

DUKE POWER COMPANY

ELECTRIC CENTER, BOX 33189, CHARLOTTE, N. C. 28242

L. C. DAIL  
VICE PRESIDENT  
DESIGN ENGINEERING

May 29, 1979

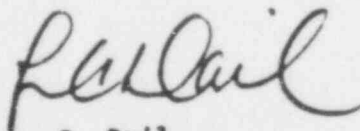
Mr. J. P. O'Reilly, Director  
U. S. Nuclear Regulatory Commission  
101 Marietta Street, Suite 3100  
Atlanta, Georgia 30303

Re: Perkins Nuclear Station  
Docket Nos.: 50-488, 50-489, 50-490  
Okeechobee Nuclear Station  
Docket Nos.: 50-491, 50-492, 50-493  
IE Bulletin: 79-07  
Duke File: P81-1412.11-1

Dear Mr. O'Reilly:

Enclosed is Duke Power's response to IE Bulletin 79-07.

Very truly yours,



L. C. Dail  
Vice President  
Design Engineering

JDW/jmi

Attachment

cc: Nuclear Regulatory Commission  
Office of Inspection and Enforcement  
Division of Reactor Operations Inspection  
Washington, D. C. 20555

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ATLANTA, GEORGIA

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DUKE'S RESPONSE TO IE BULLETIN 79-07 FOR PERKINS/CHEROKEE NUCLEAR STATION

With respect to items (1), (2) and (4) of the subject bulletin, we respond as follows:

The EDS computer program SUPERPIPE is being and will be used on the piping analysis done on Perkins and Cherokee. The analysis of the primary coolant loop will be performed by Combustion Engineering. Both EDS Nuclear, Inc. and Combustion Engineering have confirmed that their programs do not use algebraic summation methods for combining responses.

In answer to paragraph (3) of IE Bulletin No. 79-07, the verification of computer programs was done in a combination of ways. Due to the non-existence of the ASME benchmark problems during the time of the original analyses, original versions of programs were verified with hand calculated results. As more and more programs became commercially available, comparisons were made with these programs and with the ASME problems.

Specifically, EDS has used a combination of any or all of the following methods:

1. Comparison to ASME Benchmark Problem #1
2. Benchmark Problems Utilizing EDS Programs and Other Industry Programs (PIPESD, NUPIPE, ME-101)
3. Comparison to Hand Calculations
4. Comparison Between EDS Programs and Updated Versions

In answer to paragraph (3) of IE Bulletin 79-07, Combustion Engineering responds as follows:

"Time histories of the six components of force or moment ( $F_x$ ,  $F_y$ ,  $F_z$ ,  $M_x$ ,  $M_y$ ,  $M_z$ ) at various sections of the reactor coolant system main loop piping were computed separately for each of two horizontal and the vertical directions of seismic excitation. The maximum co-directional components of force or moment over all time from each of the three directions of excitation were combined by the square-root-of-the-sum-of-the-squares method to define the seismic loading condition at the particular piping location. The load sets thus defined were compared to, and shown to be less governing than, the seismic loadings specified for design of the piping.

Since the combination of loads were performed after the completion of the dynamic analysis portion of the computation, appropriateness of the results of the combination was verified by direct observation of the uncombined inputs and the combined outputs."