Duke Power Company
Catawba Nuclear Generation Department
4800 Concord Road
York, SC 29745

William R. McCollum, Jr
Vice President
(803)831-3200 Office
(803)831-3426 Fax

DUKE POWER

November 15, 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 3/4.7.1 and Bases)

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.

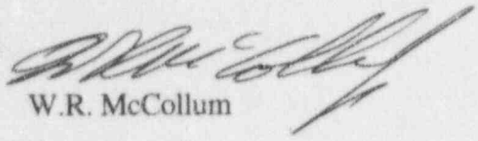
The proposed amendments modify TS 3/4.7.1 and the associated Bases to increase the setpoint tolerance of the main steam safety valves (MSSVs) from ± 1% to ± 3%, to incorporate a requirement to reset as-left MSSV lift settings to within ± 1% following surveillance testing, and to delete two obsolete footnotes.

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 TS 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 a thirty-day period following NRC approval of the proposed amendments to allow for implementation.

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

A001

Very truly yours,



W.R. McCollum

LJR/s

Attachments

xc (with 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 these revisions 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 15th day of November, 1995.

Notary Public

My commission expires:

JAN 23, 2005

bxc (with attachments):
A.V. Carr
Z.L. Taylor
L.J. Rudy
T.E. Crawford
M.L. Birch
D.W. Bradley
M.J. Brady
W.E. Green
M.D. Furtick
B.G. Addis
NCMPA-1
NCEMC
PMPA
SREC
Document Control File CN-801.01
Group File CN-801.01
ELL-EC05O

ATTACHMENT 1

BACKGROUND AND DESCRIPTION OF AMENDMENT REQUESTS

Background and Description of Amendment Requests

Each main steam line at Catawba contains a total of five self-actuated, spring-loaded safety valves. The purpose of these valves is to prevent overpressurization of the main steam system. The safety valves are considered part of the main steam vent to atmosphere (SV) system. The valves are designed to pass 105% of the engineered safeguard design steam flow at a pressure not to exceed 110% of the main steam system design pressure (1200 psia). TS currently specify a setpoint tolerance of ± 1% for the MSSVs.

Although TS specify a ± 1% setpoint tolerance, the ASME Code allows a tolerance of ± 3%. Numerous plants in the industry, including Catawba, have experienced problems with MSSV setpoint drift. The type of valve utilized at Catawba (Dresser) appears to be more susceptible to setpoint drift than other types of valves. Experience has shown that valves at many plants were not meeting the TS allowable setpoint tolerance of ± 1% during as-found setpoint testing. Consequently, a number of plants have submitted TS changes to increase the required setpoint tolerance from ± 1% to ± 3%.

The purpose of this amendment request is to increase the required setpoint tolerance of the Catawba MSSVs from ± 1% to ± 3%. TS Table 3.7-2 is modified to change the lift setting tolerance in this regard. In addition, the obsolete footnote designated by ** is being deleted, since this footnote is no longer applicable. (The obsolete footnote designated by * in TS Table 3.7-1 is also being deleted.) Finally, TS SR 4.7.1.1 is modified to specify that following testing, the MSSV lift settings shall be within ± 1%. TS Bases Section 3/4.7.1.1 is also modified to reflect the requirement to reset the MSSV lift settings to within ± 1% following testing.

ATTACHMENT 2

JUSTIFICATION AND SAFETY EVALUATION

Justification and Safety Evaluation

Duke Power Company has determined that the increased allowable tolerance from the nominal MSSV lift setting is consistent with the analyses of licensing basis accident events. A discussion of the effects of the increased tolerance is provided for each bounding licensing basis transient.

For transients that were analyzed to determine peak primary system pressure, a positive drift was applied to the MSSV lift setpoints. This maximized secondary side pressure and therefore minimized primary to secondary heat transfer. The transients that were evaluated per this acceptance criterion included turbine trip (FSAR Section 15.2.3), partial loss of flow (FSAR Section 15.3.1), complete loss of flow (FSAR Section 15.3.2), locked rotor (FSAR Section 15.3.3), and uncontrolled bank withdrawal at power (FSAR Section 15.4.2). All of these transients have been analyzed with a + 3% drift applied to the MSSV lift setpoints to ensure that the design primary pressure acceptance criterion was not exceeded.

The turbine trip transient was also analyzed to determine peak secondary system pressure. A positive drift was applied to the main steam safety valve lift setpoints to minimize secondary side pressure relief and therefore maximize secondary side pressure. The only transient analyzed per this acceptance criterion is turbine trip (FSAR Section 15.2.3), which has been analyzed with a + 3% drift applied to the MSSV lift setpoints to ensure that the design secondary pressure acceptance criterion was not exceeded.

For transients that were analyzed to demonstrate short-term core cooling capability, a positive drift was applied to the MSSV lift setpoints. This maximized secondary side pressure and therefore minimized primary to secondary heat transfer. The transients that were analyzed per this acceptance criterion included feedwater line break (FSAR Section 15.2.8), partial loss of flow (FSAR Section 15.3.1), complete loss of flow (FSAR Section 15.3.2), locked rotor (FSAR Section 15.3.3), uncontrolled bank withdrawal at power (FSAR Section 15.4.2), single uncontrolled rod withdrawal (FSAR Section 15.4.3d), inadvertent opening of a pressurizer safety or relief valve (FSAR Section 15.6.1), and steam generator tube rupture (FSAR Section 15.6.3). All of these transients have been analyzed with a +3% drift applied to the MSSV lift setpoints to ensure that the minimum DNBR remained above the 95/95 DNBR limit based on acceptable correlations.

