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Docket No. 50-339

Mr. W. L. Proffitt
Senior Vice President - Power
Virginia Electric and Power Company
P. O. Box 26666
Richmond, Virginia 23261

Dear Mr. Proffitt:

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION

To continue our review of your application for a license to operate the North Anna Power Station, Unit 2, additional information is required. The information requested is described in the Enclosure.

To maintain our licensing review schedule, we will need a completely adequate response to all enclosed requests by October 5, 1979.

Please inform us after receipt of this letter of your confirmation of the above date or the date you will be able to meet.

Sincerely,

Original Signed by
Olan Parr

Olan D. Parr, Chief
Light Water Reactors, Branch No. 3
Division of Project Management

Enclosure:
As Stated

cc: See Next Page

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DATE	9/21/79	9/21/79				

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ENCLOSURE

REQUEST FOR ADDITIONAL INFORMATION

NORTH ANNA POWER STATION, UNIT 2

DOCKET NO. 50-339

6.0 Engineered Safeguards

6.158 In a letter dated September 10, 1979, the NRC was informed by you that overpressurization of the containment at North Anna 3 and 4 could occur as a result of a main steam line break inside containment. This overpressurization resulted when auxiliary feedwater flow was included in the analysis. NRC is currently assessing the generic implications of this letter.

To assist us in determining if a similar circumstance could occur at your facility, you should take the following actions.

1) Review your original analysis of this event, and provide NRC with the assumptions used during this analysis. Particular emphasis should be placed on describing how auxiliary feedwater flow (AFF) was accounted for in your original analysis. (Reference to previously submitted information is acceptable if identified as to page number and date.) Any changes in your design which would impact the conclusions of your original analysis should be discussed. We are particularly concerned with design changes that could lead to an underestimation of the containment pressure following a MSLB inside containment.

2) Specifically, provide the following information for the analyses performed to determine the maximum containment pressure for a spectrum of postulated main steam line breaks for various reactor power levels:

a. Specify the auxiliary feedwater flow rate that was used in your original containment pressurization analyses. Provide the basis for this assumed flow rate.

b. Provide the auxiliary feedwater rated flow rate, the run out flow rate, and the pump head capacity curve of your current design.

c. Provide schematic drawings to show the auxiliary feedwater system arrangement in your current design.

d. Provide the time span over which it was assumed in your original analysis that AFF was added to the affected steam generator following a MSLB inside containment.

e. Discuss the design provisions in the auxiliary feedwater system used to terminate the auxiliary feedwater flow to the affected steam generator. If operator action is required to perform this function, discuss the information that will be available to the operator to alert him of the need to isolate the auxiliary feedwater to the affected steam generator, the time when this information would become available, and the time it would take the operator

to complete this action. If termination of auxiliary feedwater flow is dependent on automatic action, describe the basic operation of the auto-isolation system. Describe the failure modes of the system. Describe any annunciation devices associated with the system.

f. Provide the single active failure analyses which specifically identifies those safety grade systems and components relied upon to limit the mass and energy release and the containment pressure response. The single failure analysis should include, but not necessarily be limited to: partial loss of containment cooling systems and failure of the auxiliary feedwater isolation valve to close.

g. For the single active failure case which results in the maximum containment atmosphere pressure, provide a chronology of events. Graphically, show the containment atmosphere pressure as a function of time for at least 30 minutes following the accident. For this case, assume the auxiliary feedwater flow to the broken loop steam generator to be at the pump run out flow (if a run out control system is not part of the current design) for the entire transient if no automatic isolation to auxiliary feedwater is part of the current design.

h. For the case identified in (g) above, provide the mass and energy release data in tabular form. Discuss and justify

the assumptions made regarding the time at which active containment heat removal systems become effective.