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October 4, 1982

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Dr. Pei-Ying Chen  
Systematic Evaluation Program Branch  
Mail Stop 516  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Mr. Chen:

Subject: ASME Pressure Vessel and Piping Division Design and Analysis Committee  
The 4th National Congress on Pressure Vessel and Piping Technology

In response to your request for papers to be presented at the subject conference, I am pleased to submit an abstract of a paper by Mr. Gerald E. Hammond on experience gained in the evaluation of the effects of high energy line breaks. The title of Mr. Hammond's paper will be "Experience in the Evaluation of Effects of Postulated Pipe Breaks on Structures, Systems and Components at the San Onofre Nuclear Generating Station, Unit 1." As part of the Systematic Evaluation Program currently in progress at San Onofre Unit 1, Mr. Hammond has been leading SCE's efforts in evaluating the effects of high energy line breaks.

As you are aware as a reviewer of these topics, the evaluation of high energy line breaks can be a project of large scope, especially for older plants for which protection from these breaks was not considered in the original plant design. The paper to be presented by Mr. Hammond should give valuable insight to others who may be performing such analysis in the future. We hope that we can contribute to their better understanding the issues and the alternatives involved in performing this type of analysis.

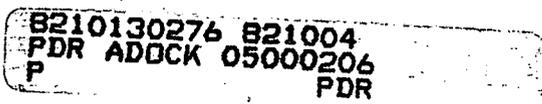
I understand that notification of tentative acceptance will be given by October 15, 1982 and that a first draft of the paper will be submitted by December 1, 1982.

If you have any questions on this subject, please contact Mr. Hammond at the above address or phone at (213) 572-2978.

Very truly yours,

*RWKrieger for KPBaskin*

Enclosure



*Accol  
Add: Pei-Ying Chen*

Experience in the Evaluation of Effects of Postulated  
Pipe Breaks on Structures, Systems and Components at the  
San Onofre Nuclear Generating Station, Unit 1

Abstract

San Onofre Nuclear Generating Station, Unit One was designed and constructed prior to the development of the current criteria for protection from the effects of high energy line breaks. In order to assess the capability of the plant to withstand the effects of such breaks, an analysis is required which compares the original design with current criteria. This paper reviews the process used to evaluate an already operating power plant against existing criteria and the necessary corrective measures required to assure protection against postulated pipe breaks

The different methods used to evaluate the effects of high energy line breaks are reviewed and the difficulties and advantages associated with applying each is discussed. Though a relatively simple "effects-oriented" analysis may be easy to perform, the conservatism inherent in the analysis could lead to a large number of modifications to systems and equipment. The more detailed "mechanistic" approach involves a greater person hour effort but is more realistic and can result in substantially fewer modifications.

In cases where high energy line breaks remain as problems but modifications are not practical, alternative ways to resolve difficult locations are investigated. The necessity of integration with other major projects is also reviewed.

GEH:5791