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SUBJECT: Requests approval to use Code Case N-468 at plants.

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L-89-351
10 CFR 50.55(a)

FEBRUARY 27 1990

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D. C. 20555

Gentlemen:

Re: St. Lucie Units 1 and 2
Docket Nos. 50-335 and 50-389
Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
American Society of Mechanical Engineers (ASME)
Code Case N-468

The subject Code Case was approved on March 8, 1989 and was published by ASME July 1, 1989. A copy is attached. In accordance with Article NCA-1140 of the ASME Section III Code, Florida Power & Light Company (FP&L) hereby requests approval from the Commission to use the Code Case at St. Lucie Units 1 and 2 and Turkey Point Units 3 and 4.

Very truly yours,

J. H. Goldberg
Executive Vice President

JHG/JNB/gmp

cc: Stewart D. Ebneter, Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant
Senior Resident Inspector, USNRC, St. Lucie Plant

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Approval Date: March 8, 1989

See Numeric Index for expiration and any reaffirmation dates.

Case N-468
Alternate Method of Earthquake Description for Class 2 and 3 Piping at Low Seismicity Sites Section III, Division 1

Inquiry: What alternatives to the Earthquake Description (loads) given in Section III, Division 1, Appendix N, para. N-1210 are acceptable for use in earthquake analysis of Class 2 and 3 piping at low seismicity sites? Low seismicity sites are defined as sites which have Safe Shutdown Earthquake zero period ground accelerations equal to or less than 0.15g.

Reply: It is the opinion of the Committee that for Section III, Division 1, Class 2 and 3 construction that a simplified load coefficient method may be used to describe equivalent static earthquake loads on piping at low seismicity sites as follows:

$$F_{pi} = KAW$$

where

F_{pi} = total force applied to mass distribution of the system in the ith x, y, or z global direction. In general, three directions of external forces, one vertical and two horizontal (nominal E-W and N-S), will be used in developing the resultant forces, moments, and reactions in the local 1, 2, or 3 corrdinate system of the piping. These resultant separate forces, moments, and reactions will then be combined on the SRSS basis to account for independence of seismic input directions.

A = the design basis zero period ground acceleration defined for the site.

W = weight of the component expressed as $1.0g\,m$ where g is the acceleration of gravity and m is the mass of the piping.

$K = d_m K_1$

K_1 = a coefficient which accounts for the shape of the applicable design ground and amplified or floor response spectra used to define a generic or site specific seismic design basis. The factor K_1 on a site specific basis is chosen such that the mean values of the piping moments and support reactions are within 25 percent of the largest moment or reaction on a system using the simplified load coefficient method are equal to those determined from response spectra modal analysis, RSMAM, at the site.

d_m = 1.2 (for moments in the piping system) and 1.0 (for reaction loads)
These design margins provide at least a 20 percent additional margin for the standard problems when the simplified LCM is used. The difference value of d_m for moments versus reaction loads are due to the observed consistent conservatism in the ratio of RSMAM/LCM results for reaction loads of approximate 75 percent as compared to the ratio of RSMAM/LCM moment results in the "standard" piping systems.

The equivalent static load defined herein is the inertia component of earthquake load. Earthquake loads resulting from seismic anchor motion are not included.

This Case number shall be shown in documentation on the Code Data Report when this method is used.