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October 25, 1982

Mr. Lee L. Bishop  
Harmon & Weiss  
1725 I Street, N.W.  
Suite 506  
Washington, D.C. 20006

In the Matter of  
CONSUMERS POWER COMPANY  
(Midland Plant, Units 1 and 2)  
Docket Nos. 50-329 OM & OL and 50-330 OM & OL

Dear Mr. Bishop:

In the Staff's July 28, 1982 responses to Ms. Sinclair's inter-rogatories, it was noted at page ten that certain Licensee Event Reports were attached. These documents were omitted and I am enclosing them now.

Sincerely,

Michael N. Wilcove  
Counsel for NRC Staff

Enclosure

cc: w/enclosure  
Frank J. Kelley  
Ms. Mary Sinclair  
Ronald G. Zamarin, Esq.  
James E. Brunner, Esq.  
James R. Kates  
Wayne Hearn  
Myron M. Cherry  
T. J. Creswell  
Steve J. Gadler  
Frederick C. Williams  
Charles Bechhoefer, Esq.  
Dr. Jerry Harbour

Steward H. Freeman  
Michael I. Miller, Esq.  
Alan S. Farnell, Esq.  
Ms. Barbara Stamiris  
Wendell H. Marshall  
Paul C. Rau  
Peter Flynn  
Atomic Safety & Licensing Board  
Atomic Safety & Licensing Appeal Panel  
Docketing & Service Section  
Dr. Frederick P. Cowan

DESIGNATED ORIGINAL  
Certified By *K. Jeffrey*  
0507

OFC	:OELD	:OELD	:	:	:	:
NAME	:m.wilcove:c	:w.paton	:j.rutberg	:	:	:
DATE	:10/2/82	:10/ /82	:10/2/82	:	:	:

MNBB 9604

From: H. L. Carter, SRI @ Rancho Seco

Enclosure

LER 82-11



SACRAMENTO MUNICIPAL UTILITY DISTRICT □ 6201 S Street, Box 15330, Sacramento, California 95813 (916) 452-3211

RJR 82-226  
April 20, 1982

Notified @ 0815  
on 4-20-82  
Faxed to RZ -  
Received 4-20-82

R H ENGELKEN, REGIONAL ADMINISTRATOR  
REGION V OFFICE OF INSPECTION AND ENFORCEMENT  
U S NUCLEAR REGULATORY COMMISSION  
1450 MARIA LANE SUITE 210  
WALNUT CREEK CA 94596

DOCKET NO. 50-312  
LICENSE NO. DPR-54  
REPORTABLE OCCURRENCE NO. 82-10

In accordance with Rancho Seco Nuclear Generating Station Technical Specifications section 6.9.4.1.1 and Regulatory Guide 1.16 section C.2.a.(9), the Sacramento Municipal Utility District hereby submits the following 24-hour report of Licensee Event Report number 82-10.

On April 19, 1982, inspection of the "B" Once-Through-Steam Generator (OTSG) Auxiliary feed header revealed deformations similar to that reported for Davis-Besse. The "A" OTSG will be inspected on April 20, 1982.

Analysis of the extent of the deformation and the impact on OTSG/Auxiliary Feedwater operability is not complete as yet. The details of this analysis will be forwarded to your office as soon as they are complete. A fourteen day follow-up to this report will be issued, providing your office with an update on this situation.

R. P. Oubre  
Acting Manager, Nuclear Operations

cs: MIPC (2)  
INPO

Enclosure 2



**SMUD**

SACRAMENTO MUNICIPAL UTILITY DISTRICT □ 6201 S Street, Box 15830, Sacramento, California 95813; (916) 452-3211

RECEIVED  
MAY 23 1982

REGISTERED

May 19, 1982

R H ENGELKEN, REGIONAL ADMINISTRATOR  
REGION V OFFICE OF INSPECTION AND ENFORCEMENT  
U S NUCLEAR REGULATORY COMMISSION  
1450 MARIA LANE SUITE 210  
WALNUT CREEK CA 94596

DOCKET NO. 50-312  
LICENSE NO. DPR-54  
REPORTABLE OCCURRENCE NO. 82-10

In accordance with Rancho Seco Nuclear Generating Station Technical Specifications section 6.9.4.1.i and Regulatory Guide 1.16 section C.2.a.(9), the Sacramento Municipal Utility District hereby submits a followup to Licensee Event Report number 82-10, as submitted to your office on April 20, 1982 and April 29, 1982.

On April 19, 1982, inspection of the Rancho Seco Unit 1 "B" Once Through Steam Generator (OTSG) auxiliary feedwater header ring revealed deformations similar to that reported for Davis-Besse, Unit 1. Inspection of the Rancho Seco "A" OTSG on April 20, 1982, revealed similar deformations to the "B" OTSG.

Corrective action for this occurrence has been determined to include stabilization of the existing internal header and the addition of a new external header ring.

The District has established the attached schedule (Attachment I) for the work on the OTSG's. Please note that this is a "best case" schedule and the actual repairs may take longer than planned here if unforeseen difficulties are encountered. Additional scheduling information can be provided at a later date as requested.

*W. K. Latham*

W. K. Latham  
Acting General Manager

Attachments - 2

cc: I&E Washington (30)  
MIPC (3)  
INPO

*IE&E  
S/1*

*82060104815*

## ATTACHMENT I

OPTIMUM REPAIR SCHEDULE FOR OTSG's

<u>DATE</u>	<u>ACTIVITY</u>
5-21-82	Start hole drilling on "B" OTSG.
5-24	Drilling on "B" OTSG complete.
5-25	Start stabilizing the old (internal) ring header on the "B" OTSG.
5-26	Stabilization of "B" OTSG internal ring header complete.
5-27	Start hole drilling in "A" OTSG.
5-30	Drilling on "A" OTSG complete.
6-1	Start stabilizing internal ring header on "A" OTSG.
6-1	First new (external) ring header delivered.
6-2	Stabilization of "A" OTSG internal ring header complete.
6-2	Begin installation of external ring header for "B" OTSG.
6-3	Begin Eddy Current testing of "B" OTSG.
6-7	Second external ring header received.
6-8	Begin installation of external ring header for "A" OTSG.
6-8	Begin Eddy Current testing on "A" OTSG.
6-14	Eddy Current testing on "A" OTSG complete.
6-15	External ring header for "B" OTSG installed.
6-21	External ring header for "A" OTSG installed.

LICENSEE EVENT REPORT

EXHIBIT A

CONTROL BLOCK: \_\_\_\_\_ (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1 | C | A | R | I | S | S | 1 | 2 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 4 | 1 | 1 | 1 | 1 | 4 | \_\_\_\_\_ | 5  
7 8 9 14 15 25 26 30 37 48 58

CON'T  
0 1 | REPORT SOURCE | 6 | 0 | 5 | 0 | 0 | 0 | 3 | 1 | 2 | 3 | 0 | 4 | 1 | 9 | 8 | 2 | 8 | \_\_\_\_\_ | 9  
7 8 60 61 68 69 74 75 80

0 2 | EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10) |  
Inspection of the "B" OTSG auxiliary feedwater header ring on 4-19-82 and  
0 3 | the "A" OTSG ring on 4-20-82 revealed deformations similar to those noted |  
0 4 | at Davis-Besse Unit 1. There were no transients related to this event nor |  
0 5 | was public or plant safety affected. The current outage will be extended |  
0 6 | until satisfactory repairs can be made. A schedule is included in the |  
0 7 | covering attachment. |  
0 8 | \_\_\_\_\_ | 80

0 9 | SYSTEM CODE | CAUSE CODE | CAUSE SUBCODE | COMPONENT CODE | COMP. SUBCODE | VALVE SUBCODE |  
S | F | 11 | B | 12 | P | I | P | E | X | X | 14 | C | 15 | Z | 18 |  
7 8 9 10 11 12 13 18 19 20  
17 | LEI/RO REPORT NUMBER | EVENT YEAR | SEQUENTIAL REPORT NO. | OCCURRENCE CODE | REPORT TYPE | REVISION NO. |  
Z | 18 | Z | 19 | 8 | 2 | 0 | 1 | 0 | 0 | 1 | T | 1 |  
21 22 23 24 26 27 28 29 30 31 32  
18 | ACTION TAKEN | FUTURE ACTION | EFFECT ON PLANT | SHUTDOWN METHOD | HOURS | ATTACHMENT SUBMITTED | NPRO-4 FORM SUB. | PRIME COMP. SUPPLIER | COMPONENT MANUFACTURER |  
Z | 18 | Z | 19 | C | 20 | Z | 21 | 0 | 1 | 1 | 2 | 0 | Y | 22 | Y | 24 | N | 25 | B | 0 | 1 | 1 | 5 | 26  
33 34 35 36 37 40 41 42 43 44 45 47

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)  
1 0 | Modification work to correct this problem has been partially scheduled. |  
1 1 | The new design will include an external aux feed header ring, similar |  
1 2 | to the main feedwater header ring. The old aux feed header will be |  
1 3 | left in place and stabilized to prevent its detachment from the |  
1 4 | cylindrical baffle. | 80

1 5 | FACILITY STATUS | % POWER | OTHER STATUS (30) | METHOD OF DISCOVERY | DISCOVERY DESCRIPTION (32) |  
G | 28 | 0 | 0 | 0 | 0 | 29 | N/A | C | 31 | Visual inspection |  
7 8 9 10 12 13 44 45 46 80  
1 6 | ACTIVITY CONTENT RELEASED OF RELEASE | AMOUNT OF ACTIVITY (35) | LOCATION OF RELEASE (36) |  
Z | 33 | Z | 34 | N/A | N/A |  
7 8 9 10 11 44 45 46 80

1 7 | PERSONNEL EXPOSURES NUMBER | TYPE | DESCRIPTION |  
0 | 0 | 0 | 0 | 37 | Z | 38 | N/A |  
7 8 9 10 11 12 80  
1 8 | PERSONNEL INJURIES NUMBER | DESCRIPTION (41) |  
0 | 0 | 0 | 0 | 40 | N/A |  
7 8 9 10 11 12 80  
1 9 | LOSS OF OR DAMAGE TO FACILITY TYPE | DESCRIPTION (43) |  
Z | 42 | N/A |  
7 8 9 10 11 12 80

2 0 | PUBLICITY ISSUED DESCRIPTION (45) |  
Y | 44 | Local newspapers and wire services. |  
7 8 9 10 11 12 80

NAME OF PREPARER: R. W. Colombo PHONE: (916) 452-3211

8206010507 S

May 20, 1982

ATTN: Mark Padovan

U.S. DEPARTMENT OF NUCLEAR REACTOR REGULATION  
 MARCELL G. EISENHUT, DIRECTOR  
 DIVISION OF LICENSING  
 NUCLEAR REGULATORY COMMISSION  
 WASHINGTON DC 20555

DOCKET NO. 50-312  
 LICENSE NO. DPR-54  
 AUXILIARY FEEDWATER HEADER MODIFICATION (SUPPLEMENT)

This letter supplements the response of our previous letter pertaining to details of the Auxiliary Feedwater Header Modification. Mr. M. Padovan requested R. Colombo to furnish an "overview" concerning the above mentioned modifications today. This letter should provide that request.

