NRC PDR

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

OCT 6 1978

Docket Nos: 50-413
50-414

Mr. L. C. Dail
Vice President
Design Engineering Department
Duke Power Company
P. O. Box 33189
Charlotte, North Carolina 28242

Dear Mr. Dail:

SUBJECT: STEAM GENERATOR COMPARTMENT ANALYSIS - CATAWBA NUCLEAR STATION

We have reviewed the information provided with your letter of March 13, 1978 in response to ours of December 2, 1977. Your approach to the design of the steam generator enclosures at Catawba of providing a guard pipe around the steam line within each steam generator enclosure to limit the possible steam line break size and location to a 3.05 ft^2 break at the top of the steam generator is the same as that for the McGuire plants, and is generally acceptable. However, before we can find all aspects of your submittal acceptable, we require further information regarding the following.

1. Your analysis of subcompartment pressures is identical to corresponding portions of the analysis used in McGuire. However, the McGuire analysis also included a nodalization sensitivity study, and that plant's maximum calculated differential pressure for the steam generator enclosure subcompartment design of 13.75 psi was determined from a two-node model. The Catawba analysis refers to a nodalization study, but the steam generator enclosure peak differential pressure is shown as 12.5 psi (for the nine-node case). Please explain this apparent discrepancy, or use 13.75 psi as the basis for the design of the steam generator enclosure.

   It should be noted that on Catawba you have agreed to apply a 40% margin to the maximum calculated pressures for use in subcompartment design. Therefore a design pressure differential of $1.4 \times 13.75 = 19.25$ psi would appear appropriate for the Catawba steam generator enclosures.

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2. To be consistent with our position regarding subcompartment analysis margins, the maximum asymmetric pressure acting on the steam generator should also have a 40% margin applied for use in design of the supports. Please confirm your agreement with this position.

3. With regard to inservice inspection for the main steam pipe welds enclosed by the guard pipe, you state that "inspection ports must be provided for these welds." We interpret this statement as a commitment to provide such inspection openings. Please verify this interpretation.

4. Certain features of your inservice inspection plan are not considered acceptable at this time. An acceptable plan would include the following:

   a. Piping System Welds Other Than in the Containment Isolation Region

      You should provide a commitment to base preservice and inservice inspections on the Edition of ASME Code Section XI required by 10 CFR Part 50.55a(g).

   b. High Energy Piping Systems Welds in the Containment Isolation Region

      Preservice and inservice inspections should be based on the augmented ISI requirements defined in SRP Section 6.6. When guard pipe is used in this region, you should provide sufficient access, by either inspection ports or removable guard pipe, to perform the required augmented inservice inspections.

Sincerely,

Steven A. Varga

Steven A. Varga, Chief
Light Water Reactors Branch No. 4
Division of Project Management

cc: See next page

Duke Power Company

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