CP&L
Carolina Power & Light Company
Brunswick Nuclear Project
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BRUNSWICK STEAM ELECTRIC PLANT UNITS 1 AND 2
DOCKET NOS. 50-325 AND 50-324
LICENSE NOS. DPR-71 AND DPR-62
RESPONSE TO INFRACTIONS OF NRC REQUIREMENTS

Gentlemen:

The Brunswick Steam Electric Plant (BSEP) has received I&E Inspection Report 50-325/89-35 and 50-324/89-35 and finds it does not contain information of a proprietary nature.

This report identified two items that appeared to be in noncompliance with NRC requirements. Enclosed is Carolina Power & Light Company's response to this violation.

Very truly yours,

J. L. Harness, General Manager
Brunswick Nuclear Project

TH/mcg

Enclosure

cc: Mr. S. D. Ebneter
Mr. E. G. Tourigny
BSEP NRC Resident Office



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Violation A

10CFR50, Appendix B, Criterion VI, and the licensee's accepted QA program (FSAR Section 17.2.6) collectively require that measures shall be established to assure that changes to documents shall be reviewed and approved by the same organization(s) that performed the original review and approval.

Contrary to the above, on October 3, 1989, welding filler metal material specification CPL-XXXX-W-01 had been revised without the knowledge and approval of the cognizant engineer, resulting in the procurement and acceptance of material not meeting subject specification's requirements.

This is a Severity Level IV violation.

Admission or Denial of the Violation

Specification CPL-XXXX-W-01 was not revised as stated in the violation. Additional requirements above those mandated by CPL-XXXX-W-01 were imposed for this specific application of weld filler metal. CP&L acknowledges that necessary controls were not established to ensure that additional imposed requirements, above specification and modification requirements, were maintained throughout the procurement process. It is not felt that the safety significance of this issue warrants a Level IV violation.

Reason for the Violation

A Purchase Request (BESU-40118) for 0.035" to be used as weld filler material for the Recirculation Pipe Replacement Project (RPRP) Plant Modification (PM) 89-038 was issued 5/8/89. The Purchase Request was developed specific to this modification according to the requirements of Specification CPL-XXXX-W-01, with supplemental purchase requirements, as defined through discussions with the EPRI group. BSP Memorandum BEM-25571 was the document initiating the Purchase Requisition. The supplemental requirements included increasing the minimum acceptable amount of delta ferrite from 5 FN to 8 FN and requiring additional testing above specification and modification requirements.

During procurement of needed materials for the RPRP, it became necessary to revise the purchase requisition to delete the additional testing requirements for the weld filler material that were above specification and modification requirements. The delta ferrite minimum requirements were to remain as part of the purchase requirements. The Nuclear Engineering Department (NED), the originating design organization for the modification, and the Outage Management/ Modification organization held telephone conversations discussing the deletion of these additional testing requirements. As a result of these discussions, an Outage Management/Modification project engineer issued BSP memorandum (BEM)-26169,

requesting the deletion of Supplementary Requirements Part 1 Weld Procurement-ASME Section III, Class 1, in its entirety, and adding "the material shall conform to Part 1, CPL-XXXX-W-01, except carbon content shall not exceed weight percent of 0.02% maximum." The delta ferrite requirements were inadvertently omitted from the revised purchase requisition. BEM-26169, as written, received no review/approval from NED.

The purchase requisition was subsequently revised and reissued as BESU-40296 according to the requirements of BEM-26169. There was nc requirement for purchase requisition BESU-40296 to receive review and approval by NED. The material was received on site and accepted by the site Quality Assurance organization upon review of the requirements contained in Purchase Requisition BESU-49296. The filler metal was placed in stock for issue to PM 89-038. The metal was never issued for use to the contractor group which was performing PM 89-038 installation. Items issued to the modification installation organization for PM 89-038 undergo further verification against original specification and design requirements prior to acceptance for use by the installation organization.

