



**Wisconsin Electric** POWER COMPANY  
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December 7, 1979

Mr. James G. Keppler, Director  
Office of Inspection and Enforcement,  
Region III  
U. S. NUCLEAR REGULATORY COMMISSION  
799 Roosevelt Road  
Glen Ellyn, Illinois 60137

Dear Mr. Keppler:

DOCKET NOS. 50-266 AND 50-301  
PIPE SUPPORT PLATES AND CONCRETE EXPANSION ANCHORS  
IE BULLETIN 79-02, REVISION 2  
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

This is to provide our 30 day response to IE Bulletin 79-02, Revision 2, dated November 8, 1979. Enclosed is our report entitled, "30 Day Report in Response to Revision 2 of NRC Bulletin 79-02, Point Beach Nuclear Plant, Units 1 and 2". This report provides information as requested by the Bulletin and provides a summary of our field and engineering work.

As described in the report, we have completed the testing and repairs of all inaccessible supports in Unit 1, and approximately 35 percent of the inaccessible supports in Unit 2. The remaining Unit 2 supports will be finished during the next refueling presently scheduled for March, 1980. The testing of accessible supports is essentially complete at this time. We have completed a sample inspection of small pipe supports and have concluded that further testing is not required. In addition, we are proceeding to remove all Seismic Category 1 pipe supports from concrete masonry structures. Three of these supports are on large piping, and identification of the masonry-mounted supports on small piping is presently underway.

In addition to the 60 day report required by Revision 2 to Bulletin 79-02, a summary report will be submitted to you about 30 days after completion of the field testing and verification program. This is in accordance with our July 6, 1979 submittal. The field verification program is expected to be complete by the end of May, 1980, as previously reported.

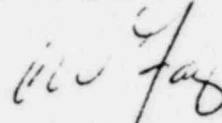
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December 7, 1979

If you have any questions or require clarification of any items contained in the report, please contact us.

Very truly yours,

A handwritten signature in dark ink, appearing to read "C. W. Fay", is written over the typed name.

C. W. Fay, Director  
Nuclear Power Department

Attachment

Copy to: Office of Inspection and Enforcement  
Division of Reactor Operations Inspection

1650 299

30 DAY REPORT IN RESPONSE TO  
REVISION 2 OF NRC BULLETIN 79-02  
FOR POINT BEACH NUCLEAR PLANT

1. INTRODUCTION

The initial report concerning the pipe support base plate designs using concrete expansion anchors was submitted on July 6, 1979. Subsequent to this report, several revisions and supplements to the NRC IE Bulletin 79-02 were issued. This report is submitted as required by Revision 2 to IE Bulletin 79-02.

2. RESPONSE TO ACTION ITEMS

IE Bulletin 79-02, Revision 2, required responses to the following items:

Item 1 RESPONSE:

This was addressed in the initial report submitted to the NRC (1).

Item 2 RESPONSE:

This was addressed in the initial report submitted to the NRC (1). The use of reduced factor of safety in the factored load approach of ACI 349-76 was not applied to Point Beach.

Item 3 RESPONSE:

This was addressed in the initial report submitted to the NRC (1).

Item 4 RESPONSE:

Revision 2 to the bulletin requests additional information that demonstrates the effects of preload on anchor bolt ultimate capacity under dynamic loads. Our initial submittal (1) addressed this area, with reference to the FFTF test report (2), and concluded that preload was not required.

Item 5 RESPONSE:

We have separated this review into two phases. The initial phase was to determine if any large (larger than 2 1/2-inches) Seismic Category 1 piping was attached to concrete masonry walls. An inspection of Point Beach was conducted in November, 1979. As a result of this inspection, supports for Seismic Category 1 large piping were found to be installed in two concrete block walls located in the volume control tank rooms for Units 1 and 2. These pipe supports were relocated to reinforced concrete walls. Based on the procedures described in NRC IE Bulletin 79-14, an operability review of this piping system was performed assuming a failure of these supports. The

Item 5 RESPONSE (continued)

conclusion from this review was that the failure of these supports would not affect system operability. However, the restraints were relocated in order to meet the system code criteria.

