



**Commonwealth Edison**

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Chicago, Illinois 60690

January 31, 1989

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

**Subject: Dresden Station Units 2 and 3  
Quad Cities Station Units 1 and 2  
"Transmittal of Follow-Up Information In  
Response to NRC Region III/NRR Inspection  
of Flued Head Anchor (FHA) Assessment Program  
NRC Docket Nos. 50-237/249 and 50-254/265**

Dear Dr. Murley:

Commonwealth Edison's Flued Head Assessment Program for Dresden and Quad Cities Stations was the subject of a joint NRC Region III and NRR inspection. This inspection took place at the Sargent & Lundy Offices on January 24 and 25, 1989. At the subject inspection, Commonwealth Edison agreed to provide additional information to your staff for their consideration.

Attached, please find the following information:

- (1) A set of tables which provides the configuration deviation versus the modification/repair for each Flued Head Anchor at each unit; and
- (2) A response regarding the action taken concerning the clarity of drawings; and
- (3) A response regarding the issue of miscellaneous stiffener plates which were included in the original design, but were not required by the present analysis.

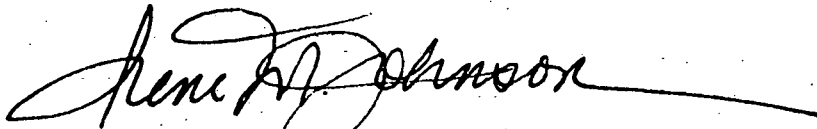
We believe this information addresses the concerns raised by your staff and should aide in the closure of this issue.

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Please direct any questions you may have regarding this matter to this office.

Very truly yours,

A handwritten signature in cursive script, appearing to read "I. M. Johnson", with a long horizontal line extending to the right.

I. M. Johnson  
Nuclear Licensing Administrator

lm

Attachments

cc: B.L. Siegel - NRR  
T.M. Ross - NRR  
A.B. Davis - NRC, Region III  
J. Gavula - NRC, Region III  
Senior Resident Inspector - Dresden  
Senior Resident Inspector - Quad Cities

## ATTACHMENT A

The NRC/NRR (BNL) audited the calculations and drawings prepared for the flued head anchor (FHA) program on January 24 and 25, 1989. CECO/S&L agreed to perform three action items as a result of this audit. This attachment describes the actions performed.

1. During the audit, informal tables summarizing the salient features of modifications and configuration variations were provided to aid in the selection of anchors for the audit. The NRR (BNL) requested that these be reviewed, revised as necessary and transmitted formally. The attached four sheets contain the requested data.
2. The drawings for FHA X-108A, Dresden Unit 3, contains an isometric diagram titled "Lateral Bracing". The NRR (BNL) observed that this diagram did not show the bracing added as part of the current modifications. While it was recognized that the added members are in fact indicated on other plans and section views shown on the drawings, the lack of these on the "Lateral Bracing" diagram could potentially confuse a reader of the drawing. S&L will add a note to avoid a potential for confusion. In addition, S&L has reviewed other drawings to assure that when members have been added, the final configuration of the FHA is clearly indicated on the drawings.
3. On FHA X-128, Dresden Unit 3, missing stiffeners were not replaced. The audit of the calculations for the affected area had indicated that the stiffeners are in fact not required. The NRR (BNL), however, requested that a second review be performed by S&L to assure that all strength aspects of the missing stiffeners have been considered. Such a second review has been performed and it is concluded that the calculations consider the relevant strength aspects.

