



Progress Energy

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U. S. Nuclear Regulatory Commission
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Subject: 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 Request for Additional Information Regarding Relief Request
ISI-03 for the Fourth 10-Year Inservice Inspection Interval (NRC TAC
Nos. MD8116 and MD8117)

Reference: Letter from Randy C. Ivey (CP&L), Relief Requests Associated With the
Fourth 10-Year Inservice Inspection Interval, dated February 6, 2008,
ADAMS Accession Number ML080450249

Ladies and Gentlemen:

By letter dated February 6, 2008, Carolina Power & Light Company (CP&L), now doing business as Progress Energy Carolinas, Inc., submitted relief requests associated with the fourth 10-year inservice inspection interval at the Brunswick Steam Electric Plant (BSEP), Unit Nos. 1 and 2. On March 11, 2008, via electronic mail, the NRC requested additional information regarding relief request ISI-03, which pertains to the examination and testing of Class 1, 2, and 3 snubbers. Responses to those NRC questions are enclosed.

No regulatory commitments are contained in this letter. Please refer any questions regarding this submittal to Mr. Gene Atkinson, Supervisor - Licensing/Regulatory Programs, at (910) 457-2056.

Sincerely,

Randy C. Ivey
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NRR

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Enclosure: Response to NRC Request for Additional Information Regarding Relief
Request ISI-03

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Response to NRC Request for Additional Information Regarding Relief Request ISI-03

By letter dated February 6, 2008, Carolina Power & Light Company (CP&L), now doing business as Progress Energy Carolinas, Inc., submitted relief requests associated with the fourth 10-year inservice inspection interval at the Brunswick Steam Electric Plant (BSEP), Unit Nos. 1 and 2. On March 11, 2008, via electronic mail, the NRC requested additional information regarding relief request ISI-03, which pertains to the examination and testing of Class 1, 2, and 3 snubbers. Responses to those NRC questions are provided below.

NRC Request 1:

Article IWF-5000, Subsections IWF-5200(c) and IWF-5300(c) clearly state that integral and nonintegral attachments for snubbers, including lugs, bolting, pins, and clamps, shall be examined in accordance with the requirements of Subsection IWF. Please explain whether and how these requirements will be met.

CP&L Response:

CP&L non-destructive examination procedures are written to meet the requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, 2001 Edition, 2003 Addenda, Subsection IWF-5000. Snubbers are visually inspected in accordance with procedure NDEP-0613, "VT-3 Visual Examination of Nuclear Power Plant Components." Appendix III of NDEP-0613, paragraph 3.8.11, describes the examination boundary for the snubber inspection, which includes integral and non-integral attachments for snubbers, including lugs, bolting, pins, and clamps.

NRC Request 2:

Article IWF-5000, Subsection IWF-5400, Repairs and Replacement, requires that repair or replacement of snubbers shall be in accordance with IWA-4000. Repaired or replacement snubbers shall be examined and tested in accordance with the applicable requirements of IWF-5200 prior to return to service. Please explain how Brunswick Steam Electric Plant (BSEP), Units 1 and 2 Technical Requirement Manuals (TRM) meets these requirements of IWF-5000.

CP&L Response:

The Brunswick TRM does not specifically address details governing the repair and replacement of snubbers. The requirements of IWF-5400 are met with the use of plant procedure 0ENP-16.15, "Administrative Procedure for Component Support and Snubber Program." The purpose of this procedure is to describe the administrative control of the examination and testing

of snubbers. Snubbers that are considered unsatisfactory for functional testing must be repaired or replaced, as required in plant procedure 0ENP-16.15. All repaired or replaced snubbers are visually inspected, once installed, prior to return to service. 0ENP-16.15, Section 5.2.3.3, meets the IWF-5000 requirements for repaired or replaced snubbers as stated below.

Snubbers which fail the functional test acceptance criteria, shall be repaired or replaced. In addition, an Action Request shall be initiated for each failure which will drive an evaluation to determine the cause of failure and corrective actions to be taken. The results of this evaluation shall be used, if applicable, in the selection of additional snubbers to be tested that may be subject to the same type of failure. Replacement snubbers and repaired snubbers (where the repair may have affected the functional test result) shall be functionally tested prior to installation.

Visual examinations of snubber supports must satisfy 0ENP-16.15, Section 5.1.4.3, as stated below.

Visual examinations that detect surface flaws exceeding ASME Code Case N-491-3400 criteria shall be supplemented by surface or volumetric examinations to determine flaw characteristics.

Pre-service (i.e., as installed) visual examinations are performed in accordance with procedure NDEP-0613.

In addition, repair/replacement activities are governed by 0PLP-08, "Repair/Replacement Program," which states in Section 17.6.1 that "For repair/replacement activities on a snubber, a functional test and preservice examination **SHALL** be performed prior to returning the snubber to service."