The existing internal Auxiliary Feedwater Headers have become distorted since original fabrication. They must be replaced in order to provide the capability to inject Auxiliary Feedwater into the Steam Generators. They must also be stabilized to ensure that they remain in place and cause no further unacceptable damage to the internals of the Steam Generators. The internal Auxiliary Feedwater Header will continue to serve as an extension of the Upper Cylindrical Baffle (Steam Shroud) to prevent high velocity steam crossflow near the mid-span of an unsupported length of steam generator tube.

The replacement design incorporates an external Auxiliary Feedwater Header, and six new penetrations through the Steam Generator Shell and through the Upper Cylindrical Baffle (Steam Shroud). Stabilization of the internal Auxiliary Feedwater Header requires access at several points around the header. In order to ensure that loose parts are eliminated or captured, access is required to eight equally spaced header support/fixation locations around the Steam Generator. Two of these locations are accessible from the Steam Generator secondary side manway.

In full consideration of all of the above, it is prudent to add six penetrations to the Steam Generators in order to:

- 1) provide Auxiliary Feedwater injection,
- 2) provide access for internal header stabilization,
- 3) provide access for header support bracket and pin stabilization or removal.

A001

File  
 5/20/82  
 143

05520  
 05500312  
 FDR

These six new penetrations in each Steam Generator will be machined through the Steam Generator Shell and through the Upper Cylindrical Baffle (Steam Shroud). They will be machined to accept a suitable gasket and a flanged closure. A ring of threaded holes will be drilled and tapped into the Steam Generator Shell to provide closure at each penetration.

If you have any questions concerning this reply, please contact Ben Colon at Rancho Seco.

*R. J. Rodriguez*

R. J. Rodriguez  
Manager of Nuclear Operations

Enclosure 4

**SMUD**

SACRAMENTO MUNICIPAL UTILITY DISTRICT 1001 S Street, Box 1002, Sacramento, California 95833 (916) 433-3000

May 20, 1982

ATTN: Mark Padron

DIRECTOR OF NUCLEAR REACTOR REGISTRATION  
ATTN: DARRELL S. EISENBERG, DIRECTOR  
DIVISION OF LICENSING  
U S NUCLEAR REGULATORY COMMISSION  
WASHINGTON DC 20555

DOCKET NO. 50-312  
LICENSE NO. DPR-54  
AUXILIARY FEEDWATER HEADER MODIFICATION

The Sacramento Municipal Utility District has stated during a meeting on May 18, 1982 that the details concerning modifications of the OTSG Auxiliary Feedwater Header would be forwarded to the Commission. The following information is what I understand was requested at that meeting between Mr. J. J. Mattiace and Mr. T. Ippolito from your office.

Shell Penetration Diameter: 5"  
Gasket face

Depth:  $1/4 \begin{matrix} +0 \\ -1 \\ -64 \end{matrix}$

Diameter:  $6-1/4 \pm 1/64$ "

Inner Facing for Thermal Sleeve Capture

Depth:  $.115 \begin{matrix} +.005 \\ -.000 \end{matrix}$

Diameter:  $5.315 \begin{matrix} +.010 \\ -.000 \end{matrix}$

Bolting Circle Diameter: 9-1/4"

Number of Holes: 8

Bolt Hole Drill: 7/8" Dia. x 1-3/4 deep



DIRECTOR OF NUCLEAR REACTOR REGULATION -2-  
ATTN: DARRELL G EISENHUT

MAY 23, 1972

The drilling and facing operations will be done simultaneously for each penetration using a single machining setup. All modifications will meet the ASME Boiler and Pressure Vessel Code, Section XI, Class 2, 1971 edition with addenda through August 1972.

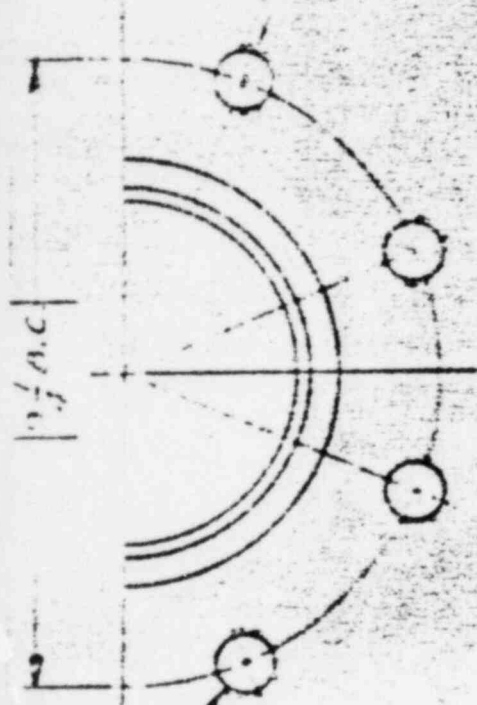
The procedural details of the above operations have been reviewed and approved by the on-site Plant Service Committee. Controls have been established that limit the modifications only as stated in the procedure. If conditions are encountered different than anticipated, due to the drilling and facing process, the OTSG will be blank flanged, vented and an investigation of the problem will be undertaken. Completion of the work will not progress until a satisfactory resolution to the problem is completed.

If you have any questions concerning this reply, please contact Mr. Ron Colombo at Rancho Seco.

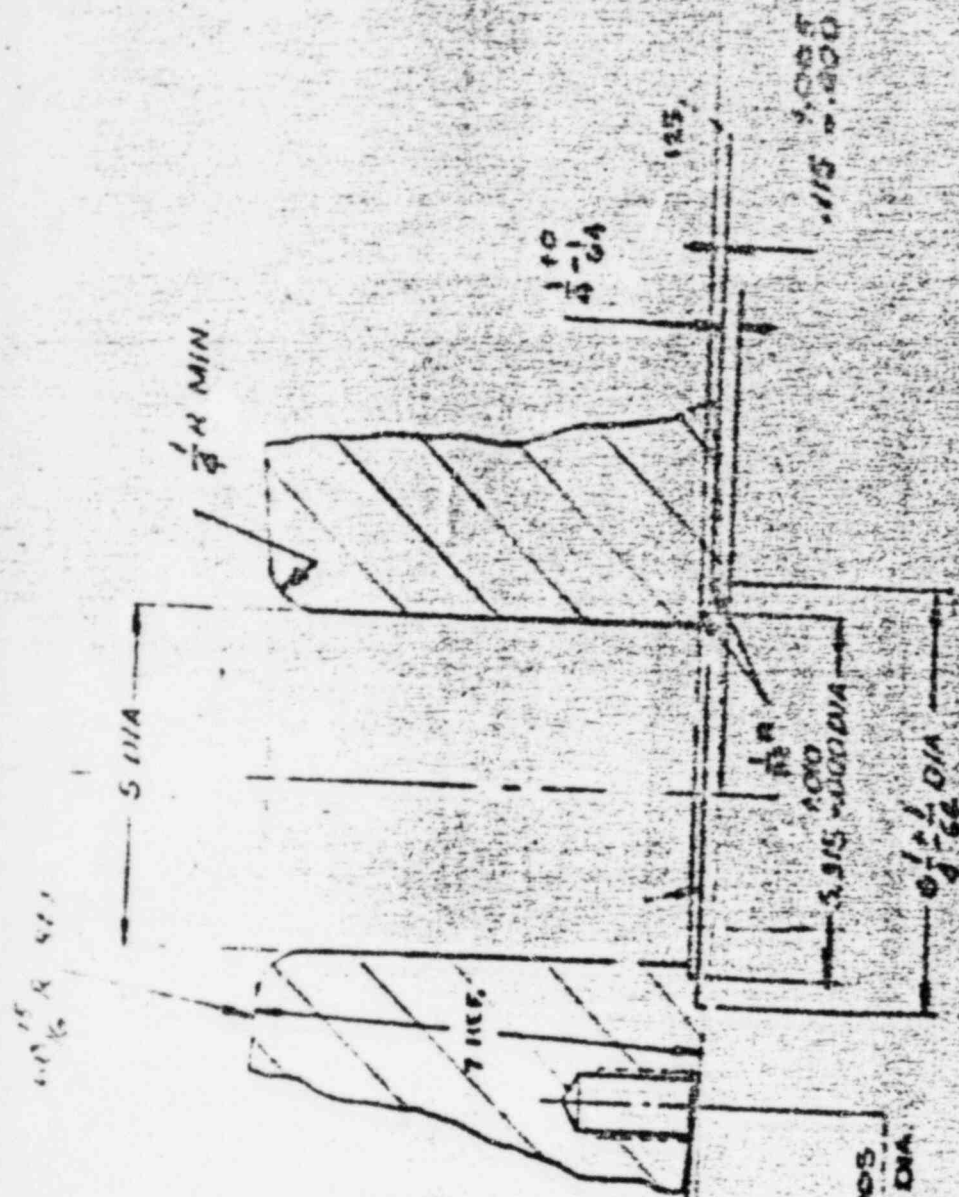
*W. K. Latham*

W. K. Latham  
Acting General Manager

DRILL 1/8 DIA X 1/4 DEEP TAP  
1-8 UNC 2 BA X 1/2 DEEP  
3 EQUALLY SPACED AND  
5 TRADDE VERTICAL C OF  
VESSEL



DETAIL A  
TYP 6 PLACES  
SCALE 1/2



1" DIA C'BORE MAX DEPTH  
 NOT TO EXCEED JUNCTION  
 OF OUTSIDE EDGE OF C'BORE  
 AND SHELL CONTOUR  
 (REQ'D WHERE NECESSARY)

1.000  
 PITCH DIA.

1/4" R MIN.

