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DUKE POWER COMPANY

POWER BUILDING

422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28242

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WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

December 16, 1980

TELEPHONE AREA 704
373-4083

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

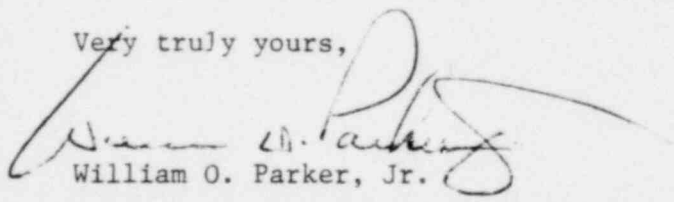
Re: McGuire Nuclear Station
Docket Nos. 50-369, 50-370
IE Bulletin 79-02

Dear Mr. O'Reilly:

Attached is Revision 4 of Duke Power Company's response to IE Bulletin 79-02. Based on discussions with the NRC during a meeting held on December 3-5, 1980, this revision documents our commitment to complete all necessary repairs prior to fuel loading on McGuire Unit 1. Note that only page 1 of our response and pages 29, 30 and 31 of the statistical evaluation of anchor bolt safety factors have changed. These revised pages are attached and should be inserted in our submittal dated December 1, 1980 (Revision 3).

If you have additional questions regarding this matter, please advise.

Very truly yours,



William O. Parker, Jr.

LJB:scs
Attachment

cc: Director, Office of Nuclear Reactor Research
Director, Inspection and Enforcement, Headquarters
T. J. Donat, NRC Senior Resident Inspector, McGuire

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MCGUIRE NUCLEAR STATION

Responses to USNRC IE Bulletin 79-02 ,Revision 4

Original: July 2, 1979
Revision 1: January 7, 1980
Revision 2: July 24, 1980
Revision 3: December 3, 1980
Revision 4: December 15, 1980

McGuire Nuclear Station is in the later stages of construction and very near completion and fuel load of Unit #1. Essentially all pipe supports have been erected in Unit #1 and a large number have been erected in Unit #2. The following is a summary, by item, of the extent and manner in which Duke Power Company intends to satisfy Actions 1 through 9 of the IE Bulletin 79-02, Revision 2.

Response 1: Duke Power Company will account for base plate flexibility in the calculation of expansion anchor bolt loads for all Seismic Category I pipe support base plates using either a conservative hand calculation method which has been verified by non-linear finite element analysis or a specific non-linear finite element analysis for a particular base plate. The models and boundary conditions, including appropriate load displacement characteristics of the anchors, used for the finite element analyses, are based on Duke studies and on work performed by Teledyne Engineering Services which was sponsored by a group of thirteen (13) utilities formed to respond to generic items of IE Bulletin 79-02. All expansion anchor support plates designed prior to implementing these analysis methods are being reanalyzed accordingly and will be modified if required to comply with allowable anchor bolt loadings.

Response 2: The minimum factors of safety, between the expansion anchor bolt design load and the bolt ultimate capacity determined from static load test, used in Duke's design of pipe supports, are as follows:

Normal Conditions	-	4
Upset Conditions	-	4
Faulted Conditions*	-	4

These factors of safety are for wedge type and sleeve type expansion anchors. Some shell type anchors were used in the early stages of McGuire construction. Use of shell type anchors for Nuclear Safety Related applications was discontinued in February, 1975. Duke Power Company has identified all pipe supports using shell type anchors and the design of these supports has been reviewed to assure that a minimum factor of safety of five (5) is maintained.

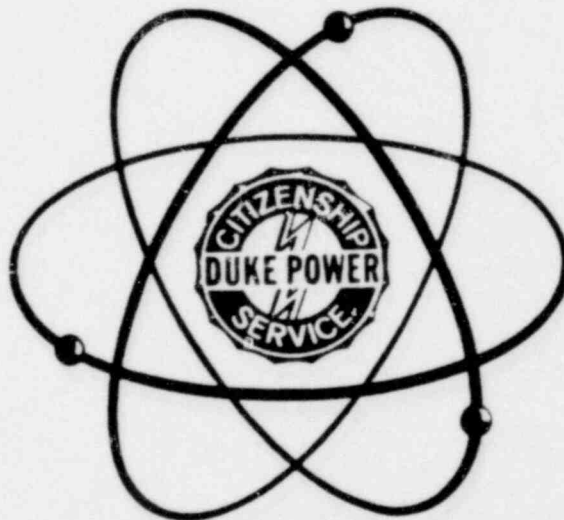
*For work completed prior to November 1, 1980, the 95% confidence level criteria, presented in the statistical analysis enclosed with this response, applies to faulted loading combinations. The design criteria for all designs after that date require a minimum safety factor of 4 for faulted conditions.

Duke Power Company McGUIRE NUCLEAR STATION

**ANCHOR BOLT SAFETY FACTOR ANALYSIS
FOR**

USNRC I & E BULLETIN 79-02

AUGUST 8, 1980
REVISED DECEMBER 1, 1980
REVISED DECEMBER 8, 1980



11.5 IMPACT ON FUEL LOADING AND FULL POWER OPERATION

Based on Duke's commitment in Revision 4 to the IEB 79-02 response, there is no impact of completing repairs on fuel loading or full power operation. All repairs required to meet the requirements of IEB 79-02 will be completed prior to fuel loading.

11.6 PLAN OF CORRECTIVE ACTION

All anchor bolts on each of the systems which did not meet the criteria will be screened, analyzed in detail, and repaired as necessary to achieve a condition which meets the acceptance criteria, i.e. no more than 5% of the anchor bolts on that system with a safety factor less than 4. This program will be similar to the hanger baseplate review which was done to consider baseplate flexibility. Also, we will expeditiously correct all bolts identified as having a safety factor less than 4. A summary of these activities and the time frame is presented below.

<u>ACTIVITY</u>	<u>TIME FRAME</u>
Upgrade to Meet 95% C. L. - Systems NF, VE, VG, WS, WZ, & YM	Prior to Fuel Loading
Correct Bolts Identified w/ FS<4	Prior to Fuel Loading

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