Commonwealth Edison
1400 Opus Place
Downers Grove, Illinois 60515

April 26, 1993

Dr. Thomas E. Murley, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attn: Document Control Desk

Subject: Dresden Nuclear Power Station Units 2 and 3
Quad Cities Nuclear Power Station Units 1 and 2
Appendix J Exemption for Type B Testing Requirements for
Two-Ply Containment Penetration Bellows
NRC Docket Nos. 50-237/249 and 50-254/265

References: (a) J. Schrage memo to T. Murley, dated November 12, 1991.

(b) B. Boger memo to T. Kovach, dated February 6, 1992.

(c) Meeting between CECo (P.Piet, S. Eldridge, et al.) and NRC (F. Maura, B. Burgess), dated February 8, 1993.

Dear Dr. Murley:

The existing penetration bellows assemblies at both Dresden and Quad Cities are currently being tested per the approved examination methodology developed for the Appendix J Exemption for Type B Testing Requirements for Two-Ply Containment Penetration Bellows. The exemption request was made based on Commonwealth Edison's discovery at Quad Cities that the existing two-ply bellows configuration could not be properly tested in accordance with the rules of 10 CFR 50, Appendix J. The approved examination and replacement program is required to be continued for each of the applicable bellows until either it is replaced with a testable bellows assembly, or until a valid Type B testing method is developed.

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During the development of a valid Type B testing methodology, CECo developed a testable bellows cover design. This design provides Appendix J Type B testability for expansion joints. The exemption examination program specifies that all existing two-ply bellows assemblies which exhibit leakage through both plies when examined per the test program be replaced during subsequent refuel outages. The program also states that the existing bellows be removed from the exemption program if a viable Type B test method becomes available for use. Per the requirements of the examination methodology, when a bellows was found to exhibit unacceptable leakage, Dresden and Quad Cities have been replacing the entire existing bellows assembly with a redesigned two ply testable bellows. As a replacement testable bellows assembly, CECo now intends to replace the current, two-ply containment bellows with a single expansion ply and leave a testable cover assembly in place. The Appendix J Type B testable cover design will replace the currently used outer ply of the redesigned bellows assemblies with a newly installed single-ply expansion bellows and a testable cover device.

In addition, CECo intends to install the testable cover assembly over existing bellows assemblies where possible to provide Type B testability for those bellows. Because the testable cover design meets the requirements of Appendix J, all bellows assemblies modified as described, will no longer be included in the original exemption request and will be tested in accordance with the normal Type B test program.

Drawings of the bellows testable cover design for drywell penetration X-149A at Dresden Unit 2 are provided as an Attachment to this letter. A brief summary description outlining specific details of the testable bellows assembly is also included within the Attachment. The proposed testable cover will be designed for each specific penetration included in the exemption request. CECo's testable cover design was discussed with members of the NRC Staff at Region III (Reference (c)).

The use of the newly designed cover with a single ply expansion bellows should result in significant cost and man-rem savings for installation. The most labor intensive aspect of installation of the currently utilized two ply bellows assembly is the welding of the bellows elements. By eliminating the outer ply expansion bellows elements, the welding time will be significantly reduced. This cover assembly also eliminates the need for a separate protective cover assembly, thereby further reducing installation time.

In order to support implementation of the proposed testable cover and bellows design for the next Refueling Outage at Dresden Station (D3R13), CECo requests NRC concurrence of our proposed design by May 31, 1993. CECo also proposes to utilize the testable bellows cover at Quad Cities Station, when appropriate. Upon receipt of NRC Staff concurrence, following installation of the testable bellows assemblies utilizing the testable cover, such bellows will no longer be included in the exemption request and will be required to be tested in accordance with the normal Type B test program.

If there are any questions or comments concerning this matter, please direct them to this office.

Sincerely,

Peter L. Piet
Nuclear Licensing Administrator

Attachments

cc: A.B. Davis, Regional Administrator-RIII
C.P. Patel, Project Manager-Quad Cities
J.F. Stang, Project Manager-Dresden
T.E. Taylor, Senior Resident Inspector-Quad Cities
M.N. Leach, Senior Resident Inspector-Dresden
F. Maura-RIII
B. Burgess-RIII

ATTACHMENT

TESTABLE BELLOWS COVER ASSEMBLY & DRAWINGS

1) The testable bellows cover assembly is fabricated from Carbon Steel.

2) The bolting material is SA-193 Grade B7 or equivalent.