7 REF.

1.000  
 1/4" DIA

0.125

1.000  
 1/4" DIA

0.125 DIA

0.005

3.915

5.111 A

1.000  
 1/4" DIA



SACRAMENTO MUNICIPAL UTILITY DISTRICT □ 6201 S Street, Box 15830, Sacramento, California 95813; (916) 452-3211

Enclosure 5

April 29, 1982

R H ENGELKEN, REGIONAL ADMINISTRATOR  
REGION V OFFICE OF INSPECTION AND ENFORCEMENT  
U S NUCLEAR REGULATORY COMMISSION  
1450 MARIA LANE, SUITE 210  
WALNUT CREEK CA 94596



DOCKET NO. 50-312  
LICENSE NO. PPR-54  
REPORTABLE OCCURRENCE NO. 82-10

In accordance with Rancho Seco Nuclear Generating Station Technical Specifications section 6.9.4.1.i and Regulatory Guide 1.16 section C.2.a.(9), the Sacramento Municipal Utility District hereby submits the following 14-day followup to Licensee Event Report number 82-10, as submitted to your office on April 20, 1982.

On April 19, 1982, inspection of the Rancho Seco Unit 1 "B" Once Through Steam Generator (OTSG) auxiliary feedwater header ring revealed deformations similar to that reported for Davis-Besse, Unit 1. Inspection of the Rancho Seco "A" OTSG on April 20, 1982, revealed similar deformations to the "B" OTSG.

The cause of these deformations has not yet been determined and analysis is continuing. Additional inspections of the header ring will be performed to provide more data.

Regardless of the specific cause of the deformation, the consensus among Babcock and Wilcox (B&W) and the B&W owners is that the cause appears to be related to the location of the header inside the OTSG. For this reason, a corrective action has been proposed that entails the following steps.

- a. The present header ring should be "stabilized" to prevent its detachment from the cylindrical baffle and its possible impingement on the tubes.
- b. Installation of a new ring header external to the OTSG's (similar to the main feedwater header ring) using 4 to 6 penetrations for inlet nozzles.

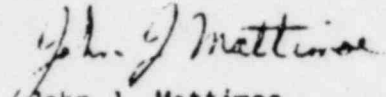
IC22  
5  
1/1

8205120210 820429  
PDR ADOCK 050C0312  
S PDR

April 29, 1982

The District's engineers are pursuing this proposed design "fix" with B&W and the owners group. A followup to this LER will be submitted when a more finalized corrective action has been determined and a schedule for completion can be established.

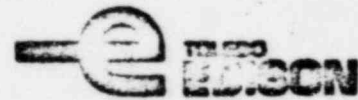
There were no transients associated with this event, however the outage originally taken to repair the HPI nozzles has been extended due to this problem. There was no effect on public or plant safety due to this event.



John J. Mattimoe  
Assistant General Manager  
and Chief Engineer

cc: I&E Washington (30)  
MIPC (3)  
INPO





April 30, 1982

Log No. K82-707  
FILE: RR 2 (NP-32-82-03)

Docket No. 50-346  
License No. NPF-3

Mr. James G. Keppler  
Regional Administrator, Region III  
Office of Inspection and Enforcement  
U. S. Nuclear Regulatory Commission  
799 Roosevelt Road  
Glen Ellyn, Illinois 60137



Dear Mr. Keppler:

Reportable Occurrence 82-019  
Davis-Besse Nuclear Power Station Unit 1  
Date of Occurrence: April 26, 1982

Enclosed are three copies of Licensee Event Report 82-019 including supplemental information sheets which are being submitted in accordance with Technical Specification 6.9 to provide 14 day written notification of the subject occurrence.

Yours truly,

*Terry D. Murray /smg*

Terry D. Murray  
Station Superintendent  
Davis-Besse Nuclear Power Station

TDM/lmr

Enclosure

CC: Mr. Richard DeYoung, Director  
Office of Inspection and Enforcement  
Encl: 40 copies

Mr. Norman Haller, Director  
Office of Management and Program Analysis  
Encl: 3 copies  
2 copies telecopied report

Mr. Walt Rogers  
NRC Resident Inspector  
Encl: 1 copy

MAY 5 1982





TOLEDO EDISON COMPANY  
DAVIS-BESSE NUCLEAR POWER STATION UNIT ONE  
SUPPLEMENTAL INFORMATION FOR IER NP-33-82-03

DATE OF EVENT: April 19, 1992

FACILITY: Davis-Besse Unit 1

Conditions Prior to Occurrence: The unit was in Mode 6, with Power (MW) = 0 and Load (Gross MW) = 0.

Description of Occurrence: During the steam generator eddy current inspection, it was discovered that some of the steam generator tubes located adjacent to the auxiliary feedwater header showed potential interaction with the header support system. A secondary side manway from Steam Generator 1-1 was removed, and it was determined by direct visual observation and fiberoptic inspection that the auxiliary feedwater header was not securely fastened to the upper shroud and had experienced damage. Inspection of the other steam generator yielded similar results. These inspections have identified:

- (1) Ten peripheral tubes in the 1-2 SG and fourteen peripheral tubes in the 1-1 SG based on eddy current examinations may have been in contact with the AFW header assembly.
- (2) As a result of this potential contact between the tubes and header assembly, three tubes contain pluggable indications.
- (3) The amount of tube ID reduction on the damaged tubes is less than 20 mils.
- (4) The outward wall of the header is distorted inward (concave) as much as 1/4".
- (5) Certain header support brackets are bent, and on some the bottom ligaments are torn out or have broken off.
- (6) Dowel pins are missing at six of eight locations inspected. Three dowel pins and two brackets have been retrieved from the steam annulus area in 1-2 SG.
- (7) There is evidence of wear on dowel pins and brackets.
- (8) The auxiliary feedwater nozzle thermal sleeve was not in alignment with the header on Unit #1 (1-1 SG).

See drawings on pages 3 through 5.

This incident is being reported in accordance with Technical Specification 6.9.1.2.

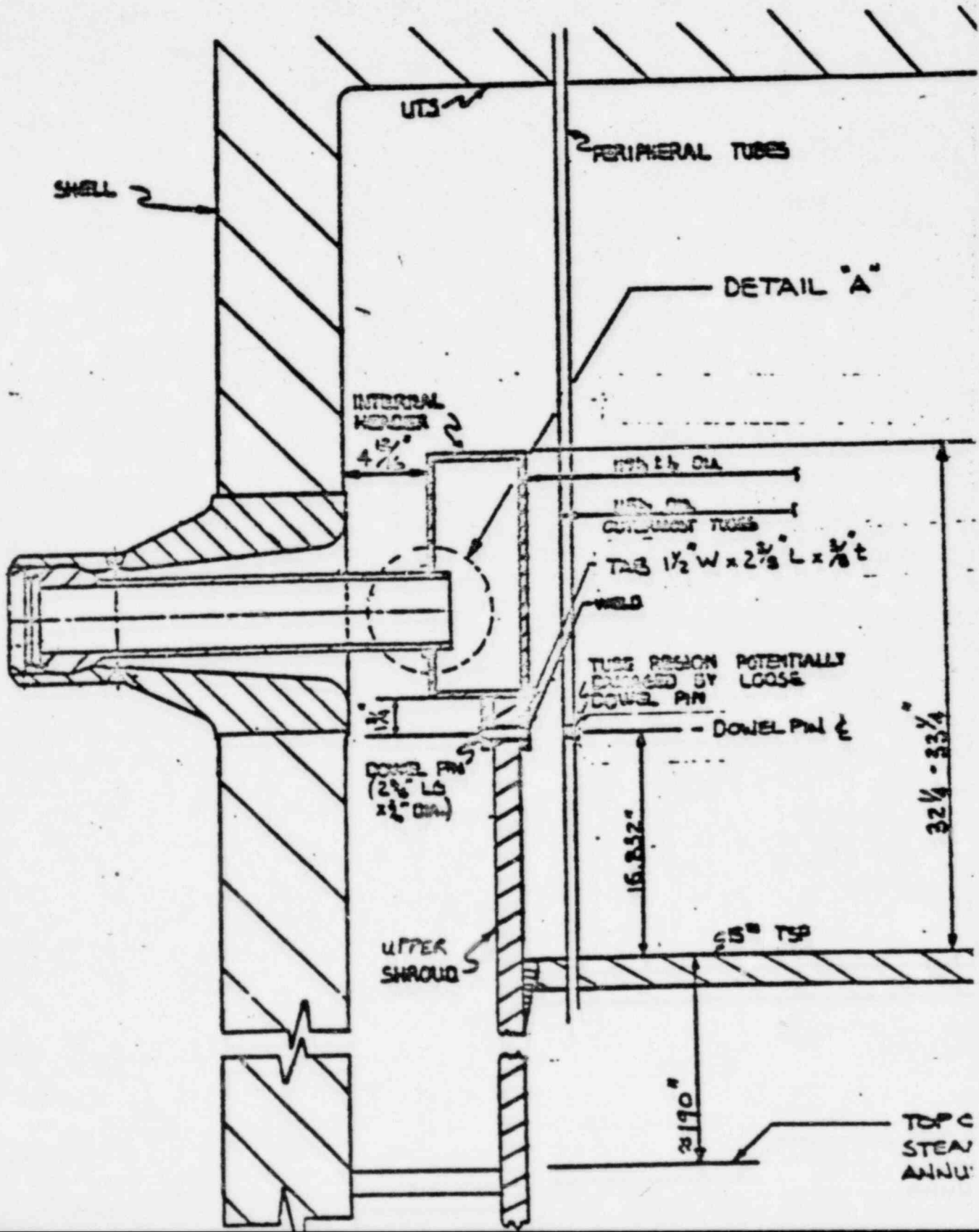
Designation of Apparent Cause of Occurrence: The root cause of this event has not yet been determined. The investigation is still continuing, no conclusions have yet been drawn. This will be updated as information becomes available.

Analysis of Occurrence: There is no danger to the health and safety of the public or to station personnel. The steam generators are not in use at this time since the unit is shutdown for the refueling outage. There have been no actuations of the auxiliary feedwater system where the header was unable to deliver adequate flow.

