UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

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In Reply Refer To:
RII:JPO
50-488, 50-489
50-490, 50-491
50-492, 50-493

Duke Power Company
Attn: L. C. Dail, Vice President
Design Engineering
Post Office Box 33189
Charlotte, North Carolina 28242

Gentlemen:

Enclosed is IE Bulletin No. 79-02, Revision No. 2 which requires action by you with regard to your power reactor facility(ies) with an operating license or a construction permit.

Should you have any questions regarding this Bulletin Revision or the actions required by you, please contact this office.

Sincerely,

James P. O'Reilly
Director

Enclosure:
IE Bulletin No. 79-02,
Revision No. 2 w/encls.

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cc w/encl:
J. T. Moore, Project Manager
Post Office Box 422
Gaffney, South Carolina 29340

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

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November 8, 1979

IE Bulletin No. 79-02
(Revision 2)

PIPE SUPPORT BASE PLATE DESIGNS USING CONCRETE EXPANSION ANCHOR BOLTS

Description of Circumstances:

Inspection experiences and the review of licensee response have identified several areas where the Bulletin intent has not been adequately addressed by licensees. Revision No. 2 of the Bulletin is intended to clarify the intent of the Bulletin and establish the NRC positions on minimum factors of safety, anchor bolt preload, and the expected date of completion for certain Bulletin actions. R2

Since the issuance of IE Bulletin No. 79-02 on March 8, 1979, IE inspection experience and many inquiries from licensees indicate that additional information and clarification is needed. This revision is intended to serve that purpose. None of the requirements of the original Bulletin have been deleted, and the due date for completion of the requested actions (July 6, 1979) has not been changed. The following text supersedes the text of Bulletin No. 79-02. Changes from the original text are identified by R1 and R2 in the margin. The purpose of this revision is to identify acceptable ways of satisfying the Bulletin requirements. R1

While performing inservice inspections during a March-April 1978 refueling outage at Millstone Unit 1, structural failures of piping supports for safety equipment were observed by the licensee. Subsequent licensee inspections of undamaged supports showed a large percentage of the concrete anchor bolts were not tightened properly.

Deficiency reports, in accordance with 10 CFR 50.55(e), filed by Long Island Lighting Company on Shoreham Unit 1, indicate that design of base plates using rigid plate assumptions has resulted in underestimation of loads on some anchor bolts. Initial investigation indicated that nearly fifty percent of the base plates could not be assumed to behave as rigid plates. In addition, licensee inspection of anchor bolt installations at Shoreham has shown over fifty percent of the bolt installations to be deficient.

Vendor Inspection Audits by NRC at Architect Engineering firms have shown a wide range of design practices and installation procedures which have been employed for the use of concrete expansion anchors. The current trends in the industry are toward more rigorous controls a
bolts.

The data available on dynamic testi
fatigue failures can occur at loads
cities due to material imperfection

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R1 and R2 - Identifies those additi