Section C, item 8.8 of PM 89-038 states design requirements for the purchase of weld filler materials "per CP&L specification No. CPL-XXXX-W-01 and any additional Purchase Order requirements." CPL-XXXX-W-01, an approved corporate document, allows that "the specification may be supplemented by additional requirements for a specific application; however, the basic requirements contained herein shall not be modified without corporate approval." No design review/approval is required by this specification for any addition of technical requirements for specific applications, as long as the additional requirements do not affect the original specification.

The additional requirements for this modification were set forth in an addendum to CPL-XXXX-W-01 entitled SUPPLEMENTARY REQUIREMENTS-PART I, WELD PROCUREMENT-ASME SECTION III, CLASS I. This document received no design organization sign-off for review/approval. The supplementary requirements were not incorporated into the modification by specifics. Not controlling the additional requirements for the weld filler material through a defined process allowed for the revision of the purchase requisition without review/approval by the original design organization.

This violation therefore occurred due to failure to implement necessary controls to ensure the procurement of weld filler material which met additional requirements determined necessary for this modification.

Corrective Actions Which Have Been Taken

Upon discovery of the lower ferrite material, the CP&L modification installation group notified the installation contractor for the RPRP of the specific heat numbers of acceptable weld filler material for PM 89-038. In addition, the deficient material was removed from storage at the Brunswick site. Sufficient weld filler material was available on site which met the specific requirements for this modification for Unit 2. Additional material has been procured to be used in the RPRP during the upcoming Unit 1 outage.

Corrective Actions to Prevent Recurrence

The site is currently reviewing the process of procurement of materials with specific applications to determine the corrective actions necessary to prevent recurrence of this event. A supplement to this response will be issued within 90 days. This event is believed to be an isolated occurrence.

Violation B

10CFR50, Appendix B, Criterion V and the licensee's accepted QA program (FSAR Section 17.2.5) collectively require that measures shall be established to assure that applicable code, regulatory and other requirements, i.e., quantitative acceptance criteria, necessary to assure quality are included or referenced in the documented procedures or instructions.

Contrary to the above, on October 29, 1989, certain licensee procedures approved for the control of special processes, i.e., radiography and welding, were found to be inadequate in that:

1. Radiographic Procedure GE-CPL-27.0, Revision 0, did not contain: radiographic acceptance standards as required by NB-5230 ASME, Section III (86W88), technique variables as required by T-282 ASME, Section V, 1980 Edition, penetrameter requirements per NB-5111, ASME, Section V (86W88) and had not been approved by the authorized code inspector.

2. Two weld fabrication procedures, F-TCI, Revision 0, Fitting and Tacking Consumable Inserts and WT-Q, Revision 0, Welding Training and Qualification, reference incorrect applicable code editions and addenda.

3. Weld Procedure Specification WPS-8.3.11W, Revision, incorrectly required welder performance qualification coupons to be liquid penetrant tested instead of radiography as required by the controlling CP&L Specification 248-155, Revision 0.

4. Weld Procedure Specification WPS-8.3.11W, Revision 1, requires the weld overlay cladding on performance qualification weld coupons to be three layers thick with a minimum width of 1-1/2 inches and a length of 6 inches. Contrary to this requirement, none of three coupons measured met the above thickness over the specified width.

5. CP&L Specification 248-155, paragraph 8.1.5 requires that shielding and backing gases be filtered and dried as necessary to provide a maximum dewpoint of -45 degrees F at the weld. Contrary to this requirement, GE had made no provisions either procedurally or through actual use of equipment to take such measurements while testing was in progress to assure that this could be performed during production or field conditions.

6. Procedure GE-CP&L-25.0, Revision 0, Visual Inspection, did not contain specific personnel qualification requirements, or appropriate acceptance criteria applicable to ASME, Section III.

This is a Severity Level IV violation.

Admission or Denial of the Violation

CP&L admits that certain procedures identified by the inspector were inadequate in terms of the requirements for inclusion of items to assure quality.