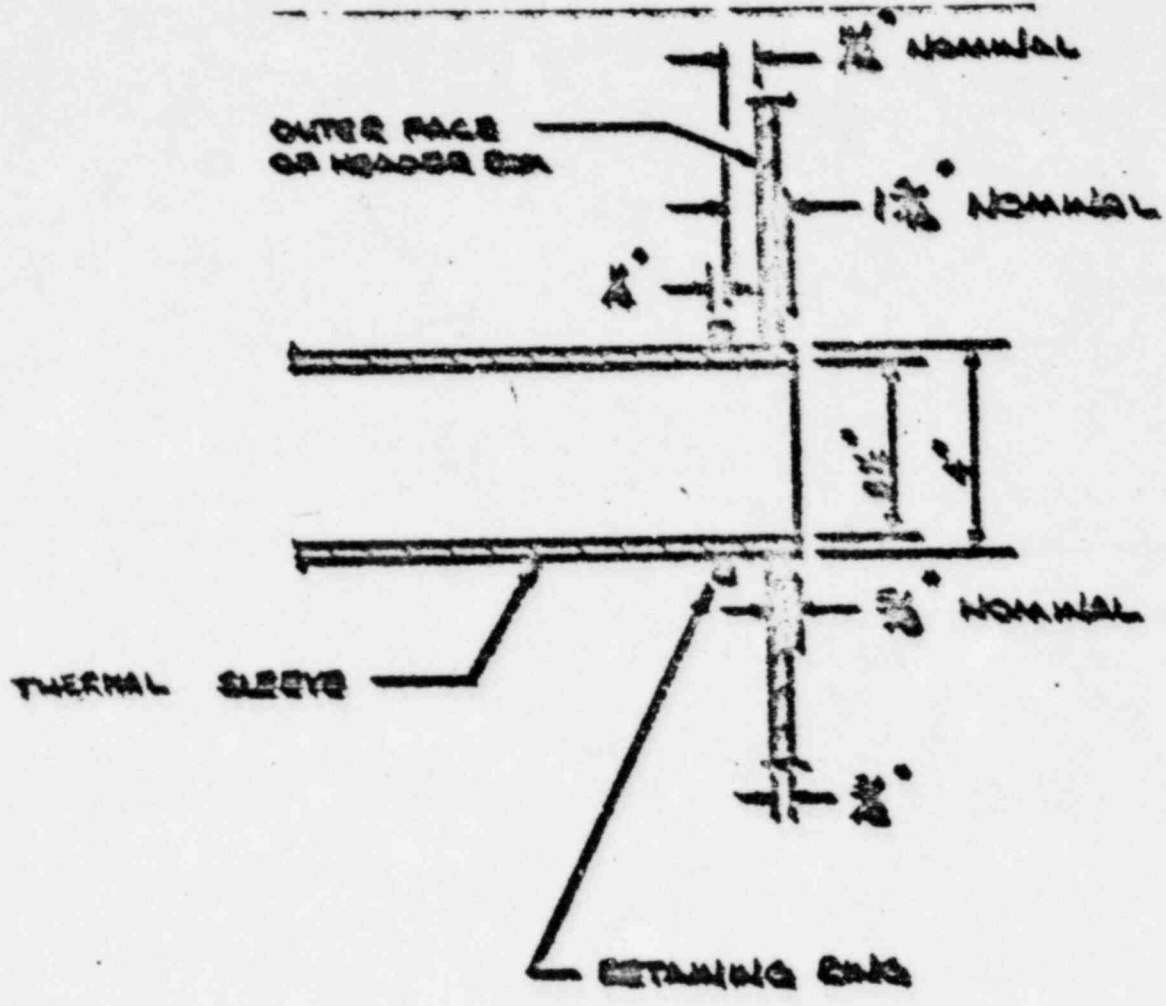
Corrective Action: Toledo Edison is working in connection with contractors and other owners to evaluate possible corrective actions. This report will be updated as information becomes available.

Failure Data: There have been no previously reported incidents of auxiliary feedwater header damage.

LONGITUDINAL SECTION AT DOWEL PIN



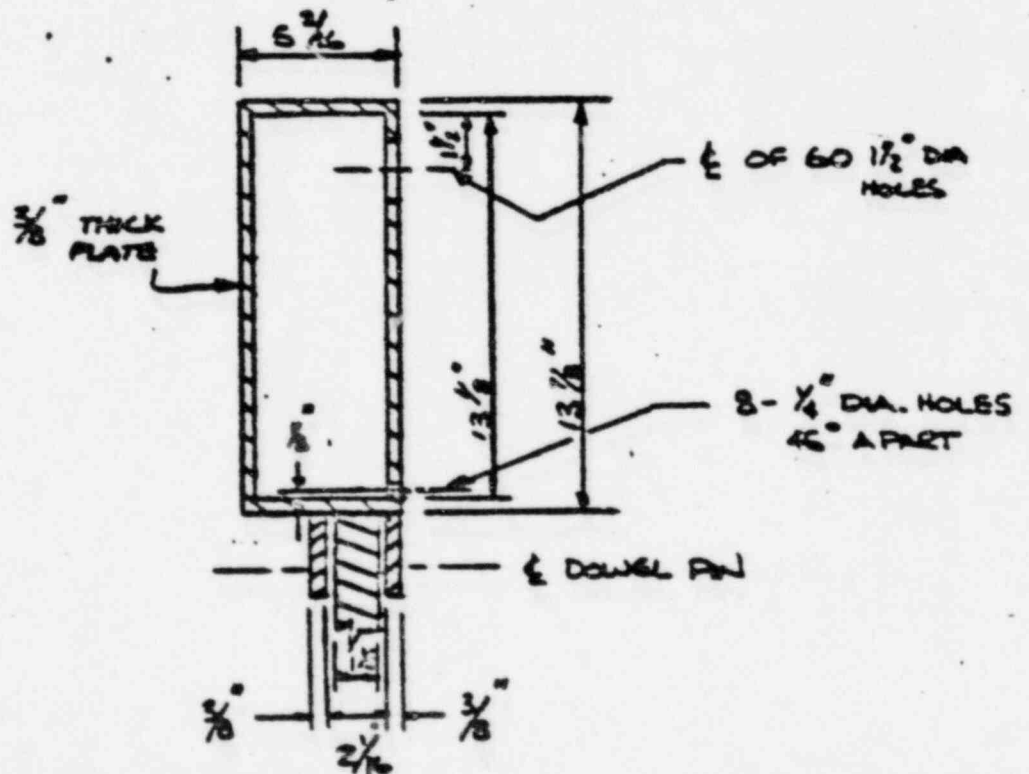
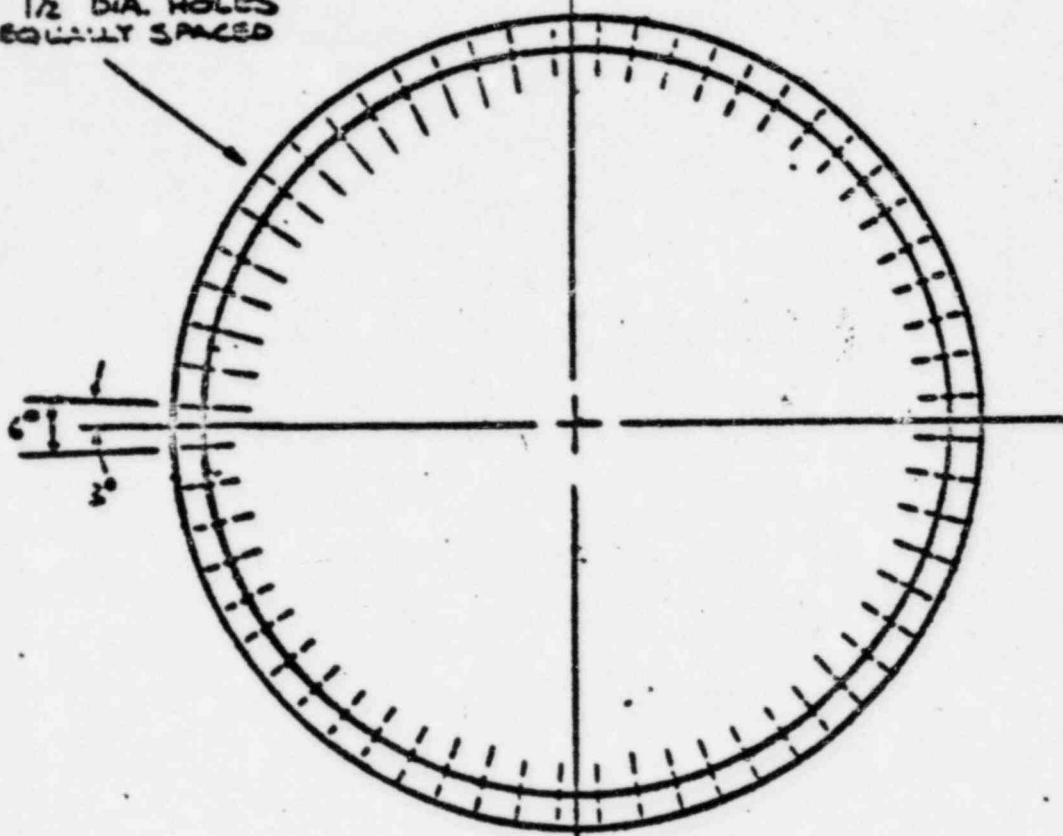
AUXILIARY FEEDWATER SLEEVES/HEADER INTERFACE



LOCATION OF AUXILIARY FEEDWATER

HEADER FLOW HOLES

60 1/2" DIA. HOLES  
EQUALLY SPACED



Enclosure 7



May 24, 1982

Log No. K82-806  
FILE: RR 2 (NP-32-82-03)

Docket No. 50-346  
License No. NPP-3

Mr. James G. Keppler  
Regional Administrator, Region III  
Office of Inspection and Enforcement  
U. S. Nuclear Regulatory Commission  
799 Roosevelt Road  
Glen Ellyn, Illinois 60137

Dear Mr. Keppler:

Enclosed are three copies of Revision 1 to Licensee Event Report 82-016 including the respective supplemental information sheets. The revision to the report is indicated by a "1" in the left margin of each page.

Please replace your previous copies of this report with the attached revision.

Yours truly,

A handwritten signature in cursive script that reads "Terry D. Murray".

Terry D. Murray  
Station Superintendent  
Davis-Besse Nuclear Power Station

TDM/lmr

Enclosure

CC: Mr. Richard DeYoung, Director  
Office of Inspection and Enforcement  
Encl: 30 copies

Mr. Norman Haller, Director  
Office of Management and Program Analysis  
Encl: 3 copies

Mr. Luis Reyes  
Resident Inspector  
Encl: 1 copy

LICENSEE EVENT REPORT

CONTROL BLOCK

PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION

10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (1)  
[MIP-12-82-02] During the steam generator eddy current inspection, it was discovered that some of the steam generator tubes located adjacent to the auxiliary feedwater header showed potential interaction with the header support system. Secondary side runways from Steam Generators 1-1 and 1-2 were removed, and it was discovered by direct visual observation and fiberoptic inspection that the auxiliary feedwater headers were not securely fastened and had experienced damage. Further inspection to the initial submittal are detailed as of May 17, 1982 on the attached Summary Information Report.

STATE OF CALIFORNIA  
NUCLEAR REGULATORY COMMISSION  
SAN FRANCISCO OFFICE  
100 CALIFORNIA STREET  
SAN FRANCISCO, CALIFORNIA 94102  
TELEPHONE (415) 776-6000  
FACSIMILE (415) 776-6000

CAUSE AND CORRECTIVE ACTION (2)  
The damage appears to have been caused by the localized collapse of the tube within the header during injection of cold auxiliary feedwater. Resulting differential pressures across the walls of the headers. Pressured differential could a chance to external auxiliary feedwater headers. This report is based on other information becomes available.

