

March 24, 2003

Mr. G. R. Peterson  
Site Vice President  
Catawba Nuclear Station  
Duke Energy Corporation  
4800 Concord Road  
York, South Carolina 29745-9635

SUBJECT: CATAWBA NUCLEAR STATION, UNITS 1 AND 2 RE: STEAM GENERATOR  
PROGRAM GUIDELINES (TAC NOS. MB7842 AND MB7843)

Dear Mr. Peterson:

By letter dated February 25, 2003, you submitted an application for amendment of the Technical Specifications for the Catawba Nuclear Station, Units 1 and 2. The application addresses inspection requirements for steam generators and was submitted to demonstrate the acceptability of the Nuclear Energy Institute's (NEI's) steam generator Generic License Change package that was developed through NEI 97-06, "Steam Generator Program Guidelines." On March 20, 2003, we held a discussion with Duke Power Company (Duke) representatives to discuss the application. We have also scheduled a meeting with Duke and NEI representatives to be held on March 27, 2003, to discuss the application. In response to your request, we are enclosing a list of the topics that we discussed in our March 20, 2003, telephone conference to support preparation for the meeting on March 27, 2003.

Please contact me at (301) 415-1493 if you have any other questions on these issues.

Sincerely,

*/RA/*

Robert E. Martin, Senior Project Manager, Section 1  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket Nos. 50-413 and 50-414

Enclosure: Telephone Conference Notes

cc w/encl: See next page

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Potential Issues Discussed in the March 20, 2003, Telephone Conference

Relating to Catawba Submittal (Reference 1)

Regarding Steam Generator Technical Specifications

A. Previously Identified Technical Specification (TS) Issues:<sup>1</sup>

1. Maximum Inspection Interval:

The Catawba submittal lacks detail concerning:

- The general goal - i.e., inspection intervals shall be established and implemented to ensure steam generator (SG) tube integrity is maintained.
- Frequency of 100-percent sample inspection and 50-percent sample inspection as functions of SG age (Alloy 600 Thermally Treated (TT) and 690 TT only).
- A maximum two-cycle and three-cycle limitation for Alloy 600 TT and Alloy 690 tube material, respectively.
- Degradation activity thresholds, including the threshold for damage stemming from loose parts, beyond which the frequency of inspection should be increased to once per fuel cycle or 24 effective full-power months, whichever is less (Alloy 600 TT and 690 TT only). The Catawba proposal is limited to degradation thresholds for corrosion cracking only and does not include other degradation mechanisms.

2. Structural Performance Criteria:

- As described in the Catawba submittal, the factors of 3.0 and 1.4 against burst would only apply for pressure loads and not for all dynamic loadings or other non-pressure applied loadings. The NRC staff is concerned that this would represent a departure from the design basis with respect to the applicability of Section III of the American Society of Mechanical Engineers (ASME) Code. This is mostly a concern for accident scenarios.
- As described in the Catawba submittal, the factor of 1.4 would not apply to the combination of accident condition loadings (i.e., MSLB + SSE or LOCA + SSE)<sup>2</sup>. The NRC staff is concerned that for many plants this may represent a departure from the design and licensing basis with respect to General Design Criterion 2, "Design for Protection Against Natural Phenomena" and Regulatory Guide 1.121, "Bases for Plugging Degraded PWR Steam Generator Tubes."<sup>3</sup>

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<sup>1</sup> Acceptable approaches to resolving these issues were identified in the NRC staff's letter dated September 9, 2002 (Reference 2).

<sup>2</sup> Main Steam Line Break + Safe Shutdown Earthquake or Loss of Coolant Accident + Safe Shutdown Earthquake loadings.

<sup>3</sup> An industry white paper on the structural criterion is currently under NRC staff review.

Enclosure

3. Repair Methods:

- As described in the Catawba submittal, the TS would permit repairs (e.g., sleeving) without the requirement for submittal of a TS amendment application for NRC review and approval. The submittal defines acceptable repair methods as those designs specifically listed in ASME Code, Section XI, IWA-4720, if endorsed by NRC.
- The NRC staff has not reviewed the requirements in IWA-4720 as "stand alone" requirements since SG tube repair is addressed in the TS.
- The NRC staff is concerned that Code requirements do not ensure that accident leakage through mechanical joints will be consistent with licensing basis assumptions, that the repairs will be inspectable, and that the repairs will not lead to enhanced severe accident risk.

B. Previous Identified Priority Guideline Issues:

Enclosure 4 to the NRC staff's September 9, 2002, letter discussed in detail the priority guideline issues needing resolution concurrent with the submittal of the final Generic License Change Package. These issues included:

- Clarification of degradation assessment objectives.
- Clarification of guidelines emphasizing the need for updating degradation assessments based on recent experience at other similar plants.
- Clarification of guideline discussion concerning interpretation of definition of burst (clarification of gross versus local structural failure of tube wall).

C. Emergent Issue:

Do the proposed guidelines contain the appropriate level of specificity concerning surveillance? This issue is raised as a result of "tubesheet inspection issues" that arose at several plants.

References:

1. Letter, G. R. Peterson, Duke Power Company, submitting proposed Technical Specification Amendments for Catawba Nuclear Station, Unit Nos. 1 and 2, dated February 25, 2003, (ADAMS ML030690029).
2. Letter, L. Lund, NRC, to J. Riley, NEI, "NEI Steam Generator Generic License Change Package - Technical Specifications - Revision 6 of Steam Generator Examination Guidelines," dated September 9, 2002.

Catawba Nuclear Station

cc:

Mr. Gary Gilbert  
Regulatory Compliance Manager  
Duke Energy Corporation  
4800 Concord Road  
York, South Carolina 29745

Ms. Lisa F. Vaughn  
Legal Department (ECIIX)  
Duke Energy Corporation  
422 South Church Street  
Charlotte, North Carolina 28201-1006

Anne Cottingham, Esquire  
Winston and Strawn  
1400 L Street, NW  
Washington, DC 20005

North Carolina Municipal Power  
Agency Number 1  
1427 Meadowwood Boulevard  
P. O. Box 29513  
Raleigh, North Carolina 27626

County Manager of York County  
York County Courthouse  
York, South Carolina 29745

Piedmont Municipal Power Agency  
121 Village Drive  
Greer, South Carolina 29651

Ms. Karen E. Long  
Assistant Attorney General  
North Carolina Department of Justice  
P. O. Box 629  
Raleigh, North Carolina 27602

NCEM REP Program Manager  
4713 Mail Service Center  
Raleigh, NC 27699-4713

North Carolina Electric Membership  
Corporation  
P. O. Box 27306  
Raleigh, North Carolina 27611

Senior Resident Inspector  
U.S. Nuclear Regulatory Commission  
4830 Concord Road  
York, South Carolina 29745

Virgil R. Autry, Director  
Division of Radioactive Waste Management  
Bureau of Land and Waste Management  
Department of Health and Environmental  
Control  
2600 Bull Street  
Columbia, South Carolina 29201-1708

Mr. C. Jeffrey Thomas  
Manager - Nuclear Regulatory  
Licensing  
Duke Energy Corporation  
526 South Church Street  
Charlotte, North Carolina 28201-1006

Saluda River Electric  
P. O. Box 929  
Laurens, South Carolina 29360

Mr. Peter R. Harden, IV  
VP-Customer Relations and Sales  
Westinghouse Electric Company  
6000 Fairview Road  
12th Floor  
Charlotte, North Carolina 28210