Duke Power
A Duke Energy Company

GARY R. PETERSON
Vice President
Catawba Nuclear Station

Duke Power
CN01VP / 4800 Concord Rd.
York, SC 29745

803 831 4251
803 831 3221 fax
grpeters@duke-energy.com

June 11, 2003

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

Subject: Duke Energy Corporation
Catawba Nuclear Station, Units 1 and 2
Docket Number 50-413 and 50-414
Response to Request for Additional Information

Reference: Catawba Proposed Amendment to the Facility Operating Licenses Concerning Steam Generator Tube Rupture Licensing Basis dated May 9, 2002

By letter dated May 9, 2002, Duke Energy Corporation submitted a license amendment request for the Catawba Steam Generator Tube Rupture Licensing Basis. During telecons on May 6, 2003 and June 4, 2003, the staff requested additional information associated with the submittal. The responses to the staff's questions are provided in the enclosed Attachment 1.

This correspondence does not contain any commitments.

The previous conclusions of the No Significant Hazards Consideration as stated in the May 9, 2002 submittal are not affected by this response.

Inquiries on this matter should be directed to G.K. Strickland at (803) 831-3585.

Very truly yours,

Gary R. Peterson

GKS/s
Attachment

A001

Gary R. Peterson affirms that he the person who subscribed his name to the foregoing statement, and that all statements and matters set forth herein are true and correct to the best of his knowledge.

Gary R. Peterson, Site Vice President

Subscribed and sworn to me: 6-11-03
Date

Douglas M Black
Notary Public

My commission expires: October 24, 2004
Date

SEAL

xc (with attachment):

L.A. Reyes
U.S. Nuclear Regulatory Commission
Regional Administrator, Region II
Atlanta Federal Center
61 Forsyth St., SW, Suite 23T85
Atlanta, GA 30303

E. F. Guthrie
Catawba NRC Senior Resident
U.S. Nuclear Regulatory Commission
Catawba Nuclear Station

R. E. Martin (addressee only)
NRR Senior Project Manager
U.S. Nuclear Regulatory Commission
Mail Stop O8-H12
Washington, D.C. 20555-0001

K. R. Cotton (addressee only)
NRR Senior Project Manager
U.S. Nuclear Regulatory Commission
Mail Stop O8-H12
Washington, D.C. 20555-0001

H. Porter
SC DHEC, Division of Radioactive Waste Management
Bureau of Land and Waste Management
Department of Health and Environmental Control
2600 Bull St.
Columbia, SC 29201

Attachment 1

Responses to NRC Questions Concerning
Steam Generator Tube Rupture Licensing Basis

During telecons on May 6, 2003 and June 4, 2003, two additional questions were raised by the staff for the Steam Generator Tube Rupture Licensing Basis. These questions (paraphrased) and the responses are provided below.

Question 1:

Would the modifications considered for the panel boards EDE or EDF have any other risk benefits?

Response:

The modifications considered do not have any other risk benefits.

The current revision of the Catawba Probabilistic Risk Assessment (PRA) is designated revision 2b. This revision includes Steam Generator overfill as a failure mode for the turbine driven auxiliary feedwater pump. At this time, a human error for failure to throttle flow is the only failure mode included in the model. No hardware failures are included as these were expected to make a negligible contribution given the multiple options available for either throttling or isolating flow to the steam generators.

This base PRA model has been modified to include hardware failures that may lead to Steam Generator overfill including some special situations as identified in the May 6, 2003 conference call. Several configurations have been identified that could result in a loss of the ability to control the throttle valve coincident with a loss of power to the motor operated isolation valve following a loss of offsite power. These are:

a) DC distribution center EDF out of service at the initiation of the event
b) Both DC sources that supply EDF are disconnected from their respective batteries and fed only by the chargers at the initiation of the event
c) Common cause failure of the 2 batteries that support distribution center EDF

Item b from the list represents a configuration that could be permitted to exist by technical specifications for up to 8 hours. During the May 6 conference call it was stated that Catawba has never operated in this configuration. For this analysis this condition has been assigned a probability of occurrence of 2E-04, which represents approximately 8 hours every 5 years in the configuration. At 2E-04 it has the largest failure probability from the list of a through c.

Random failures of the air operated control valve and the motor operated isolation valve are also included in the revised fault tree.

The dominant core damage sequences are initiating events that result in a loss of offsite power followed by failure of both Diesel Generators. With a station blackout, all battery chargers are failed, and all of the safety related batteries eventually are depleted. The subsequent loss of DC power causes the control valve to fail open, the isolation valve is without power and flow to all of the Steam Generators is controlled by starting/stopping the turbine driven auxiliary feedwater pump from the Standby Shutdown Facility. The only other sequence of significance is a loss of component cooling water initiating event followed by independent failure of main feedwater and the operator error to fail to throttle turbine driven auxiliary feedwater flow.

Random failures of the DC buses, control valves and isolation valves do not appear in any cut sets above the truncation limit (1E-09). None of the plant conditions identified in items a through c above appears in any cut sets.

Question 2:

Will the failure of panel board EDE or EDF result in a unit trip or transient?

Response:

Below are the major effects of the failure of EDE or EDF. The effects of the loss of EDF are shown in parentheses.

1. Control power will be lost to the 4KV Switchgear ETA(ETB)
2. Control power will be lost to the 600V essential load centers ELXA and ELXC (ELXB and ELXD)
3. Control power will be lost to the A(B) train Diesel Generator Load Sequencers
4. Control power Train A(B) will be lost to the Turbine Driven Auxiliary Feedwater Pump. The pump will start as a result of SA2 or SA5 opening.
5. Control of the Pressurizer Heaters A(B) from the auxiliary shutdown panel will be lost.
6. Control of the Chemical Volume and Control System A(B) train from the auxiliary shutdown panel will be lost.

A direct plant trip will not occur as a result of the failure of EDE or EDF. The start of the Turbine Driven Auxiliary Feedwater Pump will result in a slight power increase due to the colder feedwater temperature but should not cause a significant plant transient.