TOLEDO EDISON COMPANY  
DAVIS-BESSE NUCLEAR POWER STATION UNIT ONE  
SUPPLEMENTAL INFORMATION FOR LER NP-32-82-03

DATE OF EVENT: April 19, 1982

FACILITY: Davis-Besse Unit 1

Description of Occurrence: During the steam generator eddy current inspection, it was discovered that some of the steam generator tubes located adjacent to the auxiliary feedwater header showed potential interaction with the header support system. A secondary side manway from Steam Generator 1-1 was removed, and it was determined by direct visual observation and fiberoptic inspection that the auxiliary feedwater header was not securely fastened to the upper shroud and had experienced damage. Inspection of the other steam generator yielded similar results. These inspections have identified:

- (1) Ten peripheral tubes in the 1-2 SG and fourteen peripheral tubes in the 1-1 SG based on eddy current examinations may have been in contact with the AFW header assembly.
- (2) As a result of this potential contact between the tubes and header assembly, three tubes contain pluggable indications.
- (3) The amount of tube ID reduction on the damaged tubes is less than 20 mils.
- (4) The outboard wall of the header is distorted inward (concave) as much as  $\frac{1}{4}$ ".
- (5) Certain header support brackets are bent, and on some the bottom ligaments are torn out or have broken off.
- (6) Dowel pins are missing at six of eight locations inspected. Three dowel pins and two brackets have been retrieved from the steam annulus area in 1-2 SG.
- (7) There is evidence of wear on dowel pins and brackets.
- (8) The auxiliary feedwater nozzle thermal sleeve was not in alignment with the header on Unit #1 (1-1 SG).

See drawings on pages

This incident is being reported in accordance with Technical Specification 5.9.1.4.

Further inspections have been performed since the initial submittal, and the following information provides the status of those inspections as of May 17, 1982.

A detailed video inspection supplemented by selective ultrasonic (UT) and dye penetrant (PT) testing is underway. Video inspections have been performed on both steam generators. To date, the areas inspected include all eight dowel pin/bracket locations (external brackets only) on each header, the header to shroud interface and the bottom, top, and outboard side of each header for its entire circumference.



Ultrasonic and dye penetrant testing was performed on the portion of the header accessible in the manway of steam generator 1-2; a portion of the bottom and outboard plates and the connecting weld was examined. This area was chosen for testing because of its accessibility and because the deformation of the header in this area was more severe than in any other location. The existing auxiliary feedwater piping has been disconnected from the steam generators to allow removal of the auxiliary feedwater thermal sleeves and to provide an additional inspection port. Dye penetrant testing of the inner wall of the auxiliary feedwater header has been conducted through the resulting hole and UT and PT examinations of the auxiliary feedwater nozzle area are being conducted.

The results of the video inspections indicate conditions similar to those previously reported. Six of the eight dowel pins in steam generator 1-2 and two in generator 1-1 are no longer in place. No broken brackets other than the two previously reported on generator 1-2 have been identified. The deformation of the header is not symmetrical; in some locations the outboard wall is indented (concave) as much as  $\frac{1}{2}$ " while in other areas little or no damage is noted. This non-uniform deformation has led to gaps between the header and shroud of as much as half an inch on generator 1-2 with less noticeable gaps in generator 1-1. In steam generator 1-2 the entire header has been rotated approximately  $\frac{1}{2}$  inch with respect to its vertical axis through the center of the steam generator and has shifted approximately  $\frac{1}{2}$ " away from the manway. No corresponding rotation was noted in steam generator 1-1, although a small off-axis shift has occurred.

The entire header is structurally sound. Other than the deformations previously noted, no indications of weld or material cracking have been found. The UT and PT examinations on the header at the manway of steam generator 1-2, and the PT examinations of the inner wall of the header, accessible through the auxiliary feedwater nozzle, support this finding. Preliminary results of the UT and PT examinations of the auxiliary feedwater nozzle area of the shell indicate that no damage occurred as a result of auxiliary feedwater splashing back on the nozzle from the misalignment between the header and the thermal sleeve on steam generator 1-1.

Additional inspections are underway and will be detailed in a future revision to this report.

Designation of Apparent Cause of Occurrence: Although the possible failure mechanisms are still being evaluated the damage appears to have been caused by the localized collapse of the steam bubble within the header during injection of cold auxiliary feedwater, resulting in large differential pressures across the walls of the header. This problem may have been complicated by the large thermal gradients which develop across the walls of the header material during an injection. The new external ring header design will not be subjected to similar failure mechanisms.

Analysis of the Accident: There is no danger to the health and safety of the public or to station personnel. The steam generators are not in use at this time since the unit is shutdown for the refueling outage. There have been no situations of the auxiliary feedwater system where the header was unable to deliver adequate flow.

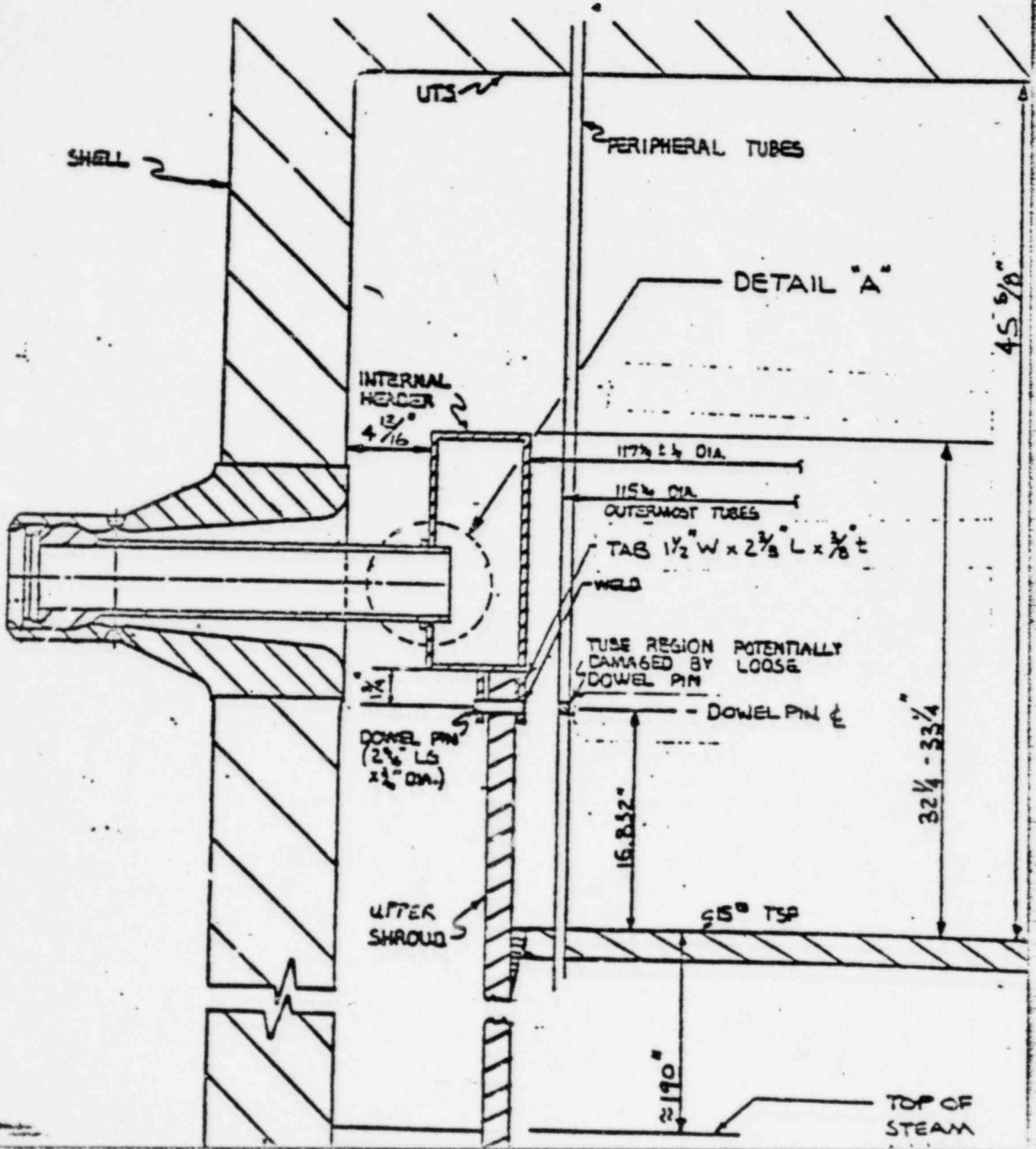
Corrective Action: Two major objectives must be satisfied by the corrective actions taken for this problem. The existing internal auxiliary feedwater header must be restrained to preclude further damage to the steam generator tubes, and a means to inject auxiliary feedwater to the steam generators must be provided. To satisfy these objectives the internal auxiliary feedwater header will be attached to the shroud on which it currently rests, and an external auxiliary feedwater ring will be installed with eight injection nozzles to provide auxiliary feedwater flow. The existing auxiliary feedwater nozzle will be blank flanged and the internal header will not be used for flow distribution.

To stabilize the internal header, eight holes will be drilled through the steam generator shell and shroud near each dowel pin and bracket location. Those dowel pins and brackets which are not or cannot be securely fastened to the header or the shroud will be removed. If any additional dowel pins or internal brackets are found to be missing they will be located and retrieved. The header will then be centered on the shroud and the assembly will be securely fastened to the shroud. Although the exact method by which the header will be attached to the shroud has not yet been identified, several methods are being considered. The concept of header stabilization is still under review. The seismic and accident loads to which the header may be subjected are currently being evaluated to ensure that the header will remain in place.

The eight holes drilled in the steam generator shell and shroud for header stabilization work will also be used as points of injection for an external feedwater ring header. The design of the external header system is similar to the design on earlier B & W units. The design includes an external, split ring header, with eight, fifty inch long J-pipe risers feeding into the steam generator through thermal sleeves, directly into the tube bundle. Auxiliary feedwater will be injected into the steam generator tube bundle approximately three inches higher than in the earlier header design. Since injection at this higher elevation results in an increased susceptibility of the steam generator tubes to flow induced vibrations, compensating measures to reduce the flow velocity into the tube bundle have been taken. Eight injection nozzles will be used at Davis-Besse as opposed to the six in the earlier external header design and the throat diameter on the thermal sleeve will be increased from 2 inches to 2½ inches. This report will be updated as further information becomes available.

Failure Data: There have been no previously reported incidents of auxiliary feedwater header damage.