For small (2 1/2-inches and smaller) Seismic Category 1 piping, we conducted a complete inspection of Point Beach during the week of December 3, 1979. Because of the small number of pipe supports attached to the concrete block walls, our plans are to relocate any such identified supports to Seismic Category 1 reinforced concrete structures. Any pipe support structures attached to brick or block walls are expected to be relocated by January 31, 1980.

Item 6 RESPONSE:

We have evaluated all Seismic Category 1 piping supports that used concrete expansion bolts. All structural shapes were, therefore, included in our review.

Item 7 RESPONSE:

As of November 15, 1979, all identified, accessible Seismic Category 1 large pipe supports were inspected and tested. Approximately 35 inaccessible supports in the Unit 2 containment remain to be tested, and a few accessible supports that were not identified in the earlier testing. All accessible supports will be tested by March 1, 1980. The remaining Unit 2 inaccessible supports will be inspected, tested, and repaired if required during the Unit 2 refueling scheduled to end April 18, 1980. All Unit 1 inaccessible supports were tested and repaired as required, during the October-November 1979 refueling.

The base plate flexibility analysis and design factor of safety evaluation has been completed.

3. SUMMARY OF LARGE PIPING INSPECTION AND ANALYSIS

A total of 973 accessible and inaccessible Seismic Category 1 large piping base plate supports have been tested and inspected at Point Beach. All base plates have been reviewed to account for flexibility requirements and the resulting design factor of safety calculated. In addition, 626 of the field inspection reports have been reviewed for the "as built" or "as found" safety factors of the concrete expansion bolts. The results of these evaluations are as follows:

a. Safety factor greater than 4 of 5	519
b. Safety factor equal to or greater than 2, less than 4 or 5	91
c. Safety factor less than 2	16

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TOTAL	626
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On Item c., all 16 supports have been modified or repaired to provide a safety factor equal to or greater than 4 or 5 for wedge or shell type anchors respectively. Of the 626 supports inspected that have had engineering review of the testing, 397 required some repairs.

Although the testing program is essentially complete, the verification and upgrading of supports with deficiencies is continuing. As reported in the July 6, 1979 transmittal, we anticipate this will be complete for both units by May 31, 1980.

#### 4. SMALL PIPING FIELD INSPECTION PROGRAM

A chart analysis method was used for small piping at Point Beach. In accordance with provisions of Item 4 of the Bulletin, a sample inspection was performed in October 1979 to determine the adequacy of installation of anchor bolts on small pipe supports. The random inspection included verification of bolt size and type, embedment depth, thread engagement, plate bolt hole size, bolt spacing, edge distance to the side of a concrete member, and full expansion of the shell, if applicable. The sample was selected by randomly choosing 58 bolted supports on the small piping hanger isometric drawings, and then using those selected supports for the field inspection. The number of supports inspected was based on establishing a 95 percent confidence limit that no more than 5 percent are defective.

Subsequent to the field inspection, an engineering review was made of the data. The "as built" evaluations are as follows:

- |  |    |
|--|----|
| a. Safety factor equal to or greater than 5              | 56 |
| b. Safety factor equal to or greater than 2, less than 5 | 1  |
| c. Safety factor less than 2                             | 1  |

The support with the "as found" factor of safety less than 2 was mounted in a block wall. As a result of this sample inspection, we are proceeding to identify and remove all Seismic Category 1 pipe supports for large and small piping from block or brick structures. See the response to Item 5, above.

Based on the results of the above inspection and subject to the foregoing commitment, the adequacy of the plant small pipe supports has been demonstrated as required by the Bulletin, and no further action on this item is planned.



#### REFERENCES

1. "Interim Report on Pipe Support Base Plate Designs Using Concrete Expansion Anchor Bolts for Point Beach Nuclear Plant", July 6, 1979.
2. "Drilled-In Expansion Bolts Under Static and Alternating Loads", Report No. BR-5853-C-4 by Bechtel Power Corporation, October, 1976.