

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

September 4, 1981

WBRO-50-390/81-51
WBRO-50-391/81-49

Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 3100
101 Marietta Street
Atlanta, Georgia 30303



Dear Mr. O'Reilly:

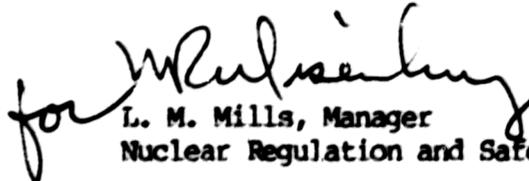
WATT'S BAR NUCLEAR PLANT UNITS 1 AND 2 - FAULTY ANCHOR PLATES AND BOLTS -
WBRO-50-390/81-51, WBRO-50-391/81-49 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector
K. V. Crlenjak on May 8, 1981, in accordance with 10 CFR 50.55(e) as
NCR 3187R. Interim reports were submitted on June 8, 1981 and
July 27, 1981. Enclosed is our final report.

If you have any questions, please get in touch with D. L. Lambert at
FTS 857-2581.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

for 
L. M. Mills, Manager
Nuclear Regulation and Safety

Enclosure

cc: Mr. Victor Stello, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
FAULTY ANCHOR PLATES AND BOLTS
WBRD-50-390/81-51, WBRD-50-391/81-49
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

The tops of wall plates and the upper two anchors on the main steam line pipe rupture restraints have pulled away from the wall or column (see attached drawings of elevation A2-A2 and detail B2 from drawing 48W1352-2 R3). This has occurred at each end of both the unit 1 and 2 restraints. The main causes of this deficiency were improper grouting of the anchor bolts as verified by pull tests and a design oversight which allowed the girder to be welded at both ends to embedded plates, thereby restricting any thermal movement.

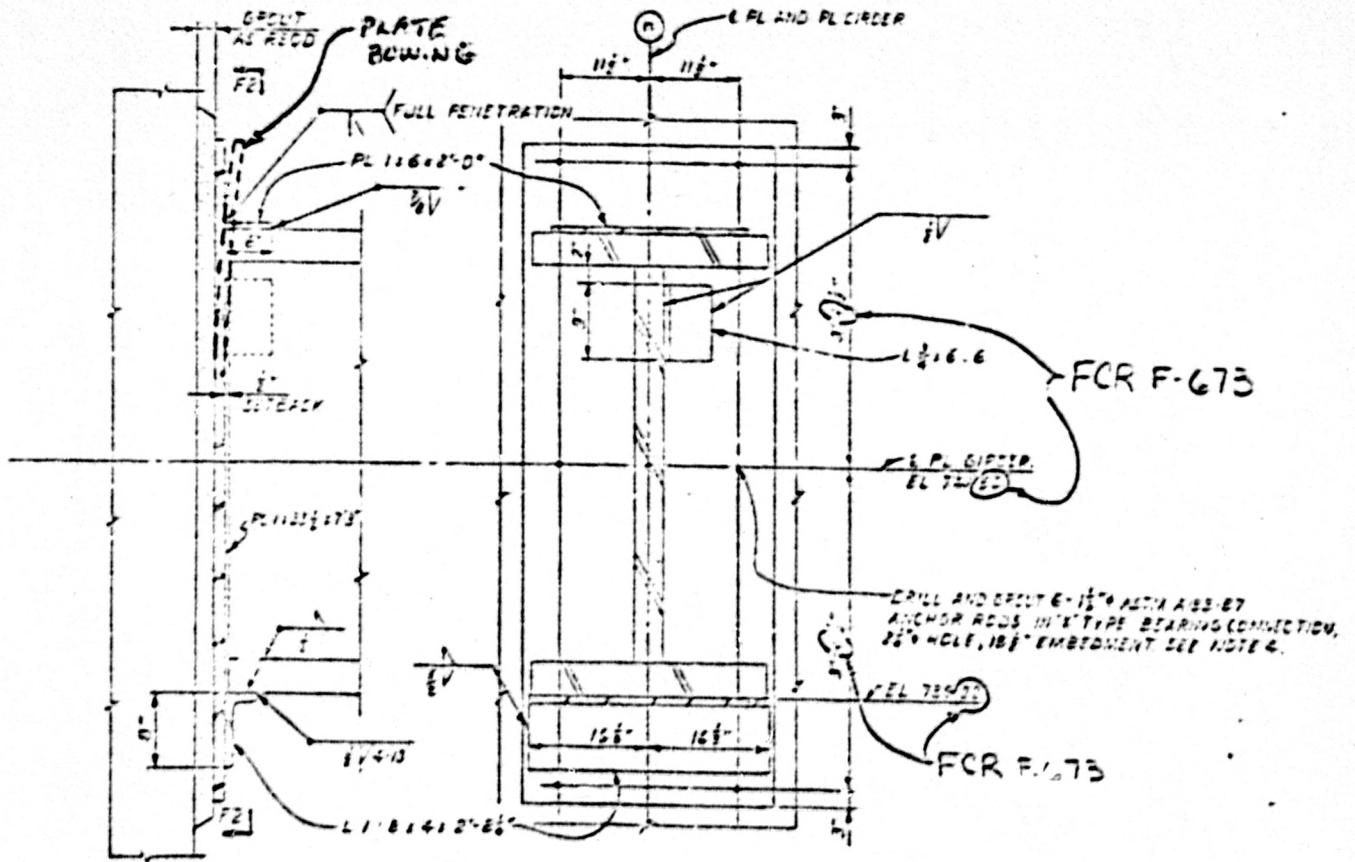
Safety Implications

If the pipe rupture restraints were not fixed and a steam line break occurred, the restraints might not adequately prevent pipe whip in all directions.