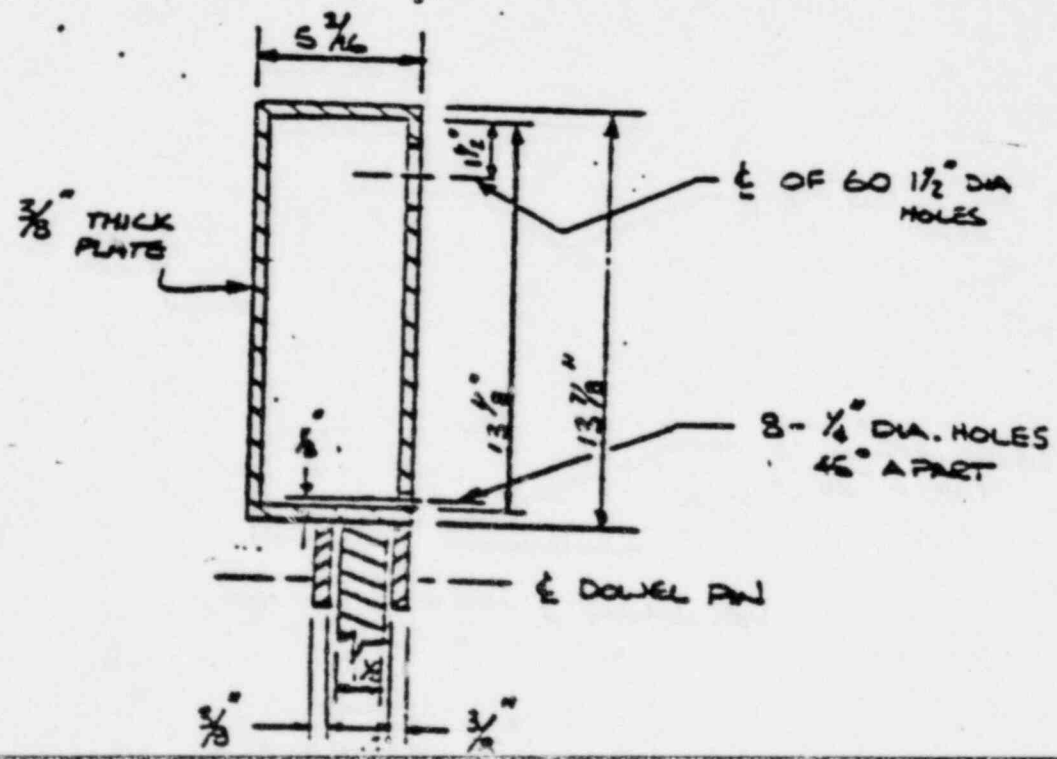
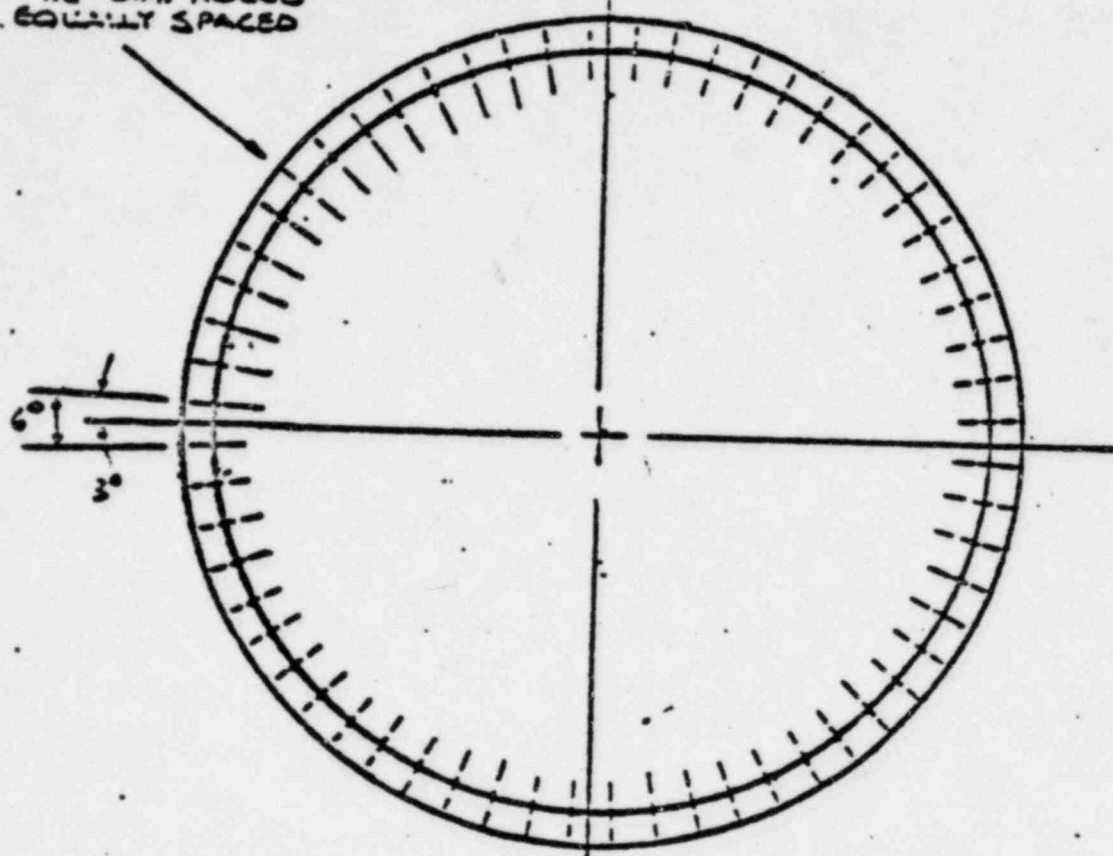
LONGITUDINAL SECTION AT DOWEL PIN



LOCATION OF AUXILIARY FEEDWATER

HEADER FLOW HOLES

60 1/2" DIA. HOLES  
EQUALLY SPACED



Enclosure 8

**DUKE POWER COMPANY**

POWER BUILDING  
422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28202

RECEIVED  
MAY 24 1982  
P12:14

WILLIAM O. PARKER, JR.  
VICE PRESIDENT  
Nuclear Production

May 14, 1982

TELEPHONE AREA 704  
373-4083

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

Subject: Oconee Nuclear Station  
Docket No. 50-287

Dear Mr. O'Reilly:

Please find attached Reportable Occurrence Report RO-287/82-06. This report is submitted pursuant to Oconee Nuclear Station Technical Specification 6.6.2.1.a(9), which concerns the discovery of conditions not specifically considered in the safety analysis report or Technical Specifications that require corrective measures to prevent the existence or development of an unsafe condition, and describes an incident which is considered to be of no significance with respect to its effect on the health and safety of the public.

Duke Power has been working closely with Babcock and Wilcox and with other utilities with B&W designed NSSS which have internal Auxiliary Feedwater (AFW) header systems since the problem was first discovered at Toledo Edison's Davis Besse unit. The affected utility members of the B&W Regulatory Response Group (RRG) have met with the Staff to provide preliminary information. Duke, other affected utilities, and B&W are continuing to define the program to address the problem and provide a long-term solution.

Only approximately one third of each header has been inspected so far with more inspections scheduled in the very near future. Thus, this report is preliminary and incomplete. A supplemental report will be provided by June 14, 1982.

Very truly yours,

*William O. Parker, Jr.*

William O. Parker, Jr.

*WOP*

JFN/php  
Attachment

8206010128.5

OFFICIAL COPY

Mr. James P. O'Reilly, Regional Administrator  
May 14, 1982  
Page 2

cc: Mr. T. M. Novak  
Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Mr. Philip C. Wagner  
Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Mr. W. T. Orders  
NRC Resident Inspector  
Oconee Nuclear Station

B&W Utility Task Force  
Mr. J. Lingenfelter, TECO  
Mr. D. Perry, CPC  
Mr. B. Stivers, SMUD  
Mr. R. H. Ihde, B&W

Document Control Desk  
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Washington, D. C. 20555

Records Center  
Institute of Nuclear Power Operations  
1820 Water Place  
Atlanta, Georgia 30339

Duke Power Company  
Oconee Nuclear Station  
Unit 3

Report Number: RO-287/82-06

Report Date: May 14, 1982

Occurrence Date: April 30, 1982

Facility: Oconee Unit 3, Seneca, South Carolina

Identification of Occurrence: Steam Generator Internal Auxiliary Feedwater (AFW) headers deformed.

Conditions Prior to Occurrence: Refueling Shutdown

Description of Occurrence: Because of the discovery of damage to the OTSG Internal Auxiliary Feedwater (AFW) Headers at Davis Besse (Toledo Edison) and Rancho Seco (Sacramento Municipal Utility District) the decision was made to shut down Unit 3 on the evening of April 23, 1982 and begin a refueling outage earlier than planned. (Units 1 and 2 utilize an external AFW header and are not subject to this damage.) After Unit 3 was cooled and drained, a visual inspection was begun on the evening of April 29, 1982, and it was reported early the next day that damage had been discovered somewhat similar to that reported by Davis Besse and Rancho Seco.

Attachment 1 shows a longitudinal view of the Once Through Steam Generator (OTSG) and indicates the position of the internal AFW header. Attachment 2 shows a longitudinal view of the internal AFW header at the single AFW nozzle position. As indicated in these attachments the internal AFW header is mounted on top of the upper shroud between the 15th Tube Support Plate and the Upper Tube Sheet. The internal AFW ring header is constructed of 3/8 inch plate metal with a 13 inch by 5 inch rectangular cross-section. There is a single AFW nozzle injecting into the header to fill the header with water. The water flows into the steam generator tube bundle through sixty 1 1/2 inch diameter holes located near the top of the header and equally spaced around it. The header rests on the top of the shroud and is attached to it by eight pairs of brackets which are equally spaced around the header. Each bracket (or Tab) measures 1 1/2 inches wide x 2 3/8 inches long x 3/8 inch thick and is welded to the header. A 2 11/16 inches long x 3/4 inch diameter dowel pin is welded to the inner bracket and slip-fit through the shroud and the outer bracket to hold the header in place while allowing for differential thermal movement between the header and the shroud.

A detailed description of the preliminary visual inspection is included in Attachment 3. No effort has been made to date to retrieve the missing dowel pins, but they are expected to be at the bottom of the steam annulus. A more complete and detailed inspection of the outside of the AFW header is currently in progress utilizing a remotely controlled camera device.