3) The injectable elastomer sealant material is a mixture (Organmetaloxide polymer), which has been verified for acceptability of application of Stainless material and for ability to withstand the environmental conditions of the areas surrounding the bellows, including radiation levels.

4) All cover assemblies will be purchased, installed, and tested in accordance with CECo Company procedures. The bellows specific designs will be issued in accordance with CECo Company procedures and installation will be controlled under the site Modification program.

5) The bellows test enclosure is to be used to test the installed inner bellows during construction. If the enclosure performs as designed, it will not be removed after testing. However, the end rings will be removed (as specified by station procedures) and will be reinstalled based upon manufacturer's recommendations (to be specified/controlled per station procedures) prior to subsequent testing.

6) The UFSAR will be revised under 10 CFR 50.59, as appropriate, to provide a description of the installed bellows configuration.

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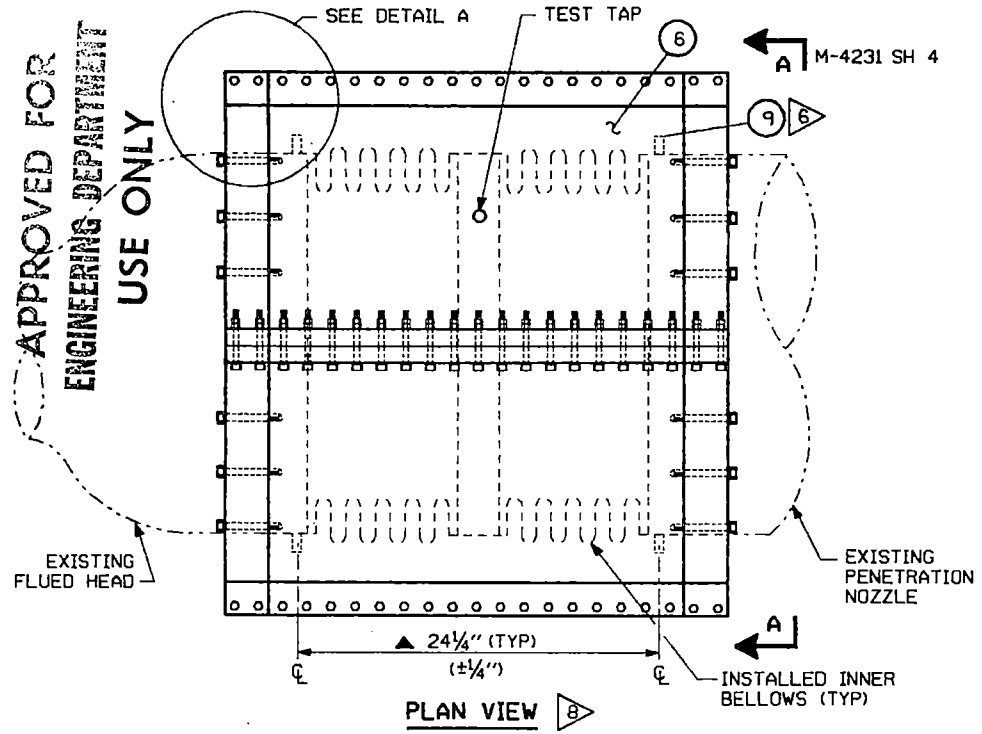
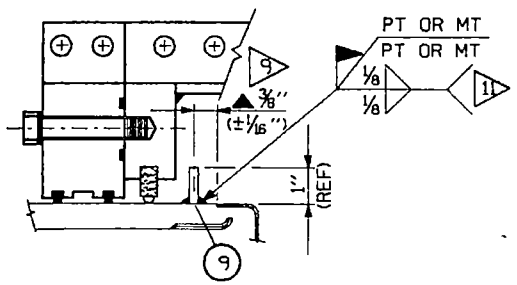


PLAN VIEW 8



DETAIL A

INJECTION SEAL
(BOLT CIRCUMFERENTIALLY ROTATED)

NOTES:

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH CECO SPECIFICATION K-4080 LATEST REVISION, INCLUDING ALL ATTACHMENTS, AND NSWPS.
2. DIMENSIONS DESIGNATED WITH THIS SYMBOL ▲ SHALL BE 100% VERIFIED AND DOCUMENTED USING ANSI/ASME NQA-1 QUALIFIED INSPECTORS. DESIGN FEEDBACK IS REQUIRED ONLY FOR THOSE DIMENSIONS WHICH ARE OUTSIDE OF TOLERANCES GIVEN. ALL OTHER DIMENSIONS ARE FOR REFERENCE ONLY.
3. ROUGH GRINDING OF SPOOL PIECE WELDS IS REQUIRED IF THE END RING IS TO BE MOUNTED ON TOP OF THE WELD. GRINDING SHALL BE FOLLOWED BY PT OR MT EXAMINATION PER THE 1980 EDITION OF ASME SECTION III, SUBARTICLE NE-5300, WITH ADDENDA THROUGH SUMMER 1982.
4. BELLOWS TEST ENCLOSURE INSTALLATION DETAILS ARE PROVIDED BY THE MANUFACTURER.
5. EXISTING TEST TAP TUBING SHALL BE REMOVED FROM EXISTING BELLOWS ASSEMBLY AND THREADED INTO ENCLOSURE HALF COUPLING. INSTALL TEST TUBING PER CECO SPECIFICATION K-4080, LATEST REVISION, PIPING TABLE "AL" WITH THE EXCEPTION THAT THE TUBING SHALL HAVE A MINIMUM PRESSURE RATING OF 62 PSIG. MATERIALS AND INSTALLATION FOR THE TEST TUBING ARE NON-SAFETY RELATED.

6 THE TWO BLOCKS (ITEM 9) ARE POSITIONED DIAMETRICALLY AT APPROX. 3 O'CLOCK AND 9 O'CLOCK ON THE SLEEVE (TYP TWO PLACES).

7 BILL OF MATERIALS ITEMS 7, 8, 10 AND 11 WILL ORIGINALLY BE PROVIDED WITH ITEM 6.

8 THE BELLOWS TEST ENCLOSURE IS TO BE USED TO [redacted] THE INSTALLED INNER BELLOWS DURING CONSTRUCTION. IF ENCLOSURE PERFORMS AS DESIGNED, IT WILL NOT BE REMOVED AFTER TESTING, HOWEVER, THE END RINGS WILL BE REMOVED. REINSTALLATION OF END RINGS TO BE DONE PER MANUFACTURER'S DETAILS, PRIOR TO SUBSEQUENT TESTING.

9 THIS DIMENSION APPLIES ONLY TO THE FLUED HEAD SIDE AND IS MEASURED FROM THE OUTER EDGE OF THE CIRCUMFERENTIAL BELLOWS WELD. THE BLOCKS ON THE DRYWELL SIDE ARE POSITIONED RELATIVE TO THE FLUED HEAD SIDE BLOCKS.

10 ONLY THE ATTACHMENTS OF THE BLOCKS (ITEM 9) TO THE SPOOL PIECES ARE SAFETY RELATED.

11 ALL WELDS SHALL BE PT OR MT EXAMINED PER THE 1980 EDITION OF ASME SECTION III, SUBARTICLE NE-5300, WITH ADDENDA THROUGH SUMMER 1982.

SEE DWG M-4231 SH 4 FOR BILL OF MATERIALS

10 NUCLEAR SAFETY RELATED

ECN NO. 12-00412M-01
PROJECT NO. COE-148
PAGE 4 OF 5
MOD. NO. SWR D00672
THIS PAGE:
DRAWING NO. M-4231 SH 3
PREPARED BY [redacted]
DATE 1/13/93
REVIEWED BY [redacted]
DATE 1/13/93