## DESCRIPTION OF CONFIGURATION DEVIATIONS AND MODIFICATIONS

FILE NAME D2MODS.CAL

DRESDEN UNIT 2

| SYSTEM                    | PENETRATION NUMBER | REPAIR REQUIRED | DISCRIPTION OF MODIFICATIONS                                      | DESCRIPTION OF CONFIGURATION DEVIATIONS    |
|---------------------------|--------------------|-----------------|---|--|
| HPCI STEAM SUPPLY         | X-115A             | YES             | REPLACE THRU BOLTS  | MISLOCATED PLATES & PIPE NOTCHED @ ANCHORS |
| SHUTDOWN SUPPLY           | X-111B             | YES             | BRACING & STIFFENERS, INCREASE WELDS, REPLACE THRU BOLTS          | CONNECTION DEVIATION                       |
| LPCI PUMP DISCHARGE       | X-116A             | YES             | REPLACE THRU BOLTS, ADD SHIMS                                     | MISLOCATED PLATE, MISSING SHIMS            |
| LPCI PUMP DISCHARGE       | X-116B             | YES             | REPLACE & ADD THRU BOLTS, REINFORCE CEILING CONNECTION, ADD SHIMS | MISLOCATED PLATE, MISSING SHIMS            |
| CLOSED COOL. WATER SUPPLY | X-124              | NO              | N/A   | CUT & SPLICED MEMBERS, CONNECTION          |
| CLOSED COOL. WATER SUPPLY | X-123              | NO              | N/A   | DEVIATION & MISLOCATED PLATE               |
| CRD RETURN                | X-144              | NO              | N/A   | MISLOCATED PLATE & BRACE WORK POINT        |
| ISO CONDENSER SUPPLY      | X-108A             | NO              | N/A   | NO DEVIATION                               |
| ISO CONDENSER RETURN      | X-109B             | YES             | ADD SHEAR BARS AT SLAB  | MEMBER LENGTH                              |
| SHUTDOWN SUPPLY           | X-111A             | NO              | N/A   | CONNECTION MISLOCATION                     |
| STANDBY LIQUID CONTROL    | X-130              | NO              | N/A   | MISSING STIFFS. & MISLOCATED PLATE         |
| CORE SPRAY                | X-149A             | NO              | N/A   | NONE                                       |
| CORE SPRAY                | X-149B             | NO              | N/A   | NONE                                       |
| CLEAN-UP SUPPLY           | X-113              | NO              | N/A   | NONE                                       |
| REACTOR VESSEL HEAD SPRAY | X-147              | NO              | N/A   | NONE                                       |
| MAIN STEAM                | X-105A-D           |                 |   | MISSING MEMBERS,                           |
| MAIN STEAM DRAIN          | X-106              | YES             | REPAIR WALKDOWN DEFECTS, ADD SHIMS                                | FABRICATION DEVIATIONS, MISSING SHIMS      |
| REACTOR FEED WATER        | X-107A & B         |                 |   |  |

NOTE: THE ABOVE DESCRIPTION OF DEVIATIONS AND MODIFICATIONS REPRESENT SALIENT ITEMS ONLY AND IS NOT INTENDED TO BE A COMPLETE LIST OF ALL ITEMS.

DESCRIPTION OF CONFIGURATION DEVIATIONS AND MODIFICATIONS

FILE NAME A3MODS.CAL

DRESDEN UNIT 3

| SYSTEM                    | PENETRATION NUMBER | REPAIR REQUIRED | DISCRIPTION OF MODIFICATION                    | DESCRIPTION OF CONFIGURATION DEVIATIONS                |
|---------------------------|--------------------|-----------------|--|--|
| ISO CONDENSER SUPPLY      | X-108A             | YES             | ADD 2 HORIZ BRACES TO DRYWELL WALL             | MISSING BRACING  |
| ISO CONDENSER RETURN      | X-109A             | YES             | ADD 2 ADDL ANCHORS FOR 2 PLATES;REPLACE STRUTS | MINOR MISLOCATION OF CONNECTION PLATE (NOTE 1)         |
| HPCI STEAM SUPPLY         | X-128              | NO              | N/A  | MISSING STIFFENERS & WELDS                             |
| SHUTDOWN SUPPLY           | X-111A             | NO              | N/A  | BRACE CONFIGURATION (NOTE 2)                           |
| SHUTDOWN SUPPLY           | X-111B             | NO              | N/A  | MEMBER SLOPE, LOCATION & CONNECTION DEVIATION (NOTE 2) |
| CORE SPRAY                | X-149A             | NO              | N/A  | NONE (NOTE 2)  |
| CORE SPRAY                | X-149B             | NO              | N/A  | BRACE W.P. DIV. (NOTE 2)                               |
| CLEAN UP SUPPLY           | X-113              | YES             | ADD ANCHORS; REPLACE STRUTS                    | NONE (NOTE 1)  |
| LPCI PUMP DISCHARGE       | X-116A             | YES             | ADD SHIMS                                      | MISSING SHIMS (NOTE 1)                                 |
| LPCI PUMP DISCHARGE       | X-116B             | YES             | ADD SHIMS                                      | MISSING SHIMS (NOTE 1)                                 |
| CLOSED COOL.WATER SUPPLY  | X-123              | NO              | N/A  | MINOR CONN. MISLOCATION                                |
| CLOSED COOL.WATER SUPPLY  | X-124              | NO              | N/A  | MEMBER ORIENTATION                                     |
| CRD RETURN                | X-109B             | NO              | N/A  | CUT & SPLICED MEMBERS                                  |
| STANDBY LIQUID CONTROL    | X-138              | NO              | N/A  | BRACE ORIENTATION                                      |
| REACTOR VESSEL HEAD SPRAY | X-147              | NO              | N/A  | NOTCHED (CUT) MEMBER                                   |
| MAIN STEAM                | X-105A-D           |                 |  | MISSING MEMBERS,                                       |
| MAIN STEAM DRAIN          | X-106              | YES             | REPAIR WALKDOWN DEFECTS, ADD SHIMS             | FABRICATION DEVIATIONS, MISSING SHIMS                  |
| REACTOR FEED WATER        | X-107A&B           |                 |  |  |

