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DUKE POWER

September 13, 1995

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

Subject: Catawba Nuclear Station, Units 1 and 2
Docket Nos. 50-413 and 50-414
Proposed Technical Specifications (TS) Changes
(TS Table 2.2-1)
Change to Notation for Overpower Delta Temperature Setpoint

Gentlemen:

Pursuant to 10CFR50.4 and 10CFR50.90, attached are license amendment requests to Appendix A, Technical Specifications, of Facility Operating Licenses NPF-35 and NPF-52 for Catawba Nuclear Station Units 1 and 2, respectively. The proposed amendments modify the notation for the overpower delta temperature (OPDT) reactor trip heatup setpoint penalty coefficient as delineated in Note 3 on Page 2-10, in order to make the nomenclature consistent with NUREG-0452, Revision 4, "Standard Technical Specifications for Westinghouse Pressurized Water Reactors". This change is necessary in order to allow implementation of the modification to reduce the reactor coolant (NC) system hot leg temperature as planned during the Unit 2 end-of-cycle 7 refueling outage.

Attachment 1 contains a background and description of the enclosed amendment request. Attachment 2 contains the required justification and safety evaluation. Pursuant to 10CFR50.91, Attachment 3 provides the analysis performed in accordance with the standards contained in 10CFR50.92 which concludes that the requested amendments do not involve a significant hazards consideration. Attachment 3 also contains an environmental impact analysis for the requested amendments. Attachment 4 contains the marked-up Technical Specification amendment pages for Catawba. Duke Power Company is forwarding a copy of this amendment request package to the appropriate South Carolina state official.

Duke Power Company is requesting NRC approval of this amendment request package by November 1, 1995 in order to allow the hot leg temperature reduction modification work described above to be implemented prior to the conclusion of the end-of-cycle 7 refueling outage. In addition,

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Duke Power Company is requesting a thirty-day period following NRC approval of the proposed amendments to allow for implementation.

Should there be any questions concerning this amendment request or should additional information be required, please call L.J. Rudy at (803) 831-3084.

Very truly yours,

W.R. McCollum

LJR/s

Attachments

xc (W/Attachments):
S.D. Ebneter, Regional Administrator
Region II

R.J. Freudenberger, Senior Resident Inspector

R.E. Martin, Senior Project Manager
ONRR

Max Batavia, Chief
Bureau of Radiological Health, SC

W.R. McCollum, being duly sworn, states that he is Vice President of Duke Power Company; that he is authorized on the part of said Company to sign and file with the Nuclear Regulatory Commission this revision to the Catawba Nuclear Station License Nos. NPF-35 and NPF-52 and that all statements and matters set forth therein are true and correct to the best of his knowledge.

W.R. McCollum, Vice President

Subscribed and sworn to before me this 13th day of September, 1995.

Notary Public

My commission expires:

MY COMMISSION EXPIRES
JANUARY 23, 2005

bxc (W/Attachments):
A.V. Carr
Z.L. Taylor
L.J. Rudy
M.J. Brady
S.W. Brown
A.S. Bhatnagar
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NCMPA-1
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Document Control File CN-801.01
Group File CN-801.01
ELL-EC05O

ATTACHMENT 1

BACKGROUND AND DESCRIPTION OF AMENDMENT REQUEST

Background

Industry experience has shown that steam generators utilizing Inconel 600 alloy tubing are susceptible to corrosion attack which can significantly reduce their operating life. The steam generators for Catawba Unit 2 utilize Inconel 600 tubes. Their corrosion resistance was improved by undergoing a thermal treatment process that increased the resistance of the tubes to corrosion attack; however, there is evidence that some percentage of the tubes did not receive the full benefit of the treatment process. In addition, it is not known how long the treatment process will protect the tubes.

In order to enhance the life of the steam generator tubes for Unit 2, Catawba has elected to implement a reactor coolant system hot leg temperature reduction (T-hot reduction) effort. Both industry and laboratory experience has shown that a T-hot reduction effort is effective in prolonging the life of steam generator tubes. Catawba is planning to implement Nuclear Station Modification (NSM) CN-21367, the T-hot reduction modification, during the Unit 2 end-of-cycle 7 refueling outage. This modification will result in a decrease in T-hot by approximately 3°F from its present value of 619.7°F. In addition to the decrease in T-hot, cold leg (T-cold) and average (T-avg) temperatures will also be decreased in order to maintain a constant change in enthalpy between the new T-hot and the new T-cold so that Unit 2's electrical output will not be affected by this NSM.

During the initial planning phase for this NSM, it had been determined that no changes to the TS would be required. This determination was made based on a review of the TS and discussions with other utilities who had also implemented T-hot reduction efforts. It was observed that for those utilities that had submitted TS amendments, the changes were required as a result of power uprates that were being pursued in addition to the T-hot reduction effort. (Catawba Unit 2 is not pursuing a power uprate in conjunction with its T-hot reduction effort.)

