



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

January 15, 1993

Docket No. 52-002

Mr. Charles B. Brinkman, Acting Director  
Nuclear Systems Licensing  
ABB-Combustion Engineering  
1000 Prospect Hill Road  
Windsor, Connecticut 06095-0500

Dear Mr. Brinkman:

SUBJECT: LEVEL OF DESIGN DETAIL FOR THE SYSTEM 80+ STRUCTURES

We are pleased to note that the staff and ABB-Combustion Engineering (ABB-CE) have identified a path to resolution for the CE System 80+ structural design-related issues. However, the completion of the CE System 80+ structural design and analyses is on a critical path for design certification and might lead to a delay in the fulfillment of the projected schedule for the issuance of the final safety evaluation report (FSER). In order to ensure that sufficient design information is available to the staff to complete its FSER input in a timely manner, the staff will expect a certain level of completion of the structural design when the staff performs an audit of the design calculations. The expected level of completion is as discussed below.

The design of all seismic Category 1 structures should be completed to a point where the structural analyses (both static and dynamic) for all governing loads and load combinations are essentially complete for all major load carrying structural elements. The loads that must be resisted by all major structural elements including the building foundations, walls, structural frames, and structural plates and shells should be available in an auditable manner. For seismic margins and severe accident behavior, the estimates for high confidence of low probability of failure and ultimate capacity should be available for structures and elements of structures that influence the staff's safety judgments in these matters. Details of connections of structures, welded joints, and reinforcements including shear reinforcements are in general not required. In the event that the loadings imposed upon the structure raises concern about the capability of a particular connection, reinforcement pattern or welded joint, the staff will identify the particular area of design for which more detail is needed to reach a safety findings.

For safety-related structures or non-safety-related structures that house safety-related systems and equipment, design calculations should be completed, consistent with the CESSAR-DC commitments, to demonstrate the overall integrity of these structures under governing loads and load combinations. Also, the structural dynamic responses (including seismic floor response

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spectra of these structures at the locations of safety-related systems and equipment) and other structural loadings that are to be applied to safety-related systems and equipment should be completed.

The staff is planning on performing a structural audit of the CE System 80+ standard plant design in the early Spring of 1993. We request that ABB-CE expedite the completion of the System 80+ structural design to support this audit.

Sincerely,

(Original signed by)

Richard W. Borchardt, Acting Director  
Standardization Project Directorate  
Associate Directorate for Advanced Reactors  
and License Renewal  
Office of Nuclear Reactor Regulation

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ABB-Combustion Engineering, Inc.

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