SEAL

chicago PACIFIC NUCLEAR illinois

TITLE:
COMMONWEALTH EDISON COMPANY
DRESDEN UNIT 2
BELLOWS TEST ENCLOSURE INSTALLATION
DRYWELL PENETRATION X-149A

JOB NO.	SCALE	SHEET
COE-148	NONE	3
SYSTEM	DWG. NO.	
1600	M-4231	

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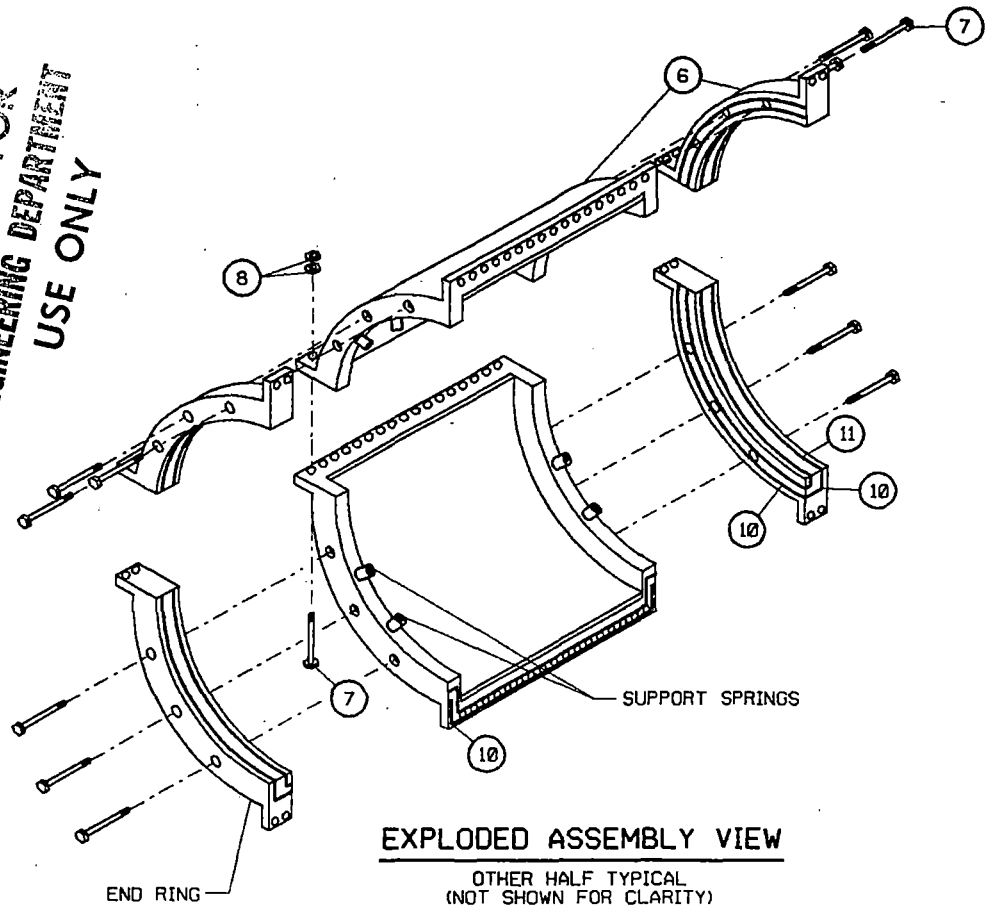
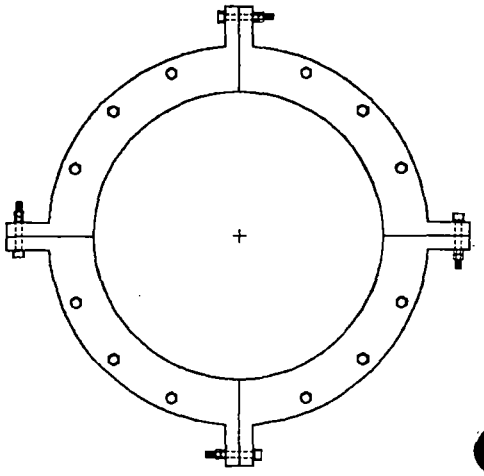
BILL OF MATERIALS
(BELLOWS TEST ENCLOSURE)

ITEM	QTY	DESCRIPTION/MATERIAL
6	4	ENCLOSURE (QUARTER SECTION)
7	AS REQ'D	½" - 13 BOLT /ASME SA-193 GR B7 OR EQ
8	AS REQ'D	½" - 13 NUT /ASME SA-194 GR 2H OR EQ
10	4	¼ X 1 X 0'-2"/ASME SA-516 GR 70
10	AS REQ'D	¼" PACKING /GRAPHITE
11	AS REQ'D	½" PACKING /GRAPHITE



EXPLODED ASSEMBLY VIEW

OTHER HALF TYPICAL
(NOT SHOWN FOR CLARITY)



SECTION A-A

(PIPE OMITTED FOR CLARITY)
(DWG M-4231 SH 3)

SEE DWG M-4231 SH 3 FOR NOTES

10 NUCLEAR SAFETY RELATED

ECN NO. 12-00412M-01
PROJECT NO. COE-148
PAGE 5 OF 5 (FINAL)
MOD. NO. SWR D00672
THIS PAGE:
DRAWING NO. M-4231 SH 4
PREPARED BY David Katz
DATE 1/13/93
REVIEWED BY [illegible]
DATE 1/13/93

SEAL

chicago PACIFIC NUCLEAR illinois

TITLE:
COMMONWEALTH EDISON COMPANY
DRESDEN UNIT 2
BELLOWS TEST ENCLOSURE INSTALLATION
DRYWELL PENETRATION X-149A

JOB NO.	SCALE	SHEET
COE-148	NONE	4
SYSTEM 1600	DWG. NO. M-4231	