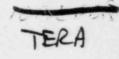


UNITED STATES NUCLEAR REGULATORY COMMISSION WASHINGTON, D. C. 20555



NOV 2 9 1973

Docket Nos. 50-369 and 50-370

> Mr. William O. Parker, Jr. Vice President, Steam Production Duke Power Company P. O. Box 2178 422 South Church Street Charlotte, North Carolina 28242

Dear Mr. Parker:

SUBJECT: SAFETY OF BOLTED CONNECTIONS IN LINEAR COMPONENT SUPPORTS (McGuire Nuclear Station, Units 1 and 2)

We have become aware of the potential for the design of some piping system support base plates not properly taking into account support plate flexibility when determining the maximum load that would be applied to the support bolts under seismic loading. This could result in underestimation of the load and subsequent use of support bolts with inadequate load carrying capability. It is requested that you provide us with information as described in the Enclosure regarding the McGuire design.

Your prompt response to this matter will be appreciated, and will permit us to complete our review of your application.

Sincerely,

Robert L. Baer, Chief Light Water Reactors Branch No. 2 Division of Project Management

Enclosure: Request for Additional Information

ccs w/enclosure: See page 2

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Mr. William O. Parker, Jr. Vice President, Steam Production Duke Power Company P. O. Box 2178 422 South Church Street Charlotte, North Carolina 28242

cc: Mr. W. L. Porter Duke Power Company P. 0. Box 2178 422 South Church Street Charlotte, North Carolina 28242

> Mr. R. S. Howard Power Systems Division Westinghouse Electric Corporation P. O. Box 355 Pittsburgh, Pennsylvania 15230

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Mr. E. J. Keith EDS Nuclear Incorporated 220 Montgomery Street San Francisco, California 94104

Mr. J. E. Houghtaling NUS Corporation 2536 Countryside Boulevard Clearwater, Florida 33515

Mr. Jesse L. Riley, President The Carolina Environmental Study Group 854 Henley Place Charlotte, North Carolina 28207

J. Michael McGarry, III, Esq. Debevoise & Liberman 700 Shoreham Building 806 15th Street, N. W. Washington, D. C. 20005

Shelley Blum, Esq. 418 Law Building 730 East Trade Street Charlotte, North Carolina 28202 NOV 2 9 1978

## Mr. William O. Parker, Jr.

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cc: Robert M. Lazo, Esq., Chairman Atomic Safety and Licensing Board U. S. Nuclear Regulatory Commission Washington, D. C. 20555

> Dr. Emmeth A. Luebke Atomic Safety and Licensing Board U. S. Nuclear Regulatory Commission Washington, D. C. 20555

Dr. Cadet H. Hand, Jr., Director Bodega Marine Lab of California P. O. Box 247 Bodega Bay, California 94923

## NOV 2 9 1978

## ENCLOSURE

## MCGUIRE NUCLEAR STATION, UNITS 1 & 2

110. MECHANICAL ENGINEERING BRANCH

Appendix XVII-2461.1 of the ASME Code Section III requires that bolt loads in bolted connections for linear component supports include prying effects due to the flexibility of the connection.\*

 Provide confirmation that the loads in bolted connections for linear component supports were determined by considering the deformation of the connection and tension-shear interaction for the bolts.

For connections of supports which are anchored to a concrete structures provide in addition:

a. The type of anchor bolt.

b. The factors of safety (and their bases) against pullout under static, repeated and transient loading.

This information should include representative diagrams of the connections, material properties, and interaction diagrams, the analytical techniques and models used, and the maximum

\*Similar requirements for structural joints are also stated in the AISC Manual of Steel Construction, 1970 Edition for plants in which support design predates Subsection NF of Section III of the ASME Code. stresses in the bolts and the connections under both static, repeated, and transient type loading.

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 If any connection was assumed to be rigid, provide complete analytical or experimental justification for this assumption.