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March 21, 1985

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Ms. E. G. Adensam, Chief
Licensing Branch No. 4

Re: Catawba Nuclear Station
Docket Nos. 50-413 and 50-414

Dear Mr. Denton:

By letter dated October 26, 1983, Duke Power Company (Duke) submitted a response to SER Open Item 9, Conformance to the Staff's Position on Design Requirements of the RHRS and Steam Generator Tube Rupture. In this response, Duke committed to upgrade the pressurizer and steam generator power operated relief valves (PORV's) to safety grade. The anticipated approach to accomplishing this commitment was also discussed. As final details of the PORV upgrades have progressed, alternative methods for meeting the commitments have been selected. The purpose of this letter is to update the discussion that was previously provided in the above referenced letter. Our commitment to upgrade the PORV's to safety related prior to startup following the first refueling outage for Unit 1 (License Condition 18) and prior to fuel load for Unit 2, remains unchanged.

Pressurizer PORV's

The pressurizer PORV's provide the required safety-grade means to depressurize the Reactor Coolant System (RCS) to Residual Heat Removal (RHR) entry conditions. Presently, two Cold Leg Accumulator's (CLA's) provide nitrogen to the two PORV's used for Low Temperature Overpressure Protection (LTOP). This system is only enabled below a predetermined RCS temperature. Thus, a design modification to add two safety-grade nitrogen supply tanks was originally anticipated.

Following the original proposal, a review was initiated to determine the feasibility of utilizing CLA nitrogen as the safety-grade source for the PORV's for depressurization. Westinghouse was consulted to determine if any design basis accident conditions for which the pressurizer PORV's were used also required the CLA's to perform their intended function of mitigating the consequences of the accident.

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Duke's scope of review considered the emergency procedures which are broader in scope than the design basis events. The emergency procedures encompass several procedures in which the PORV's may be utilized. These procedures prioritize the available means of depressurization, with normal or auxiliary spray selected in preference to the pressurizer PORV's. When the PORV's are selected, RCS depressurization is not immediately initiated for most cases. Safety-grade nitrogen to the PORV's is only required if both normal and auxiliary spray are unavailable, the normal instrument air (VI) supply is also unavailable and time is insufficient to restore it. Note that the VI compressors may be manually aligned to the emergency diesel generators and the high pressure auxiliary spray valve has been replaced with a safety-grade electric motor operator (EMO) valve.

Westinghouse's review concluded that for large break LOCA's, CLA injection occurs and the PORV's are not required. For smaller breaks, the PORV's may be used to depressurize to aid in reestablishing pressurizer level. Any resulting reduction in CLA pressure will not adversely affect post-LOCA cooldown and depressurization using Catawba emergency procedures which are based on Westinghouse Owner's Group Emergency Response Guidelines. Also, Catawba has the ability to use sump recirculation for long term heat removal following a LOCA. For steam generator tube rupture, PORV's may be used to establish pressurizer level indication, but the CLA's are not required for mitigation of the accident.

Based on this review, the CLA's are acceptable as the nitrogen source to satisfy BTP RSB 5-1 requirements. This results in a simpler, more reliable system.

The safety-grade nitrogen source (CLA's) will not be normally aligned. Alignment for the LTOP function will continue as previously reviewed. The basic piping system will not change from that shown on FSAR Figures 6.3.2-2 and 9.3.1-2. Check valves VI367 and VI368 will be tested during operability testing of the PORV's. Electrical modifications will provide the operator with the capability of aligning nitrogen to either PORV from its respective CLA supply. The Catawba emergency procedures will establish the conditions for alignment of CLA nitrogen to the PORV's.

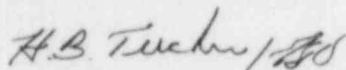
Steam Generator PORV's

The original proposal was to replace the existing pneumatic actuators with electrohydraulic actuators. However, after further evaluation the final design was revised to upgrade the pneumatic actuators to safety-related. This design includes qualification of the actuator, replacing the positioner with one which is seismically and environmentally qualified, and providing qualified regulators,

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solenoids and E to P converters. Nitrogen will be provided by seismically mounted cylinders located in the doghouse. The actuators will be qualified to remain in the safe position following a main steam line break. The PORV's in the doghouse not affected by the steamline break will be used to depressurize the intact steam generators if required. The two PORV's in each doghouse have independent nitrogen supplies with solenoids powered from independent electrical trains.

Very truly yours,



Hal B. Tucker

ROS:slb

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