



Carolina Power & Light Company

May 29, 1979

CENTRAL FILES

Mr. James P. O. 'Reilly, Director
Region II
U. S. Nuclear Regulatory Commission
101 Marietta Street, N. W.
Atlanta, Georgia 30303

USNRC REGION II
ATLANTA, GEORGIA
19 MAY 1 8:59

SHEARON HARRIS NUCLEAR POWER PLANT UNIT NOS. 1, 2, 3, AND 4
DOCKET NOS. 50-400, 50-401, 50-402, AND 50-403
I.E. BULLETIN 79-07

Dear Mr. O'Reilly:

In response to your letter of April 14, 1979, Carolina Power & Light Company has investigated the methods employed in the seismic analysis of safety related piping at the Shearon Harris Nuclear Power Plant (SHNPP). The results of this investigation are summarized below:

1. Reactor Coolant Loop

The reactor coolant loop was analyzed by Westinghouse Electric Corporation using a direct integration, three-dimensional, non-linear, time history technique using three statistically independent components of earthquake motion acting simultaneously. This analysis did not employ earthquake directional motions which are not statistically dependent. The computer code utilized by Westinghouse was WECAN.

2. Safety Class 1 Piping Systems

The Class 1 lines will be analyzed using response spectrum modal analysis. Two perpendicular horizontal and one vertical earthquake components will be combined simultaneously with the intramodal responses combined using square-root-sum-of-the-squares (SRSS). The intermodal response will then be calculated using SRSS summation of the individual modes. In no instance will an algebraic technique be used to combine the responses. The computer code to be utilized by Westinghouse is WESTDYN.

3. Seismic Category 1 Piping Systems

All stress analyses conform to U.S. NRC Regulatory Guide 1.92. Modal summations were accomplished by the SRSS method in conformance to Regulatory Positions C1.1, C1.2, and C2.1 of Regulatory Guide 1.92. The computer code utilized by Ebasco Services, Inc. for this analysis was PIPESTRESS 2010.

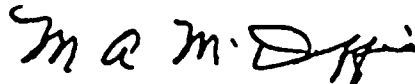
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The Westinghouse computer codes WECAN and WESTDYN are documented in WCAP-8252, Revision 1, "Documentation of Selected Westinghouse Structural Analysis Computer Codes," May 1977. Comparisons of the computer codes with benchmark problems are also contained in the subject topical report. PIPESTRESS 2010 correlates favorably with solutions to problems generated by ANSYS and PIPESD.

CP&L plans no further action with regard to your letter.

Yours very truly,



M. A. McDuffie
Senior Vice President
Engineering & Construction

MAM/t1

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