Reason for the Violation

Item 1

Page 21 of IER 89-35 identifies 6 areas of potential procedural deficiencies (a through f) for CPL-27.0. These items are addressed as follows:

a. Paragraph 6.2 of CPL 27.0, "Required Information," specifies the mandatory use of GE travelers and Joint Process Control Sheets. These documents provide the sizes, thickness and configurations of all weld preps and weldments. Individual techniques are demonstrated to the ANI on all thicknesses and ranges to be inspected on this project as required in the last sentence of paragraph T-221.2 of ASME V, Article 2.

   Paragraph 10.0 of CPL 27.0 also specifies special conditions for materials below 3/4". Since this project involves several sizes of pipe weldments, weld preps and root/hot pass shots and all information is detailed as referenced in the travelers, and in any case satisfactory demonstration of image quality indicators (penetrameters) is considered a must. Item a is considered to be met by existing controls.

b. The isotope to be used on this project is IR-192. These sources are certified from the manufacturer for actual source size and must be able to comply with the code geometric unsharpness (ug) requirements which will also be demonstrated as required. This is specified in paragraphs 5.1 and 6.8 of the RT procedure and this is also in compliance with paragraph T-261,1 of Article 2.

c. This item is addressed extensively in paragraph 6.8 of the RT procedure in that no source to film distance shall be such that it violates the geometric unsharpness requirements of paragraph 6.8.2. In no case will a numbered minimum standard minimum distance (SFD) be used if it violates any code or GE quality requirements. It is our opinion that this satisfies code and is the most practical way of performing radiography in field situations.

d. The isotope to be used on this project is IR-192. These sources are certified from the manufacturer for actual source size and must be able to comply with the code geometric unsharpness (ug) requirements which will also be demonstrated as required. This is specified in paragraphs 5.1 and 6.8 of the RT procedure and this is also in compliance with paragraph T-261,1 of Article 2.

e. Paragraph 5.3 of the procedure meets code requirements.

f. Paragraph 5.4 of CPL-27.0 specifies the screens (Pb) to be used. No code, NRC Regulatory requirement or other specification addresses specifying thickness of the screens. As an enhancement to the procedure, screen size has been added to paragraph 5.4 of the procedure.

The above items a, b, d, e, and f have been addressed by enhancing the procedure in Revision 1, dated 10/23/89. Item c is felt to be adequate as stated in the original revision.

The acceptance standards of the original procedure did not directly address internal root weld conditions as described in ASME III NB 5320 (c) and was corrected by adding to paragraph 8.1.3 of the RT procedure as follows:

"Internal root conditions are acceptable when the density change as indicated in the radiograph is not abrupt;..."

This is the same wording as that which is found in the General Welding Procedure 86-5.0W.

CPL-27.0 was approved for conditional release only. The procedure was not being used for field work, but only for initiating welder qualifications. The ANII code inspector had not been requested to review the procedure at this point. His review would be against the film from the welder qualifications, which were still in progress. The code inspector approval was subsequently requested and received following completion of the film from welder qualifications necessary for the review process.

Since no radiography is performed without film interpreters being indoctrinated on related procedures, we feel that this issue was covered in such a manner that no unacceptable radiographs would be submitted to CP&L by the contractor performing the radiography. None of these individual concerns of Item 1 are considered to involve potential code violations. Procedural revisions were made as enhancements to the original procedure.

Item 2

Page 17 of IER 89-35 identifies two procedures, F-TCI Rev. 0 and WT-Q, Rev. 0 as referencing incorrect/incomplete ASME codes. These were typographical errors which in no way could have resulted in the use of incorrect codes for the performance of the work. The procedures have been revised to show the applicable codes.

Item 3

Page 17 of IER 89-35 notes that WPS-8.3.11W, Revision 1, incorrectly required welder performance qualification coupons to be liquid penetrant tested instead of radiography as required by the controlling CP&L specification. WPS-8.8.6W, Machine welding procedure, contained the proper requirements, and is now referenced by WPS-8.3.11W for welder performance qualification test assembly requirements. This item, although stated incorrectly in the procedure, would not have resulted in the use of improper acceptance tests for the test assemblies.