For transients that were analyzed to demonstrate long-term core cooling capability, a positive drift was applied to the MSSV lift setpoints. This maximized secondary side pressure and therefore minimized primary to secondary heat transfer. The transients that were analyzed per this acceptance criterion are the loss of AC power (FSAR Section 15.2.6) and feedwater line break (FSAR Section 15.2.8). Both of these transients have been analyzed with a + 3% drift applied to the MSSV lift setpoints to ensure that hot leg boiling did not occur.

The steam generator tube rupture transient (FSAR Section 15.6.3) was evaluated for steam generator overfill. For this analysis, it was conservative to model steam generator pressure control using the valve that minimized secondary side pressure and thus maximized break flow. Therefore, steam generator pressure was controlled using the power operated relief valve (PORV) rather than the MSSV with the lowest setpoint. The PORV setpoint used in the analysis was 9.2% lower than

the lowest MSSV setpoint. Therefore, an allowable deviation of - 3% from the nominal lift setting was consistent with the licensing basis analysis for steam generator overfill during a steam generator tube rupture event.

The steam generator tube rupture transient (FSAR Section 15.6.3) was also evaluated to ensure that the fission product release to the environment was within the established dose acceptance criteria. This evaluation consisted of an assessment of inputs to the existing analyses of offsite doses following a steam generator tube rupture in either one of the existing steam generators or one of the replacement steam generators. The effects of drift in the MSSV setpoint up to $\pm$ 3% in combination with limiting values of initial conditions, operator response times, and other parameters were evaluated. From these evaluations, an upper bound to the whole body and thyroid doses following steam generator tube rupture was calculated. It was determined that the doses associated with this event and a drift of $\pm$ 3% in MSSV setpoints remained within acceptance criteria. Therefore, an allowable deviation of $\pm$ 3% was consistent with the licensing basis analysis for the steam generator tube rupture offsite dose evaluation.

The small break loss of coolant accident (LOCA) transient (FSAR Section 15.6.5) was analyzed to ensure that the peak fuel element cladding temperature remained below 2200F. A drift of + 3% was applied in the analysis for MSSV lift setpoints to conservatively minimize heat removal from the primary system. Thus, an allowable deviation of + 3% from the nominal lift setting is consistent with the licensing basis analysis for the small break LOCA event.

Several transients were not affected by increased MSSV setpoint drift. The steam line break DNBR (FSAR Section 15.1.5), steam line break mass and energy release (FSAR Section 6.2.1.4), large break LOCA (FSAR Section 15.6.5), and LOCA mass and energy release (FSAR Section 6.2.1.3) analyses involve secondary side depressurization, so the MSSVs are not challenged. Transients that do not involve a system thermal-hydraulic analysis are also not impacted by increased drift. These transients include statically misaligned rod (FSAR Section 15.4.3c), boron dilution (FSAR Section 15.4.6), inadvertent loading and operation of a fuel assembly in an improper position (FSAR Section 15.4.7), inadvertent emergency core cooling system (ECCS) actuation pressurizer overfill (FSAR Section 15.5.1), and break in an instrument line from the reactor coolant pressure boundary that penetrates containment (FSAR Section 15.6.2). For the excessive increase in feedwater flow (FSAR Section 15.1.2), increase in steam flow (FSAR Section 15.1.3), dropped rod (FSAR Section 15.4.3), and startup of an inactive reactor coolant pump at an incorrect temperature (FSAR Section 15.4.4), minimum DNBR occurs prior to the lifting of the MSSVs, and thus these transients were not affected by increased drift. The MSSVs do not lift during the rod ejection transient (FSAR Section 15.4.8) due to the very short duration of the simulation. The uncontrolled bank withdrawal from zero power (FSAR Section 15.4.1) was not affected by increased drift since no significant heat transfer occurs across the steam generator tubes prior to the time of minimum DNBR or peak primary system pressure.

Based on the above technical justification, Duke Power Company concludes that it is acceptable to increase the MSSV allowable setpoint tolerance from $\pm$ 1% to $\pm$ 3%.

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 a: y accident previously evaluated; or 3) Involve a significant reduction in a margin of safety.

Criterion 1

The requested amendments will not involve a significant increase in the probability or consequences of an accident previously evaluated. As demonstrated previously, all applicable licensing basis safety analyses were evaluated with a MSSV setpoint drift of ± 3%. The results of the evaluations were within all appropriate accident analysis acceptance criteria. No significant impact on DNBR results, peak primary or secondary pressures, peak fuel cladding temperature, dose, or any other accident analysis acceptance criterion was involved. No impact on the probability of any accident occurring exists as a result of the increased MSSV setpoint tolerance.

Criterion 2

The requested amendments will not create the possibility of a new or different kind of accident from any accident previously evaluated. No change is being made to any plant design feature, or to the manner in which the plant will be operated. Therefore, no new accident causal mechanisms can be generated. The MSSV setpoint tolerance only affects the time at which the valve opens following or during a transient, and is not a contributor to the probability of an accident.

Criterion 3

The requested amendments will not involve a significant reduction in a margin of safety. As stated above, all relevant accident analyses were examined to determine the effect of the wider MSSV setpoint tolerances. All analysis results are within applicable acceptance criteria. The ± 3% setpoint tolerance is consistent with ASME Code allowances. Finally, the NRC has previously approved TS changes for other plants seeking to use the ± 3% setpoint tolerance, including McGuire Nuclear Station (reference Amendment Nos. 146 and 128 for Units 1 and 2, respectively).

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