Corrective Action

All the anchors will be tested and those that fail will be regouted and retested. The connection at one end of the girder will be redesigned and made a sliding connection so as not to restrict thermal movement. Also, all welds will be reinspected using liquid penetrant examination to assure that they have not been damaged. In order to prevent recurrence of this type of nonconformance, craft personnel and inspectors will be reinstructed in the proper procedures for installations of grouted anchors. Further, it will be emphasized to design engineers to recognize and provide for thermal movements in structural designs. All corrective action will be completed by January 1, 1982.

WALL ANCHOR PLATES



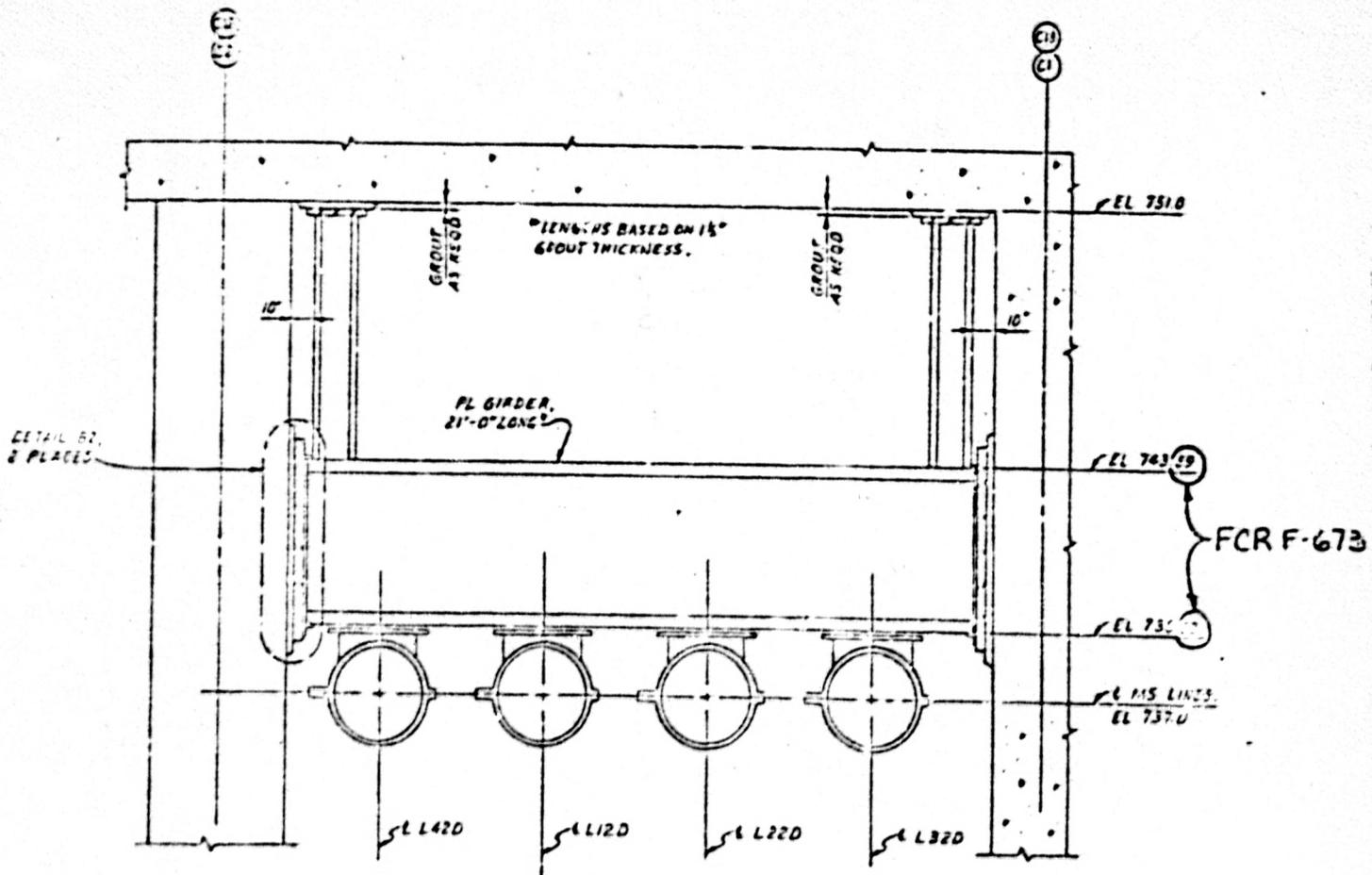
ELEVATION

F2-F2

DETAIL B2

2 FCR - UNIT 1
2 FCR - UNIT 2

PIPE RURTURE PROTECTION STRUCTURE



ELEVATION A2-A2
UNIT 1 AS SHOWN
UNIT 2 OPP HAND