

November 20, 2008

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Subject: Duke Energy Carolinas, LLC (Duke)
Catawba Nuclear Station, Units 1 and 2
Docket Numbers 50-413 and 50-414
Request for Relief Number 06-CN-003
Use of Polyethylene Material in Nuclear Safety
Related Piping Applications
(TAC Numbers MD3729 and MD3730)

- References:
1. Letters from Duke to NRC, same subject, dated October 26, 2006, June 21, 2007, March 13, 2008, May 29, 2008, and October 21, 2008
 2. Letters from NRC to Duke, same subject, dated September 8, 2008 and September 12, 2008

The Reference 1 letters comprise Duke's original submittal and responses to NRC Requests for Additional Information (RAIs) to support a proposed alternative of utilizing polyethylene material in lieu of steel material in piping associated with the emergency diesel generator jacket water coolers. The September 12, 2008 Reference 2 letter documented NRC's approval of this Request for Relief for the jacket water cooler supply lines for emergency diesel generators 1A and 2A. The September 8, 2008 Reference 2 letter provided two additional RAI questions dealing with the remaining two supply lines and all four return lines. The purpose of this letter is to formally respond to the second question of these RAIs. Duke responded to the first question via the October 21, 2008 Reference 1 letter.

The attachment to this letter contains Duke's RAI response. The format of the response is to restate the RAI question, followed by our response.

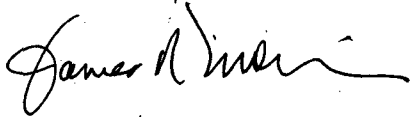
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In addition, note that the October 21, 2008 Reference 1 letter documented several issues associated with the September 12, 2008 Reference 2 Safety Evaluation. Conversation with the NRC Project Manager indicated that these issues will be resolved when the NRC provides the approval for the remaining lines.

There are no NRC commitments contained in this letter or its attachment.

If you have any questions concerning this information, please call L.J. Rudy at (803) 701-3084.

Very truly yours,

A handwritten signature in cursive script, appearing to read "James R. Morris".

James R. Morris

LJR/s

Attachment

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xc (with attachment):

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bxc (with attachment):

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Document Control File 801.01
RGC File
NCMPA-1
NCEMC
PMPA
ELL-EC050

Attachment

Response to RAIs

OFFICE OF NUCLEAR REACTOR REGULATION
MECHANICAL AND CIVIL ENGINEERING BRANCH
REQUEST FOR ADDITIONAL INFORMATION
REGARDING RELIEF 06-CN-003, USE OF POLYETHYLENE MATERIAL IN
NUCLEAR SAFETY-RELATED PIPING APPLICATIONS
CATAWBA NUCLEAR STATION UNITS 1 AND 2
TAC NOS. MD3729 AND MD3730

By letter dated October 26, 2006, as supplemented by letters dated June 21, 2007, March 13, 2008, and May 29, 2008, Duke Energy Carolinas, LLC, the licensee, submitted a request for relief RR-06-CN-003 from the American Society of Mechanical Engineers (ASME), *Boiler and Pressure Vessel Code* (Code), Section XI, 1998 Edition through 2000 Addenda requirement pertaining to using high-density polyethylene (HDPE) pipe in lieu of the ASME Code requirements for Class 3 carbon steel piping for the ASME Code Class 3, 12-inch nominal diameter supply and return buried piping to and from the diesel generator jacket water coolers for the third 10-year inservice inspection (ISI) interval at Catawba Nuclear Station, Units 1 and 2 (Catawba 1 and 2). There are a total of 8 lines for which the licensee is seeking approval for the use of HDPE pipe, supply and return lines 1A, 1B, 2A and 2B. The U.S. Nuclear Regulatory Commission (NRC) staff has identified additional information needed to complete its review of this relief request. The NRC staff is seeking information concerning supply lines 1B, 2B and return lines 1A, 1B, 2A, and 2B.

The NRC staff has concluded that the licensee has provided sufficient information for the NRC staff to accept the use of HDPE pipe for the 1A and 2A supply lines to the diesel generator jacket water coolers for the third 10-year ISI interval. The NRC will document this in the near future.

For the NRC staff to make a determination regarding the acceptability of the entire proposed alternative, the licensee is requested to respond to the following items.

1. In the relief request 06-CN-003, dated October 26, 2006, the licensee stated that the request for relief is to support a proposed alternative of utilizing polyethylene material in lieu of steel material in piping associated with the emergency diesel generator jacket water coolers and other nuclear safety related piping applications. The licensee is requested to clarify whether the relief request is limited to a total of eight (8) lines only, namely four (4) emergency diesel jacket water intake or supply lines

(1A, 1B, 2A, 2B), and four (4) emergency diesel jacket water discharge lines (1A, 1B, 2A, 2B), and that no other nuclear safety related piping applications are included in the relief request.

Duke Response:

The response to this question was provided via our October 21, 2008 letter.

2. In Appendix A of the October 26, 2006 letter (Analysis for Catawba Piping), of the relief request, the licensee included the detailed analytical calculations for 12 inch supply lines for Diesel Buildings 1A and 2A along with simple isometrics of the piping model. The licensee is requested to supplement its request to confirm that the analysis for supply lines 1B, & 2B, and discharge lines 1A, 1B, 2A, and 2B will employ the same methodology, assumptions, parameters, and allowable limits reviewed and approved by the staff for intake lines 1A and 2A. In addition to confirming the analysis methodology, the licensee is requested to provide (a) input parameters (pipe size, wall thickness, design pressure, and design temperature), (b) simple isometrics of the piping model, and (c) a summary of results based on as-designed analysis for the remaining six (6) emergency diesel jacket water lines, namely two (2) intake or supply lines (1B, & 2B), and four (4) discharge lines (1A, 1B, 2A, and 2B).

Duke Response:

The enclosed CD-ROM contains the completed as-designed calculations for all eight supply and return lines for Diesel Generators 1A, 1B, 2A, and 2B. Note that although sample calculations have been previously provided to the NRC for the supply lines for Diesel Generators 1A and 2A, the as-designed calculations for these two lines have since been finalized and are included as well. Also, note that these calculations do not represent actual as-built conditions, as the modifications have not yet been installed. All eight calculations employ the same methodology, assumptions, parameters, and allowable limits previously reviewed and approved by the staff and demonstrate the acceptability of utilizing polyethylene material in these applications. There is no proprietary information contained in any of these calculations.