NRC Request 3:

The relief request and the BSEP TRM Section 3.21 do not address the visual examination VT-3 requirements of Subsections IWF-5200(a) and IWF-5300(a). IWF-5200(a) and IWF-5300(a) require that pre-service and inservice examination of snubbers shall be performed using the VT-3 visual examination method described in IWA-2213. Please explain how the BSEP TRM visual examination of snubbers meets this requirement.

CP&L Response:

BSEP TRM Test Requirement (TR) 3.21.7 requires the visual inspection of snubbers. Plant procedure 0ENP-16.15, "Administrative Procedure for Component Support and Snubber Program," describes the requirements for visual inspection of snubbers. Paragraph 5.1.3 details the requirements for visual inspection, and states:

Component supports are visually examined in accordance with the requirements of ASME Section XI VT-3 methods. The examinations are performed in accordance with NDEP-0613.

NDEP-0613, "VT-3 Visual Examination of Nuclear Power Plant Components," includes all of the requirements of IWA-2213 for both preservice and inservice examinations. The purpose of NDEP-0613 states the following:

This procedure defines the general methods and requirements for VT-3 visual examination as specified in Section XI of the ASME B&PV Code. The examination is performed to determine the general mechanical and structural condition of components and their supports; such as the verification of clearances, settings, physical displacements, loose or missing parts, debris, corrosion, wear, erosion, or the loss of integrity at bolted or welded connections. The VT-3 shall include examinations for conditions that could affect operability or functional adequacy of snubbers, and constant load and spring type supports. For component supports and component interiors, the visual examination may be performed remotely with or without optical aids to verify the structural integrity of the component.

NRC Request 4:

Please verify that functional test in accordance with TRM Figure 3.21-1 as specified in TRM TR 3.21.3(2), is equivalent to functional test of "37 testing sample plan" as specified in Section 3.2.3 of the ASME OM Part 4 (OM-4).

CP&L Response:

The test sampling plans are equivalent in the selection process. The difference between the TRM Figure 3.21-1 and the figure in OM-4 is the line for sample expansion. The TRM Figure 3.21-1 test plan is an older version that was utilized by the Technical Specifications prior to the development of the OM Code. While the two plans are similar when it comes to additional testing sampling numbers, the TRM figure still contains a "Reject" line which is based on the number of rejected snubbers over the testing period. The OM Code version simplifies the sample expansion process by stating an approximate 50% scope increase per test failure.

NRC Request 5:

Section TR 3.21.3.a of BSEP TRM uses functional testing sample plans: (1) 10% sample plan; (2) sample plan based on Figure 3.21-1; and (3) 55 sample plan. Please explain whether and how in case of Figure 3.21-1 (also See RAI 4 above) and 55 sample plan, the requirement of additional sampling of at least one-half the size of the initial sample lot as required by OM-4, Paragraph 3.2.3.2(b) will be met.

CP&L Response:

TR 3.21.3.a.3 requires an additional sample of at least one-half the size of the initial sample, which is the same as the OM Code for the 55 Sample Plan.

TR 3.21.3.a.2 describes the requirements for the "37 Plan." Figure 3.21-1 requires an initial sample of 37 snubbers to be selected for functional testing. TR 3.21.3.a.2 requires the test failures to be plotted on Figure 3.21-1 to determine the additional testing sample, which states:

Subsequent to the first functional test failure, at the end of each day's testing, the new values of "N" and "C" (previous day's total plus current day's increments) shall be plotted on Figure 3.21-1. If at any time the point plotted falls in the "Reject" region, all snubbers of that type shall be functionally tested. If at any time the point plotted falls in the "Accept" region, testing of snubbers of that type may be terminated. When the point plotted lies in the "Continue Testing" region, additional snubbers of that type shall be tested until the point falls in the "Accept" region or the "Reject" region, or all the snubbers of that type have been tested.

For example, assuming after testing 30 snubbers that three snubbers failed, the plot on Figure 3.21-1 would require an additional 53 snubbers to be tested in addition to the original 37 for a total of 90 tests in order to reach the "accept" region and end the test campaign. The OM Code 37 test plan would result in the testing of an additional 56 snubbers. Where the sample expansion populations are close, the penalty for snubber test failures under TRM Figure 3.21-1 is much greater than the OM Code plan. An example would be if the three failures occurred prior to 19 successful tests, in which case 100% of the snubber population would have to be tested (i.e., which would be more than 500 snubbers at each BSEP unit).

NRC Request 6:

The relief request and the TRM do not address requirements of OM-4, Sections 3.2.5.1, and 3.2.5.2 related to the 10%, 37 or 55 Testing Sample Plans Corrective Action. OM-4, Sections 3.2.5.1 and 3.2.5.2 states that unacceptable snubbers shall be repaired, modified, or replaced. Please explain how the BSEP TRM meets this requirement.