Item 4

This item is discussed in detail on page 18 of IER 89-35. The Joint Process Control Sheet (JPCS) being used for the weld overlay cladding on test coupons incorrectly showed the orientation of the overlays to require 1-1/2" width at the base of the weld and not at the top of the weld. The JPCS has been revised, the coupons for the individuals tested to that date discarded, and the individuals retested based on the new JPCS.

Item 5

This item states that GE had made no provisions either procedurally or through use of equipment to take measurements for maximum dewpoint at the weld. Revision 2 of 86-5.0W was the first revision issued for use, dated 10/13/89. This procedure in Step 6.2.1.3 has the requirement for maintaining maximum allowable dewpoint to be -45 degrees F. In addition, GE maintains a logbook for documenting their dewpoint of the gas mixture and the argon backing gas. The dewpoint determinations are logged at least once per shift. A note is on the logbook emphasizing the procedural requirement of not exceeding -45 degrees F for either the shield gas or backing gas. This meets the specification requirements. If a problem would be encountered in maintaining dewpoint, then procedural controls would be placed, as necessary, to ensure that dewpoint is maintained at -45 degrees F.

Item 6

As noted on pages 21-22 of IER 89-35, CP&L-25.0:

a. did not contain specific personnel qualification requirements. The reference to qualifications to ASME section III, V and XI was thought to be too general. The procedure, although correct, was enhanced to give more specific guidance on qualification.

b. did not contain qualification of approved anti-splatter compounds which may be applied to the weld edge. GE had inserted this additional requirement of approved anti-splatter compounds as pre-test cleaning requirements based upon the recognition that some components may be inspected when coatings, covering and insulation are still present near areas of interest or may be applied to prevent contamination of adjacent areas, and that any material applied must be approved for chemical content. Since this situation is not expected on the BSEP project, the use of antispatter compounds has been deleted from the procedure.

c. contained the statement that when visual examination is the only specified examination the final weld shall meet the subsequently noted acceptance criteria. The inspector's concern was that all final welds on the RPRP work at BSEP will receive other exams in addition to visual exams. This procedure addresses specific welding parameters and allowances in paragraph 6.6. It is derived from NB 4424 of ASME Section II, and NB 4426 of ASME Section III. Although not incorrect, the enhancement was made by revising paragraph 7.2 to read that "Thickness of weld reinforcement shall comply with requirements of General Welding Procedure 86-5.OW."

It is believed that there were no code violations built into this procedure, and that it was in compliance with the reference documents in paragraph 2.0 of the procedure. The revisions made to the procedure were merely clarifying enhancements to a technically correct procedure.

A review of the above items indicates that the technical content of the procedures for items 1, 5, and 6 was adequate, and that the concerns of the inspector were procedural enhancements. Item 2 was an example of typographical errors, which did not affect the performance of the procedure. Item 3, although incorrectly stated in that procedure, was correctly stated in another controlling weld procedure, and would not have resulted in any technical concerns.

Item 4, weld test coupons, is felt to be the only technical issue resulting from this violation. Although this procedure was deficient in terms of the weld overlay orientation, it is not considered to have a potential negative safety impact.

The procedure concerns identified by the inspector are not indicative of an overall deficiency in the acceptance program for vendor generated procedures. Technical reviews of the items were performed by qualified individuals, as necessary, to ensure their adequacy.

Corrective Actions Taken to Date

Procedure revisions have been completed as noted in each individual item response, where deemed necessary.

Corrective Actions to be Taken to Prevent Recurrence

No further corrective actions are to be taken on this issue. As noted above, this is not indicative of a programmatic problem involving the technical reviews of procedures. CP&L feels it has been in compliance following the completion of the referenced procedure revisions.