

December 2, 1986

Docket No. 50-261

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Mr. E. E. Utley, Senior Executive Vice President  
Power Supply and Engineering & Construction  
Carolina Power & Light Company  
Post Office Box 1551  
Raleigh, North Carolina 27602

Dear Mr. Utley:

Subject: Carolina Power & Light Letter Dated April 24, 1986, "Piping Stress Analysis Damping Valves," H. B. Robinson Steam Electric Plant, Unit No. 2. (TAC No. 62074)

We have reviewed your subject request to use the damping values in ASME Code Case N-411 for current piping modifications and future piping stress analysis. Before we can complete our review, we require the additional information and commitments identified in our enclosure to this letter. The enclosure was telecopied to your staff earlier this month.

This information request affects fewer than 10 respondents; therefore, OMB clearance is not required under P.L. 96-54.

Sincerely,

Original Signed by


Glode Requa, Project Manager  
PWR Project Directorate #2  
Division of PWR Licensing-A  
Office of Nuclear Reactor Regulation

Enclosure: As stated

cc: See next page

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Mr. E. E. Utley  
Carolina Power & Light Company

H. B. Robinson ?

cc:

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REQUEST FOR ADDITIONAL INFORMATION

H. B. Robinson, Unit 2  
Engineering Branch, PWP-A

In a letter from A. B. Cutter to Director of NRR, dated April 24, 1986, the licensee requested staff approval to use the damping values in ASME Code Case N-411 for current piping modifications and future piping stress analyses. In addition to the analysis criteria which is presented in the revised Section 3.7.3.2.7.3, "Dynamic Analysis" of the proposed updated FSAR, the staff requires a commitment to the following conditions prior to use of the new damping values:

1. The damping values specified in Code Case N-411 may be used only in those analyses in which current seismic spectra and procedures have been employed. The 0.1g and 0.2g Housner spectrums which are identified in Figures 2.5.2-2 and 2.5.2-3 of the H. B. Robinson, Unit 2 Updated FSAR cannot be considered as "current".
2. For equipment other than piping, the damping values specified in Regulatory Guide 1.61, "Damping Values for Seismic Design of Nuclear Power Plants," should be used.
3. These damping values are not appropriate for analyzing the dynamic response of piping systems using supports designed to dissipate energy by yielding (i.e., the design of which is covered by Code Case N-420).
4. These damping values are not applicable to piping in which stress corrosion cracking has occurred unless a case-specific evaluation is made and is reviewed by the NPC staff.
5. The damping values specified in Code Case N-411 may be used only in analyses which assume an upper bound envelope of the individual response spectra for all support locations to calculate maximum inertial responses of multiply-supported items.
6. Where predicted maximum piping displacements using Code Case N-411 criteria exceed the current design calculations by an amount greater than acceptable tolerance levels, a physical verification of the availability of adequate clearance with adjacent structures, equipment and components must be performed. For equipment mounted on piping such as valves with extended structures, proper account must be taken for both rotation and translation in arriving at the predicted maximum displacement at the extreme ends of pipe mounted equipment.

7. It must be verified that the operability qualification level of pipe mounted equipment is not exceeded by the predicted response using Code Case N-411.
8. Where the existing design loads of piping supports are exceeded by the new loads predicted by the use of Code Case N-411, it must be verified that the new loads do not exceed the design capacity of the supports.
9. It must be verified that the cumulative effect of the changes of loads on piping supports that are in turn supported by a structural element of a building, such as walls, slabs, beams and columns, does not exceed the load carrying capacity of the affected structural element.
10. The FSAR and other applicable documents must be amended to identify the licensee's request for the application of Code Case N-411 and the staff's approval of the request. The application of Code Case N-411 shall be described in the FSAR and a commitment shall be included in the FSAR to maintain in the licensee's engineering records a current list and individual files of all pipe stress packages reanalyzed using Code Case N-411.

Provide another proposed revision to the H. R. Robinson Unit 2 FSAR Section 3.7.3.2.7.3 incorporating these additional conditions.