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HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

June 29, 1987

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

Re: Catawba Nuclear Station
Docket Nos. 50-413 and 50-414
Technical Specification Amendment
RTD Bypass Loop Flow Measurement

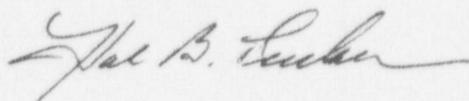
Dear Sir:

This letter contains a proposed amendment to the Technical Specifications for Facility Operating License Nos. NPF-35 and NPF-52 for Catawba Units 1 and 2. The attachment request involves deletion of the Surveillance Requirement for the RTD Bypass Loop flow measurement. The next scheduled test is for Unit 1 following the upcoming refueling outage. This amendment is therefore requested to be reviewed and approved by November 1, 1987. The attachment contains the proposed change and a discussion of the justification and safety analysis. The analysis is included pursuant to 10 CFR 50.91 and it has been concluded that the proposed amendment does not involve significant hazards considerations.

This request involves one amendment request to Catawba's Technical Specifications. Accordingly, pursuant to 10 CFR 170.21 a check for \$150.00 is enclosed.

Pursuant to 10 CFR 50.91 (b) (1) the appropriate South Carolina State Official is being provided a copy of this amendment request.

Very truly yours,



Hal B. Tucker

RWO/81/sbn

Attachment

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PDR ADOCK 05000413
P PDR

*Acc 1 w/check
" " 4150
#15392982*

U. S. Nuclear Regulatory Commission

June 29, 1987

Page Two

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U. S. Nuclear Regulatory Commission
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American Nuclear Insurers
c/o Dottie Sherman, ANI Library
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Farmington, CT 06032

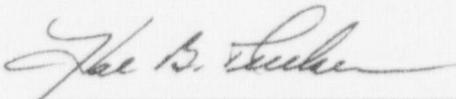
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Mr. P. K. Van Doorn
NRC Resident Inspector
Catawba Nuclear Station

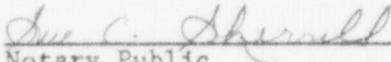
Mr. Harold R. Denton, Director
June 29, 1987
Page Three

HAL B. TUCKER, 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 Technical Specifications, Appendix A to 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.



Hal B. Tucker, Vice President

Subscribed and sworn to before me this 29th day of June, 1987.



Notary Public

My Commission Expires:

September 20, 1989

DISCUSSION AND ANALYSIS OF NO SIGNIFICANT HAZARDS CONSIDERATIONS

The proposed amendment would delete the Surveillance Requirement for the Resistance Temperature Detector (RTD) Bypass Loop flow rates.

The Reactor Coolant System hot- and cold-leg RTDs used for reactor protection are currently located in Reactor Coolant (NC) System bypass loops. A bypass loop from upstream of the steam generator to downstream of the steam generator is used for the hot-leg RTD, and a bypass loop from downstream of the reactor coolant pump to upstream of the pump is used for the cold-leg RTD. The flow rate affects the overall time response of the temperature signals provided for reactor protection.

The RTD Bypass manifolds for both Catawba Units are scheduled to be removed (January 1989 for Unit 1 and January 1988 for Unit 2). The RTDs will be placed directly in the hot and cold leg pipes and the bypass loops will be eliminated. Thus, there will no longer be a need for any flow testing requirements. The next opportunity to test the RTD Bypass flow is during the upcoming Unit 1 refueling outage. The next scheduled outage for Unit 1 is January 1989, which is beyond the latest date that the Unit 1 test may be performed (May, 1988).

The initial startup test which verified adequate flow rates in the RTD Bypass loops is sufficient for continued verification of system operability.

Verifying acceptable flow rates through the RTD Bypass lines involves verifying eight flow rates: The hot leg flow rate and the cold leg flow rate for each of NC Loops A, B, C, and D. The initial verification of these flow rates for Unit 1 was performed on November 21 and 22, 1984. It was discovered at this time that the flow through the Loop A Cold Leg manifold was inadequate due to a flow restricting orifice plate in the line. The orifice plate was bored to increase the flow rate, and the test was successfully run on December 2 and 3, 1984, with all eight flow rates meeting the acceptance criteria.

The Unit 1 RTD Bypass flows were again verified on November 19, 1986. All eight flow rates were once again greater than the minimum acceptable flow rates. In fact, the flow rate with the least amount of margin above the minimum acceptable flow rate was the Loop B Hot Leg flow. The Loop B Hot Leg measured flow rate was 104.9 gpm, and the acceptance criterion for that loop is 88.1 gpm, leaving a margin of over 19%.

