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DUKE POWER COMPANY
POWER BUILDING
422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28242

79 APR 26 A 8: 51

WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

April 24, 1979

TELEPHONE: AREA 704
373-4083

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

RE: RII:JPO
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Dear Mr. O'Reilly:

With regard to your letter of April 14, 1979 which transmitted IE Bulletin 79-07, please find attached responses to the action items for Oconee Nuclear Station.

Very truly yours,

William O. Parker, Jr.
William O. Parker, Jr. By MBS

RLG:scs
Attachment

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

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ELECTRICITY FOR A PROGRESSIVE PIEDMONT
75th Anniversary
DUKE POWER 1904-1979

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DUKE POWER COMPANY
OCONEE NUCLEAR STATION
RESPONSE TO IE BULLETIN 79-07

With respect to items (1), (2) and (4), the following response is provided.

The computer program PISOL, used for the original "as-build" Oconee piping analysis performed by Duke, was provided and maintained by EDS Nuclear of San Francisco, California. Subsequent revision piping analyses on Oconee have been performed by Duke using updated versions of PISOL and by Nuclear Power Services (NPS) of Secaucus, New Jersey using their proprietary program. Both EDS and NPS have reviewed their programs and have verified that the algebraic summation methods were not used in either the earthquake co-directional responses or in the inter-modal responses.

Certain piping analyses on Oconee were performed by Bechtel Corporation, Gaithersburg, Maryland. Bechtel has verified that algebraic summation methods, as noted above, were not used in the piping analysis performed for Duke on Oconee. Bechtel's analysis was performed by EDS on EDS programs. Certain piping analyses on Oconee were supplied by Babcock and Wilcox Co., Lynchburg, Virginia. B&W has verified that algebraic summation methods, as noted above, were not used in this piping analysis. B&W contracted this analysis to Dynatech who used the Southern Services program entitled "General Thermal Pipe Stress and Deflection Program." B&W contracted other analyses to Bechtel, San Francisco and performed some analysis in-house on the computer codes ST3DS/LUMS.

In answer to Item (3), 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, ADLPIPE, ME-101).

3. Comparison to Hand Calculations.

4. Comparison Between EDS Programs and Updated Versions.

NPS has verified its program against PIPESD and ANSYS.

B&W has verified through hand calculations that the methodology of inter-modal and earthquake co-directional responses combinations are in agreement with their intended methodology for the analysis performed by Dynatech and for the in-house ST3DS/LUMS programs. The analysis performed by Bechtel, San Francisco, for B&W was done on PISOL (verified above).