Apparent Cause of Occurrence: While analysis is still in progress, the apparent cause of the deformation of the internal auxiliary feedwater header is inadequate design to withstand the large thermal and pressure forces generated when cold auxiliary feedwater is injected into the header. During normal operation the header would be filled with super-heated steam as the header sits in the upper super heat region of the OTSG. When cold auxiliary feedwater (~80°F) is injected into the rectangular header, very large local pressure differences can occur with large steam-water contact areas which cannot be locally compensated for quickly enough through the 1½ inch diameter flow holes. Except for the extra strength weld areas the 3/8 inch plate walls are not reinforced and are apparently inadequate for the loads generated under these conditions. In addition to the possibly large pressure drop areas the header itself experiences very high thermal differences when the cold AFW enters the header and begins to fill from the bottom up and flows around the header from the single nozzle. While the exact failure process is not totally known, the above forces are believed to be the dominant factors.

Analysis of Occurrence: The unit was brought to safe shutdown as a precautionary measure using normal procedures and with no abnormal releases. The visual inspection showed that while the headers were deformed, each auxiliary feedwater nozzle was still aligned in the internal header hole and would still be able to fill the internal header with water. Although deformed, the AFW header would still have functionally provided AFW flow when required.

The visual inspections to date have not revealed any significant damage to any OTSG tubes at Unit 3. The possibility did exist that future AFW injections may have further deformed the header so as to damage tubes on the outer row. The Inconel tubes can sustain considerable contact without significant damage, but if a tube leak had occurred before the unit was shut down, the operations procedure for control of secondary contamination and other operations procedures would have been used to protect the health and safety of the public.

Corrective Action: While exact repair plans are still being developed and are not yet finalized, the reuse of the internal AFW header is not likely. Depending on the findings of additional inspections the current plan is to stabilize the internal header in place and remove the AFW nozzle. The internal header would serve then merely as an extension of the inner shroud and would maintain steam cross flow at present distance above the 15th TSP.

A new external AFW header and nozzle would be installed very similar to that utilized by Oconee Units 1 and 2. Current plans would require drilling at least 6 holes in the Steam Generator and shroud which would be used at first for internal header stabilization and then later as injection ports for the external AFW nozzles. Detailed plans for this operation are still being developed at this time.



LICENSEE EVENT REPORT

EXHIBIT A

CONTROL BLOCK: | | | | | 1 (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

9 1 | S | I | G | N | E | E | 1 | | 2 | 0 | 0 | - | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 3 | 4 | | | | | | | | 4 | | | | 9  
L I C E N S E C O D E      L I C E N S E N U M B E R      L I C E N S E T Y P E      S T A T E

C O N T R Y | 0 1 | R E P O R T S O U R C E | 1 | 0 1 5 1 0 1 0 1 0 2 3 1 7 7 7 0 1 4 1 3 1 0 1 8 1 2 8 | 0 1 5 1 1 1 4 1 8 1 2 | 9  
E V E N T D E S C R I P T I O N A N D P R O B A B L E C O N S E Q U E N C E S (10)      S U B J E C T N U M B E R      E V E N T D A T E      R E P O R T D A T E

On April 30, 1982 a visual inspection of the internal auxiliary feedwater header in both steam generators revealed deformation of the header. Although deformed the header was still functional and, thus, the health and safety of the public were not affected.

9 2 | C | H | | | | 11 | A | | | | X | X | X | X | X | 14 | Z | 13 | Z | 18 | 8 | 2 | 21 | 0 | 1 | 9 | 6 | 24 | / | 0 | 1 | 27 | T | 30 | 0 | 33 | 0 | 34 | A | 35 | 0 | 4 | 0 | 8 | 37 | Y | 40 | N | 43 | N | 45 | R | 0 | 1 | 5 | 47  
F Y S T E M C O D E      C A U S E C O D E      C A U S E S U B C O D E      C O M P O N E N T C O D E      C O M P S U B C O D E      V A L V E S U B C O D E  
L E T T E R R E P O R T N U M B E R      E V E N T Y E A R      S E Q U E N T I A L R E P O R T N O .      O C C U R R E N C E C O D E      R E P O R T T Y P E      R E V I S I O N N O .  
A C T I O N A S S E S S M E N T      I M P A C T O N P L A N T      S H U T D O W N M E T H O D      H O U R S      A T T A C H M E N T S U B M I T T E D      W P R O M F O R M N U M .      P R I M E C O M P S U P P L I E R      C O M P O N E N T M A N U F A C T U R E R

The apparent cause of the header deformation is inadequate design to withstand the thermal and pressure forces generated when cold auxiliary feedwater is injected. Internal header will be stabilized and an external header will be installed.

1 9 | 1 8 | 0 | 0 | 0 | N A | C | Visual inspection      D I S C O V E R Y M E T H O D      D I S C O V E R Y D E S C R I P T I O N      22

1 8 | 2 | 2 | N A | N A      A M O U N T O F A C T I V I T Y      L O C A T I O N O F R E L E A S E      28

1 7 | 1 | 5 | 0 | | | | | E | | | | Maintenance - 90 REM      P E R S O N N E L E X P O S U R E D E S C R I P T I O N      29

1 8 | 0 | 0 | 0 | 0 | N A      P E R S O N N E L I N J U R I E S D E S C R I P T I O N      41

1 9 | 2 | | | | | | | | | | N A      L O S S O F O R D A M A G E T O F A C I L I T Y D E S C R I P T I O N      43

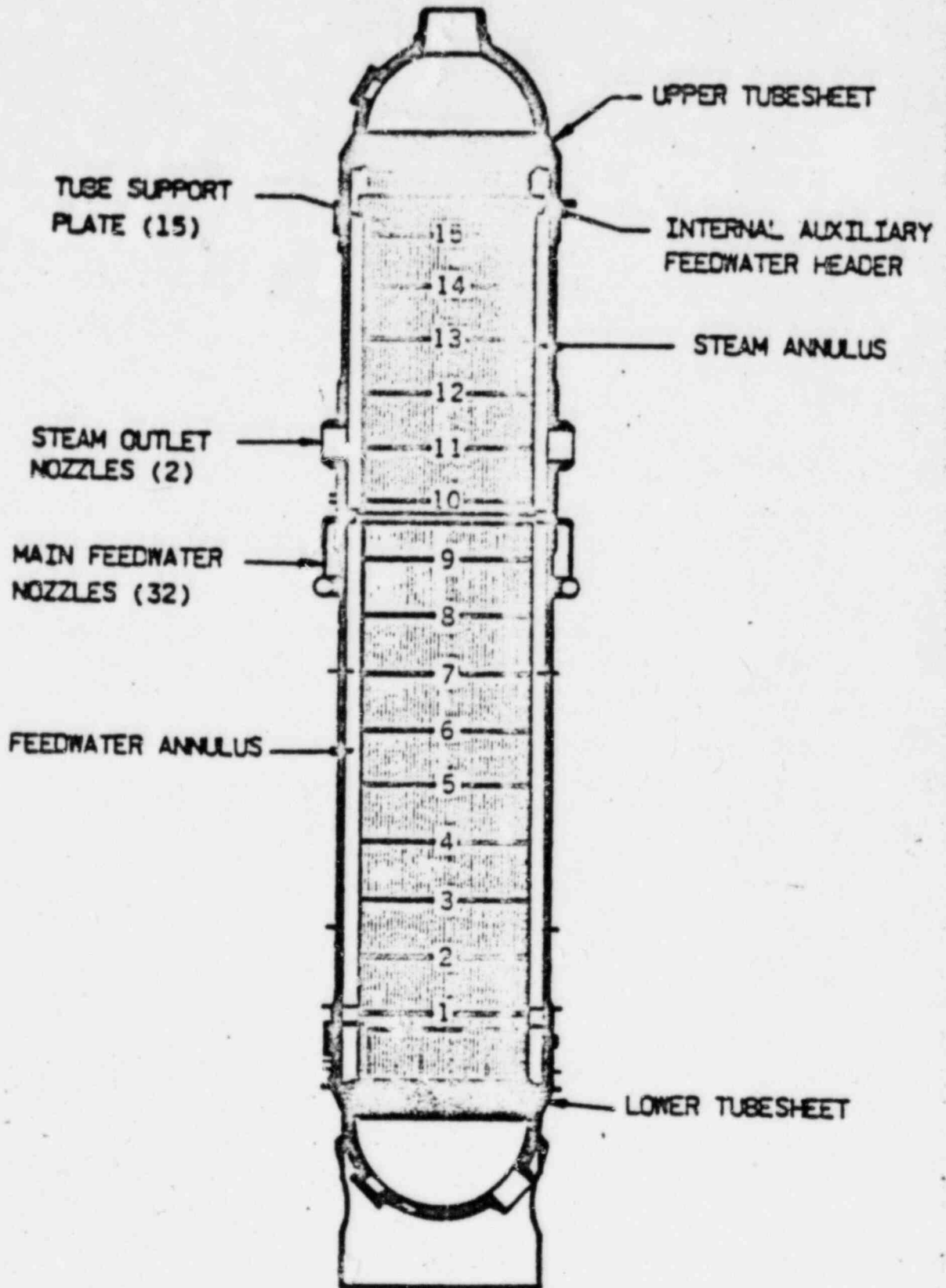
1 9 | Y | | | | | | | | | | Media Response (4/30/82)      P U B L I C I T Y D E S C R I P T I O N      45

N A M E O F P R E P A R E R | John F. Norris      P H O N E | (704) 373-2844      N R C U S E O N L Y