The initial verification of the Unit 2 RTD Loop flow rates was performed in April 1986. As was the case for Unit 1, the Loop A Cold Leg manifold flow was found to be inadequate due to the flow-restricting orifice plate in the line. The orifice plate was bored and the test rerun successfully in May 1986.

The potential for flow blockage is minimal given that the bypass lines are either 2" or 3" lines depending on the associated NC loop (2" for the NC cold legs, 3" for the NC hot legs) and the normal flow through the lines are typically greater than 100 gpm.

Individual low flow alarms with individual status lights for each reactor coolant loop bypass flow are provided on the main control board. The alarm and status lights provide the operator with immediate indication of a low flow condition in the bypass loops associated with any reactor coolant loop.

DISCUSSION AND ANALYSIS OF NO SIGNIFICANT HAZARDS CONSIDERATIONS (CONT'D)

Local indicators are provided to monitor total flow through the RTD bypass manifolds for each loop. The indicators are located inside containment but are accessible during power operations.

Flow is locally monitored:

- (1) Prior to restoring temperature channels to normal service following reopening of bypass loop stop valves whenever a bypass loop has been out of service.
- (2) On a periodic basis.
- (3) Following any bypass loop low flow alarm.

In addition, channel deviation signals in the control system will give an alarm if any temperature channel deviates significantly from the auctioneered (highest) value. Automatic rod withdrawal blocks and turbine runback (power demand reduction) will also occur if any two of the four overtemperature or overpower delta-T channels indicate an adverse condition.

The initial tests mentioned above also involved verification of the low flow annunciator for each loop. If the RTD Bypass Loop flow rate for Loop A, B, C or D decreases to 90% of its initial measured value, an annunciator alarms in the control room. Since the initial measured values for all of the loop flows are well above the minimum acceptable flow rates, the control room annunciator will alarm well in advance of any loop flow rate dropping below the acceptance criterion flow rate.

The Reactor Trip signals receiving direct input from the RTDs are: 1) Overpower delta-T and 2) Overtemperature delta-T. Both of these trips are required to be operable per the Technical Specifications. Each channel is required to have a semi-daily channel check, an 18-month channel calibration and a 31-day analog channel operational test performed per the Technical Specifications. These surveillances will continue to be performed to verify that the trips and trip setpoints remain operable. Therefore, as long as these trips are capable of performing their intended safety functions, there will be no impact on the safety analysis upon deletion of the RTD bypass loop flow verification.

The performance of the RTD Bypass Loop flow rate test involves four people (two Nuclear Equipment Operators, one Performance Technician and one Health Physics Technician) spending four hours each in lower containment, which results in significant dose to those involved.

10 CFR 50.92 states that a proposed amendment involves no significant hazards considerations if operation in accordance with the proposed 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.

DISCUSSION AND ANALYSIS OF NO SIGNIFICANT HAZARDS CONSIDERATIONS (CONT'D)

The proposed amendment does not involve an increase in the probability or consequences of any previously evaluated accident. The probability of an accident is not increased because these changes will not affect the design or operation of the plant. Elimination of the RTD Bypass Loops will negate the necessity to perform the bypass flow rate tests. In the time between now and the removal of the bypass loops, the system is not anticipated to degrade. Adequate margin above the required minimum flow rate has been demonstrated. In addition, if flow through the bypass loops were to decrease, low flow alarms in the control room would alert the operators to the low flow condition.

The proposed amendment would not create the possibility of a new or different kind of accident from any accident previously evaluated. The design and operation of the plant will be unaffected and therefore, no new plant configurations will be introduced.

The proposed change will not significantly reduce a margin of safety. The previous flow rate tests have shown that there is more than adequate flow through the bypass loops. No degradation of the loop flow rates is anticipated, plus low flow alarms are available to actuate in the control room should there be any low flow condition present. A low flow condition in a bypass loop would have an affect or two reactor trip signals. These signals are verified to be operable per their applicable Technical Specifications. Therefore, as long as these trip signals are operable, there will be no degradation of a safety margin. Also, the amount of time between when the next flow rate test is due (May 1988) and when the RTD Bypass System is to be removed (January 1988) is relatively short.

For the above reasons, Duke Power concludes that the proposed amendment does not involve significant hazards considerations.