CP&L Response:

Technical Requirements Manual Specification (TRMS) 3.21 requires that all hydraulic and mechanical snubbers shall be OPERABLE. The definition for OPERABLE contained in Section 1.0 of the TRM states:

A system, subsystem, division, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical

power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, division, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).

Snubbers that are considered unsatisfactory for functional testing would not meet the definition for OPERABLE because they would not be considered capable of performing their specified safety function. Snubbers that are considered unsatisfactory for functional testing must be repaired or replaced, as required in plant procedure 0ENP-16.15, "Administrative Procedure for Component Support and Snubber Program." 0ENP-16.15, paragraph 5.2.3.3, which describes the requirements for testing following repair or replacement, states:

Snubbers which fail the functional test acceptance criteria, shall be repaired or replaced. In addition, an Action Request shall be initiated for each failure which will drive an evaluation to determine the cause of failure and corrective actions to be taken. The results of this evaluation shall be used, if applicable, in the selection of additional snubbers to be tested that may be subject to the same type of failure. Replacement snubbers and repaired snubbers (where the repair may have affected the functional test result) shall be functionally tested prior to installation.

NRC Request 7:

The relief request and the BSEP TRM do not address the requirements of OM Part 4, Section 3.2.4, specifically Section 3.2.4.2, "Test Failure Mode Groups," related to functional testing of snubbers. Please explain how the BSEP TRM meets this requirement.

CP&L Response:

Failure Mode Grouping is an optional method to determine the extent of condition of the failure and the population or grouping for sample expansion. The BSEP TRM does not limit the sample expansion population based on a particular failure mode when selecting additional snubbers for functional testing. If BSEP were to adopt the latest NRC approved edition of the ISTD Code, in accordance with 10 CFR 50.55a, 2001 Edition through 2003 Addenda, then Failure Mode Grouping may be used to limit the sample expansion population based on specific mode of degradation.

NRC Request 8:

TRM, Page 3.21-11, Note (f) of Table 3.21-1 states that "The provisions of TR 3.0.2 are applicable for all inspection intervals up to and including 48 months." Please explain and provide the details of TR 3.0.2.

CP&L Response:

On May 8, 1991, the NRC issued License Amendments 152 and 182 for Units 1 and 2, respectively, approving the incorporation of guidance provided in NRC Generic Letter 90-09 for snubber examinations into TS 3.7.5. In the NRC Safety Evaluation for License Amendments 152 and 182, the NRC stated the following:

Depending on the number of unacceptable snubbers found during the visual examination, this interval may be extended to as long as twice the fuel cycle or reduced to as short as two-thirds of the fuel cycle. The examination interval may vary by +25 percent to coincide with the actual outage.

The Technical Specification changes approved by License Amendments 152 and 182 included a Note 6 to Table 4.7-1, "Snubber Visual Inspection Interval," which invoked the provisions of Specification (TS) 4.0.2 for extending snubber examination intervals. Upon conversion to the Improved Technical Specifications (ITS), which was approved by License Amendments 203 and 233 for Units 1 and 2, respectively, the current TRM requirements pertaining to snubbers that were contained in Technical Specification (TS) 3.7.5 were relocated to TRMS 3.21. These requirements were relocated without change, other than the renumbering of the requirements to conform to the format of the TRM. The previous TS 4.0.2 corresponds to the requirements currently contained in TRM Test Requirement (TR) 3.0.2, and previous TS Note 6 corresponds to the current Note (f) of TRM Table 3.21-1.

The statement for the provisions of TR 3.0.2 relates to the interval frequency for visual inspection, as defined in Table 3.21-1. The inspection intervals are based on the number of visual inspection failures identified during the previous inspection campaign, as described in Note (a) of Table 3.21-1. The details of inspection frequency are described in Notes (c), (d), and (e). The current inspection surveillance frequency is 48 months. TR 3.0.2 allows the surveillance time to be increased up to 25% to coincide with refueling outages.

TR 3.0.2 establishes the requirements for meeting the specified Frequency for TRs and permits a 25% extension of the interval specified in the Frequency. This extension facilitates surveillance scheduling and considers plant operating conditions that may not be suitable for conducting the surveillance such as transient conditions or other ongoing surveillance or maintenance activities.

NRC Request 9:

TRM TR 3.21.2, Note states that "the first inspection interval determined using Table 3.21-1 criteria shall be based on previous inspection intervals established by the requirements in effect before TS Amendment 152 was issued." Please elaborate and clarify the meaning of this Note.

CP&L Response:

The note is no longer applicable since the first inspection interval has since passed. For clarification, the inspection interval is determined based on the results of the previous examination interval. The note in TRM 3.21.2 was explaining that even though Table 3.21-1 was not part of the TRM prior to Amendments 152 and 183 for Units 1 and 2, respectively, BSEP used the guidance (i.e., results of previous inspection interval results) to establish the next inspection interval (i.e., frequency).