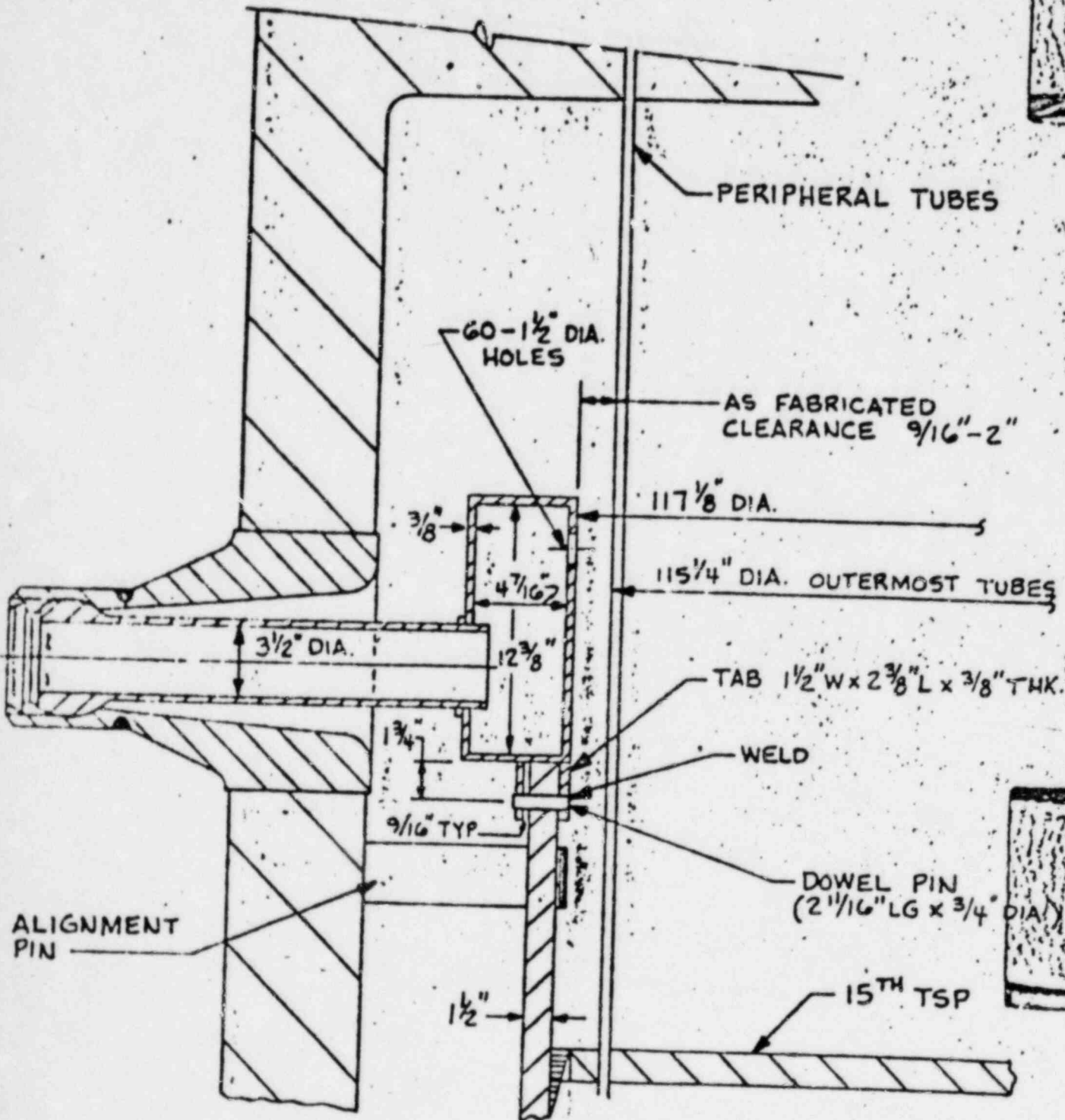
8206010 135

Attachment 1

177FA ONE-THROUGH  
STEAM GENERATOR (OTSG)  
LONGITUDINAL VIEW



# Internal AFW Header Design Longitudinal Section



### Attachment 3

#### Oconee Nuclear Station Unit 3 Auxiliary Feedwater Header Preliminary Visual Inspection

The following is a description of the observations made during the April 29, 1982 AFW header inspections. Figure 1 defines the steam generator axes and the bracket numbering sequence used in this memo.

#### A OTSC

When viewed visually through the manway on the X axis, the header was distorted slightly toward the W axis and was considerably more distorted toward the Y axis. In all instances the distortion of the header resulted in the outer wall of the header being deformed toward the tubes (away from the shell). Approximately ten to fifteen degrees towards the Y axis, there appeared to be a vertical weld in the header. This area of the header was not deformed. The area of the header past this weld appeared to be severely deformed. Measurements were taken at several locations using ID calipers and these are tabulated in Table 1.

Inspections of the bracket/dowel pin locations using fiber optics resulted in the following observations:

Bracket No. 1 - This bracket was intact. The dowel pin was in place and protruding from the bracket approximately  $\frac{1}{4}$  inch towards the shell. There appeared to be some possible wear on the pin, but neither the bracket nor the pin were significantly bent or damaged. In the general area between Bracket No. 1 and Bracket No. 2, a gap of  $< \frac{3}{8}$  inch was observed over a distance of several feet between the bottom of the ring header and the top of the shroud. Tubes could be seen through the gap.

Bracket No. 2 - This bracket was very slightly bent towards the shell. There was no significant wear or ovalization of the bracket hole. The pin was observed to be recessed approximately  $\frac{1}{4}$  inch into the shroud. Some wear was observed on the face of the pin. The bracket header weld was intact.

Bracket No. 3 - This bracket was very slightly bent towards the shell. Slight wear was observed on the bracket hole, but no significant ovalization of the hole was observed. The dowel pin was completely out of the bracket but could be seen recessed into the shroud hole approximately  $\frac{1}{4}$  inch. The pin appeared to be in good shape. The bracket weld was not cracked. This bracket location was also observed from the inside of the header. The inside bracket was bent towards the tubes approximately one inch. The plug weld holding the pin to the bracket was broken. The pin was displaced from the bracket towards the tubes approximately  $\frac{3}{4}$  inch resulting in the pin almost and possibly touching a tube. There appeared to have been some erosion or wear on the tube where the dowel pin was in close proximity to the tube.

Bracket No. 4 - This bracket was bent approximately one inch out at the bottom. Some wear was observed on the dowel pin. The pin appeared to have

moved towards the bundle but was still in the shroud and bracket. The dowel pin and the hole in the bracket were slightly misaligned due to the bracket being bent. The hole in the bracket did not appear to be ovalized or have any significant wear. The bracket weld was intact.

The auxiliary feedwater nozzle was closely examined where it enters the ring header between the X and W axis. The nozzle was in the hole in the header. The distance between the collar on the nozzle and the header was approximately one inch. There appeared to be some erosion on the top of the nozzle and some wear on the nozzle adjacent to the header (between the header and the collar).

### B OTSG

Examination of this header visually through the manway revealed that it was considerably more distorted at the X axis location than the header observed in the A OTSG. There was distortion both in the W and towards the Y direction. No vertical weld locations could be discerned. All distortions again appeared as a bending of the outer wall of the header towards the tubes (or away from the shell). Measurements of the gap between the shell and the header at several locations were performed with ID calipers and these are tabulated in Table 1.

Bracket/dowel pin locations were observed using fiber optics and the following observations were made:

Bracket No. 1 - This bracket was only very slightly bent. However, no pin was observed in the bracket or in the shroud. The pin could possibly have been recessed into the hole and not observed due to the angle that was achievable with the fiber optics. The bracket weld was intact. The bracket hole showed no significant wear or ovalization.

Bracket No. 2 - This bracket was bent only very slightly. There was a slight offset between the bracket hole and the shroud hole. No pin could be observed in either the bracket hole or in the shroud hole. No significant wear or ovalization of the bracket hole was observed. This bracket location was also observed on the inside of the header. The bracket was only slightly bent towards the tubes. The dowel pin was missing. There was no evidence of tube-bracket or tube-dowel pin contact.

Bracket No. 3 - This bracket was bent towards the shell and was the most deformed bracket that we observed during the inspection. It was bent approximately one inch towards the shell. The bracket header weld appeared intact. The hole was not significantly deformed in either the bracket or the shroud. No pin was observed in the bracket or in the shroud.

Bracket No. 4 - This bracket was only slightly bent. There was a slight gap between the header and the shroud through which you could see tubes within the steam generator bundle. Gap was estimated at approximately  $\frac{1}{4}$  inch. The bracket and the shroud hole were again slightly offset with no deformation of the holes. Again no pin was observed in the hole or in the shroud.

The location where the auxiliary feedwater nozzle enters the header was observed using fiber optics. Some apparent wear or erosion was observed in the nozzle. The gap from the header to the inlet on the nozzle appeared to be approximately one and one half inches. The header was obviously deformed at the location where the nozzle entered the header; however, the nozzle is still in the hole in the header.



LICENSEE EVENT REPORT

EXHIBIT A

CONTROL BLOCK \_\_\_\_\_ PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION:

1. LIC: 01151511  
 2. LN: 0101-10101010101-010  
 3. LT: 4111111  
 4. RS: 0510101013112  
 5. ED: 041982  
 6. RD: \_\_\_\_\_

10. EVENT DESCRIPTION AND PROBABLE CONSEQUENCES  
 11. Inspection of the "B" OTSG auxiliary feedwater header ring on 4-19-82 and  
 12. the "A" OTSG ring on 4-20-82 revealed deformations similar to those noted  
 13. at Davis-Besse Unit 1. There were no transients related to this event nor  
 14. was public or plant safety affected. The current outage will be extended  
 15. until satisfactory repairs can be made. A schedule is included in the  
 16. covering attachment.

17. SYSTEM CODE: SIF  
 18. CAUSE CODE: B  
 19. CAUSE SUBCODE: \_\_\_\_\_  
 20. COMPONENT CODE: PIPPIPIXIX  
 21. COMP SUBCODE: C  
 22. VALVE SUBCODE: Z  
 23. SEQ. REPORT NO: 010  
 24. OCCURRENCE CODE: 01  
 25. REPORT TYPE: T  
 26. REVISION: 1  
 27. ACTION TAKEN: Z  
 28. FUTURE ACTION: Z  
 29. EFFECT OR PLANT: C  
 30. SHUTDOWN METHOD: Z  
 31. HOURS: 01120  
 32. ATTACHMENT SUBMITTED: Y  
 33. WPRO4 FORM SUB: Y  
 34. PRIME COMP SUPPLIER: N  
 35. COMPONENT MANUFACTURER: BIC 1115

36. CAUSE DESCRIPTION AND CORRECTIVE ACTIONS  
 37. Modification work to correct this problem has been partially scheduled.  
 38. The new design will include an external aux feed header ring, similar  
 39. to the main feedwater header ring. The old aux feed header will be  
 40. left in place and stabilized to prevent its detachment from the  
 41. cylindrical baffle.

42. FACILITY STATUS: G  
 43. N POWER: 01010  
 44. OTHER STATUS: N/A  
 45. METHOD OF DISCOVERY: LC  
 46. DISCOVERY DESCRIPTION: Visual inspection  
 47. ACTIVITY RELEASED: Z  
 48. CONTENT OF RELEASE: Z  
 49. AMOUNT OF ACTIVITY: N/A  
 50. LOCATION OF RELEASE: N/A  
 51. PERSONNEL EXPOSURES: 01010  
 52. NUMBER: 0  
 53. TYPE: Z  
 54. DESCRIPTION: N/A  
 55. PERSONNEL INJURIES: 01010  
 56. NUMBER: 0  
 57. DESCRIPTION: N/A  
 58. LOSS OF OR DAMAGE TO FACILITY: Z  
 59. TYPE: Z  
 60. DESCRIPTION: N/A  
 61. PUBLIC RELEASE DESCRIPTION: Y  
 62. LOCAL NEWSPAPERS AND WIRE SERVICES: \_\_\_\_\_