NOTE 1: ANCHOR WAS MODIFIED FROM ORIGINAL INTALLATION DURING THE RECIRCULATION PIPING REPLACEMENT (RPR) PROGRAM.

NOTE 2: ANCHOR WAS NOT MODIFIED DURING THE RPR PROGRAM.

NOTE 3: THE ABOVE DESCRIPTION OF DEVIATIONS AND MODIFICATION REPRESENT SALIENT ITEMS ONLY AND IS NOT INTENDED TO BE A COMPLETE LIST OF ALL ITEMS.

DESCRIPTION OF CONFIGURATION DEVIATION & MODIFICATIONS

FILE NAME Q1MODS.CAL

QUAD CITIES UNIT 1

| SYSTEM                    | PENETRATION NUMBER | REPAIR REQUIRED | DISCRIPTION OF MODIFICATION                                     | DESCRIPTION OF DEVIATION                |
|---------------------------|--------------------|-----------------|---|---|
| HPCI STEAM SUPPLY         | X-11               | YES             | THRU-BOLT EXIST. HORIZ. MEMB. INTO CEILING                      | MISC. ATTACHMENT                        |
| LPCI PUMP DISCHARGE       | X-13A              | YES             | THRU-BOLT EXIST. HORIZ. MEMB. INTO CEILING                      | HOR. BRACE W.P. DEV.                    |
| LPCI PUMP DISCHARGE       | X-13B              | YES             | THRU-BOLT EXIST. HORIZ. MEMB. INTO CEILING                      | HOR. BRACE W.P. DEV.                    |
| CLOSED COOL.WATER SUPPLY  | X-23               | YES             | ADD 1 VERT MEMBER TO CEILING AND REPAIR EXIST. CONNECTIONS      | CONN. FABRICATION DEV.                  |
| CLOSED COOL.WATER SUPPLY  | X-24               | YES             | MODIFY PINS& REPLACE ANCHDRAGES WITH DRILLCO'S                  | CEA SPACING, WELDING & ASSEMBLY DEV.    |
| STANDBY LIQUID CONTROL    | X-47               | YES             | REINFORCE EXIST. BASE PLATE - ADD 2 CEA'S                       | MEMB. LENGTH DEV., MISSING 2 CEAS.      |
| CRD RETURN                | X-36               | YES             | ADD STIFFENERS, PINS, & REINFORCE VERT.MEMBERS AT COPE.         | BOLT & STIFF.SPACING DEV.; MISSING WELD |
| CORE SPRAY                | X-16A              | YES             | REINFORCE 4 EXIST.BASE PLATES, & 4 HORIZ. MEMBERS               | BRACE W.P. DEV. (NOTE 1)                |
| CDRE SPRAY                | X-16B              | YES             | REINFORCE 4 HORIZ. MEMBERS                                      | MISLOCATED STIFF.                       |
| CLEAN UP SUPPLY           | X-14               | NO              | NOT APPLICABLE  | ANCHOR SPACING                          |
| MAIN STEAM DRAIN          | X-8                | YES             | REMOVE EXIST. CEA'S   | NONE                                    |
| MAIN STEAM                | X-7A THRU D        |                 |   | REVISED SHIM LOC.; COPED HOR.MEMBER     |
| REACTOR FEEDWATER         | X-9A & B           |                 |   | FLANGES & MISC. ATTACHMENTS.,           |
| RCIC SUPPLY               | X-10               | YES             | REINFORCE 4 EXIST. HORIZ. MEMB. & REPLACE 2 EXIST. HORIZ. MEMB. | MISSING SHIMS                           |
| RHRS SUPPLY               | X-12               |                 | INCLUDING MISC. REPAIRS   |   |
| REACTOR VESSEL HEAD SPRAY | X-17               |                 |   |   |

NOTE 1: ANCHOR WAS MODIFIED DURING BELLOWS REPLACEMENT PROGRAM.

