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DEC 19 1980

Docket Nos.: 50-413/414

Mr. William O. Parker
Vice President - Steam Production
Duke Power Company
P.O. Box 33189
Charlotte, North Carolina 28242

Dear Mr. Parker:

SUBJECT: ULTIMATE CAPACITY ANALYSES OF MARK III CONTAINMENTS - CATAWBA NUCLEAR STATION

As part of the staff's generic review of the effects of hydrogen evolving from a postulated accident, all applicants who have either an ice condenser or Mark III pressure-suppression containment design are being requested to perform an ultimate capacity analysis for the containment. Since the Catawba Nuclear Station utilizes the ice condenser containment design, we request that you perform such an analysis, as described in the enclosure.

We further request that, within 30 days of your receipt of this letter, you identify the schedule by which the results of this analysis will be submitted to the staff.

Please contact us if you desire any clarification concerning this matter.

Sincerely,

Robert L. Tedesco, Assistant Director
for Licensing
Division of Licensing

Enclosure:
Ultimate Capacity Analyses of
Ice Condenser and Mark III Containments

cc: See next page.

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DATE	12/ /80	12/12/80	12/12/80			

NRC FORM 318 (9-76) NRCM 0240

Mr. William O. Parker

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ULTIMATE CAPACITY ANALYSES
OF ICE CONDENSER AND MARK III CONTAINMENTS

Detailed analyses are to be performed to assess the effect on containment integrity of a potential hdyrogen burn. Ultimate capacity of the containment should be evaluated using a finite element model. Uniform static pressure capability should be calculated. Dynamic local and overall pressure cabability should also be assessed. Based on the actual materia strength variations indicated by mill test certificates and other uncertainties, the mean, an estimate of dispersion, and lower and upper bounds of the containment capacity should be established. The details of the analyses and the results should be submitted in report form. The following information should be readily identifiable in the report:

1. Design pressure;

2. Calculated static pressure retaining capacity;

3. Calculated dynamic pressure strength considering appropriate pressure time histories;

4. The associated failure modes (axisymmetric burst pressure, buckling, rebar yielding, penetration failure, closure failure, or others);

5. The criteria governing the original design and the criteria used to establish failure;

6. Analysis details and general results; and

7. Appropriate engineering drawings adequate to allow verification of modeling and evaluation of analyses employed for penetrations.