

COMANCHE PEAK UNITS 1 AND 2  
ENGINEERING BRANCH  
PWR-A  
EVALUATION OF REQUEST FOR USE OF ASME  
CODE CASES N-397 AND N-411

Background: In a letter dated January 25, 1985 to H.R. Denton the applicant requested the approval of the use of ASME Code Cases N-397 containing an alternative method of seismic analysis with shifting of spectral peaks, and N-411 concerning frequency dependent damping values. A letter from V.S. Noonan dated June 5, 1985 was sent to the applicant asking for additional clarification of the use of the subject Code Cases. On September 25, 1985 another letter from V.S. Noonan to the applicant indicated NRC's approval of the use of the subject code cases for broad application to seismic analyses of piping systems by the spectrum analysis method. However, specific approval of the subject code cases for Comanche Peak project was conditioned to the receipt of a satisfactory response from the applicant to the NRC letter of June 5, 1985 requiring implementation of a number of conditions. The applicant's latest response to the NRC letters was contained in its letter dated November 18, 1985.

Evaluation: The staff has performed a review of the applicant's letter dated November 18, 1985 regarding implementation of six criteria ("a" through "f"). The applicant has agreed to comply with the subject criteria and the staff evaluation of its response is as follows:

- (a) The applicant has committed to identify in the FSAR all pipe stress packages which use the two Code Cases. This is acceptable. The applicant intends to use the two code cases for both the reanalysis and requalification effort in Unit 1 and the as-built reconciliation for Unit 2. The staff approves of the use of the two Code Cases for the reanalysis effort and requires that all new analyses be made the analysis of record.

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- (b) The applicant has committed to identify the pipe stress packages identified in accordance with Item (a) above and to designate whether the Code Cases were used for new analyses, reconciliation or support optimization. This is acceptable. However, as indicated in Item (a) above, any stress report affected by the use of the two Code Cases must be revised as the report of record.
- (c) The applicant has committed to use the two Code Cases only for piping systems analyzed by response spectrum methods. This is acceptable.
- (d) The applicant has committed to check all predicted maximum displacements affected by the use of the two Code Cases for adequate clearance with adjacent structures, components, and equipment (including mounted equipment). This is acceptable. When the use of the Code Cases results in removal of supports, the applicant committed to evaluate the piping system stability appropriately. This is acceptable. However, the staff requires that the adequacy of the remaining supports in the affected system be properly evaluated and stability of the affected piping system be verified by experienced piping design engineers, familiar with pipe support hardware, through a physical walkdown of the affected piping system. This verification should include a determination that the support conditions assumed in the analytical model are consistent with the physical characteristics of the actual hardware used.
- (e) The applicant has committed to revise the piping system design specifications and required design documents to reflect the use of these Code Case. This is acceptable.

- (f) The applicant intends to use the Code Cases in a manner consistent with the guidance set forth in WRC Bulletin 300, "Technical Position on Industry Practice." The applicant does not intend to follow each and every recommendation of the WRC Bulletin 300 as though they are set design rules for its licensing requirements. The staff agrees that WRC Bulletin 300 provides recommendations rather than absolute requirements. The intent of the "Technical Position on Industry Practice" was to address areas in the Design Process which have been a concern in the past and to motivate the user to develop (or to use existing) in-house procedures for better control of the piping design process, including interfaces with other disciplines. The staff understands that the applicant and its contractors have procedures in place which address the piping design process, including interface control, whether or not the subject Code Cases are being used.

With respect to the applicant's position related to determining the impact of the use of the subject Code Cases on current issues (i.e., external source issues) at Comanche Peak, corrective actions resulting from the generic implications of previously raised external source issues, as related to piping and pipe supports, have essentially been addressed by the applicant's decision to reanalyze all ASME Code Class 2 and 3 large bore piping, all ASME Code Class 1, 2, and 3 pipe supports, and a representative sample of small bore piping and supports.

However, in the evaluation of root cause and generic implication beyond the piping and supports discipline, recommendations and corrective actions should be based on the results of the piping reanalysis effort using the new design criteria and include consideration of modifications made to the piping system.

Conclusion: The staff finds that the applicant's response to the NRC letters conditioning the use of Code Cases for the Comanche Peak project to be acceptable and approves the use of the subject Code Cases as indicated above. With respect to the root cause determination and generic implications (beyond piping and pipe support) of external source issues, the applicant must investigate the root cause by considering physical modifications made to the piping systems and indicate the extent to which the issues are resolved as a result of revised analyses using the ASME Code Cases N-397 and N-411.