procedures) used to control informational aids were not communicated adequately nor was adequate guidance for the validation of informational aids provided to site personnel. During an inspection of the hydrogen/oxygen control panel performed in December of 1993, the span gas data sheets were allowed to remain in place without an understanding of the specific controls established to validate the acceptability of the informational aid.

Corrective Actions Which Have Been Taken and Results Achieved

The span gas data sheets have been removed from the Unit 1 and Unit 2 hydrogen/oxygen monitor panels.

BNP recognizes that the review of the MI-16-040A deletion package was inadequate in that the need to remove the span gas data sheets was not recognized. Consequently, Maintenance procedure writers have received training on the need to address informational aids during procedure cancellation.

Corrective Steps Which Will Be Taken to Avoid Further Violations

The existing informational aid control processes will be consolidated into a site program. This consolidated program will provide consistent identification of authorized informational aids and thus provide a basis against which remaining unauthorized aids can be judged.

Appropriate site personnel will receive training to ensure an adequate understanding of the processes used to control informational aids prevails and the expectations for addressing potential unauthorized informational aids during routine work activities and inspections are communicated. These expectations include the following:

- o Identification of the process used to control the informational aid (i.e., plant approved procedure, OI-41, or AI-97)
- o Proper validation against the process used to control the informational aid
- o Unauthorized informational aids which are deemed inappropriate for removal due to plant conditions will be identified and removed as appropriate

Date When Full Compliance Will Be Achieved

Carolina Power & Light believes it is in compliance with Criterion B of 10 CFR 50, Appendix B.