NOTE 2: THE ABOVE DESCRIPTION OF DEVIATIONS & MODIFICATIONS REPRESENT SALIENT ITEMS ONLY AND IS NOT INTENDED TO BE A COMPLETE LIST OF ALL ITEMS.

DESCRIPTION OF CONFIGURATION DEVIATION & MODIFICATIONS

FILE NAME R2MODS.CAL

QUAD CITIES UNIT 2

| SYSTEM                    | PENETRATION NUMBER | REPAIR REQUIRED | DESCRIPTION OF MODIFICATION                                    | DESCRIPTION OF DEVIATION                 |
|---------------------------|--------------------|-----------------|--|--|
| HPCI STEAM SUPPLY         | X-11               | YES             | ADD 1 VERTICAL MEMBER TO CEILING                               | MISLOCATED WEB DOUBLER PLATE             |
| LPCI PUMP DISCHARGE       | X-13A              | YES             | THRU-BOLT EXIST. HORIZ. MEMB. INTO CEILING                     | MISLOCATED GUSSET PLATE, MISSING WELDS   |
| LPCI PUMP DISCHARGE       | X-13B              | YES             | THRU-BOLT EXIST. HORIZ. MEMB. INTO CEILING                     | GUSSET PLATE ORIENTATION & MISSING WLDS. |
| CLOSED COOL. WATER SUPPLY | X-23               | YES             | ADD 1 VERT MEMBER TO CEILING AND REPAIR EXIST. CONNECTION      | CONNECTION FABRICATION DEV.              |
| CLOSED COOL. WATER SUPPLY | X-24               | YES             | ADD 1 VERT MEMBER TO CEILING                                   | STIFF. LOCATION                          |
| STANDBY LIQUID CONTROL    | X-47               | YES             | ATTACH GUSS. PLTS. TO CEILING & EXIST. VERT. MEMBERS           | ANCHOR PLATE CONFIG. DEV.                |
| CRD RETURN                | X-36               | YES             | ADD STIFFENERS & PINS  | THRU-BOLT & STIFF. SPACING               |
| CORE SPRAY                | X-16A              | YES             | ADD 4 DIAG MEMBERS TO WALLS                                    | MISSING 1 PIN OUT OF 12                  |
| CORE SPRAY                | X-16B              | YES             | ADD 3 DIAG MEMBERS TO WALLS; REPLACE 2 MISSING HORIZONTALS     | NONE (NOTE 1)                            |
| CLEAN-UP SUPPLY           | X-14               | NO              | NOT APPLICABLE   | ANCHOR SPACING                           |
| MAIN STEAM DRAIN          | X-8                | YES             | ADD 4 HORIZ. MEMBERS TO M.S. FRAME; REMOVE EXIST ANCHORS       | MISSING 2 HOR. MEMBERS                   |
| MAIN STEAM                | X-7A THRU D        |                 |  | MISSING GROUT, CEA;                      |
| REACTOR FEEDWATER         | X-9A & B           |                 |  | CEA PLATE CUT; MISC. ATTACHMENTS;        |
| RCIC SUPPLY               | X-10               | YES             | REINFORCE 4 EXIST. HORIZ. MEMB. & REPLACE 2 EXIST. HORIZ. MEMB | MISSING SHIMS                            |
| RHRS SUPPLY               | X-12               |                 |  |  |
| REACTOR VESSEL HEAD SPRAY | X-17               |                 |  |  |

NOTE 1: HOR. MEMBERS WERE CUT DURING BELLOWS REPLACEMENT PROGRAM.

NOTE 2: THE ABOVE DESCRIPTION OF DEVIATIONS & MODIFICATIONS REPRESENT SALIENT ITEMS ONLY AND IS NOT INTENDED TO BE A COMPLETE LIST OF ALL ITEMS.