While performing the 10CFR50.59 evaluation for NSM CN-21367, it was noted that in TS Table 2.2-1, in the equation for the OPDT setpoint, the definition for K_6, the OPDT reactor trip heatup setpoint penalty coefficient, is defined as nonzero for $T > 590.8°F$ and as zero for $T \leq 590.8°F$, where T is the NC system average temperature. In the Standard TS, NUREG-0452, Revision 4, K_6 is defined such that it is nonzero for $T > T''$ and zero for $T \leq T''$, where T'' is the indicated T-avg at rated thermal power, and is numerically equal to $\leq 590.8°F$ according to the TS definition for T''. Since T'' currently equals 590.8°F for Catawba, the two forms of the definition are equivalent. However, during the implementation of NSM CN-21367, it will be necessary to change T'' from 590.8°F to 587.5°F. Although according to the definition of T'', Catawba can change the value of T'' from 590.8°F to 587.5°F without the need for a TS change (the current definition for T'' requires it to be $\leq 590.8°F$), doing so would invalidate the definition for K_6, since it would become nonzero for $T > 587.5°F$ and zero for $T \leq 587.5°F$. Although the definition for K_6 would become technically untrue, the resulting situation would actually be more conservative than the existing TS, since the OPDT setpoint penalty would be incurred earlier (i.e., at a lower temperature) than stated in the definition for K_6. Hence, it has been determined that in order to completely satisfy the definition for K_6, a change to the TS definition would be required prior to implementing NSM CN-21367.

Description of Amendment Request

In TS Table 2.2-1, on Page 2-10, the definition for K_6, the OPDT reactor trip heatup setpoint penalty coefficient, is modified to read "... as presented in the Core Operating Limits Report for $T > T''$ and $K_6 = 0$ for $T \leq T''$,". No changes to the Bases section of the TS are required in conjunction with this change.

ATTACHMENT 2

JUSTIFICATION AND SAFETY EVALUATION

Justification and Safety Evaluation

Changing the definition for K_6 as stated previously will have no impact upon the Catawba units from a safety perspective. This change is considered an editorial change which is necessary to allow the implementation of the T-hot reduction modification. The function of the K_6 term in the OPDT equation is to apply the reactor trip heatup setpoint penalty anytime T-avg is greater than T'' and to not apply the penalty when T-avg is less than or equal to T''. The proposed change is consistent with the intended application of this penalty. Had the definition for K_6 as stated in the Catawba TS been consistent with the definition as stated in NUREG-0452, Revision 4, the T-hot reduction modification could have been completely implemented without the need for a TS change. With the existing value of T'' of 590.8°F (i.e., prior to the implementation of the modification), both forms of the definition are equivalent. With the implementation of the modification, however, the definition as currently stated in Catawba's TS would become technically untrue, although the penalty would actually be applied earlier than stated in the definition (a more conservative situation than stated in the TS). The proposed TS amendments will result in the TS definition for K_6 being true from both a technical and an editorial perspective, in that the OPDT setpoint will continue to function as designed following the implementation of the T-hot reduction modification.

The proposed amendments are also consistent with the definition for K_6 as stated in NUREG-1431, Volume 1, Revision 1, "Standard Technical Specifications, Westinghouse Plants". NUREG-0452, Revision 4 and NUREG-1431, Revision 1 are consistent in the definition of this parameter.

Duke Power Company has therefore concluded that NRC approval of the proposed amendments will not be detrimental to the health and safety of the public or of Catawba personnel.

ATTACHMENT 3

NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION AND ENVIRONMENTAL IMPACT ANALYSIS

No Significant Hazards Consideration Determination

As required by 10CFR50.91, this analysis is provided concerning whether the requested amendments involve significant hazards considerations, as defined by 10CFR50.92. Standards for determination that an amendment request involves no significant hazards considerations are if operation of the facility in accordance with the requested amendment would not: 1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or 2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) Involve a significant reduction in a margin of safety.

Criterion 1

The proposed amendments will not involve a significant increase in the probability or consequences of an accident previously evaluated. The amendments will have no impact whatsoever upon the probability of any accident being initiated, since the reactor trip system is an accident mitigating system. The amendments will have no adverse impact upon any accident consequences or upon the function of the OPDT setpoint. The reactor trip heatup setpoint penalty will continue to be applied anytime T-avg is greater than T'' and will not be applied when T-avg is less than or equal to T''. This is consistent with the intent of this function.

Criterion 2

The proposed amendments will not create the possibility of a new or different kind of accident from any accident previously evaluated. The function of the OPDT setpoint will not be altered by the proposed changes. As stated previously, the reactor trip system is an accident mitigating system, so no new failure modes can be created. No change to any aspect of plant operation will result from NRC approval of the proposed amendments.

Criterion 3

The proposed amendments will not involve a significant reduction in a margin of safety. The changes are necessary to allow full implementation of the T-hot reduction modification on Catawba Unit 2. The proposed changes are consistent with the terminology of both NUREG-0452, Revision 4 and NUREG-1431, Revision 1. OPDT setpoint behavior will not be adversely impacted by the proposed changes; therefore, no impact upon any plant safety margins will result.

Based upon the preceding analyses, Duke Power Company concludes that the requested amendments do not involve a significant hazards consideration.

Environmental Impact Analysis

The proposed amendments have been reviewed against the criteria of 10CFR51.22 for environmental considerations. The proposed amendments do not involve a significant hazards consideration, nor increase the types and amounts of effluents that may be released offsite, nor increase individual or cumulative occupational radiation exposures. Therefore, the proposed amendments meet the criteria given in 10CFR51.22(c)(9) for a categorical exclusion from the requirement for an Environmental Impact Statement.

ATTACHMENT 4

PROPOSED TECHNICAL SPECIFICATION AMENDMENTS FOR CATAWBA

MARKED-UP TECHNICAL SPECIFICATION PAGES