UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

AUG 24 1982

Docket No. 50-287

TRIP REPORT - OCONEE NUCLEAR STATION

Following the RETS Meeting held on August 18 and 19, 1982, the Project Manager toured the Oconee Nuclear Station on August 20, 1982 for plant familiarization. Of particular interest during this visit was the modifications to the Emergency Feedwater (EFW) Headers in the Unit 3 steam generators (SGs) and the recent extraction steam line break.

Duke has onsite, a full size mock-up of the involved section of the SG, including an actual internal header which was purchased from Toledo Edison Company. The mock-up is being used for welder qualification of the repair technique developed to repair the 3A SG. The repairs to the 3B SG were similar to those used at Davis-Besse and Rancho Seco but extensive cracking in the welds of the internal header in 3A requires a more elaborate repair. Attached as Enclosures 1 and 2 are Duke provided information papers which describe some of the analyses performed on removed sections of the SG headers and the results of crack examinations conducted earlier. Note that these papers are preliminary and for information only. A complete description will be provided by Duke on approximately September 1, 1982.

After examining the mock-up for familiarization, the Project Manager entered containment to view the status of both 3A and 3B SGs. The internal repairs have been completed on 3B; the external header is installed, with risers connected to the shell, and only final connections of the EFW line to the header remain to be completed. The work on 3A is proceeding with 3 of the 15 bulkhead sections completed; all six, 5 inch OD riser holes are drilled with the flange connections on the shell drilled and tapped but not faced. The header is being rotated so the header repairs can be conducted through the single, larger inspection port. When all 15 of the bulkhead locations are completed, the header will be lowered back onto the shroud and stabilized to it by direct fillet welds and gusset plates similar to those used on the other affected SGs. These welds will be performed through the six AFW riser connection holes. Enclosure 3 contains copies of the bulkheaded box repair configuration and the final positioning locations.

A Region II Inspector (B. Crowley) conducted inspections, including the SG repair work, during the week of August 16, 1982 and held an exit interview on August 20, 1982 attended by the PM. After inspecting SG repair procedures, QA and the work area only one area was identified for improvement. The present procedures do not require a continuing clean up of the work area, and although this is been conducted it was considered advisable to add into the procedures. Duke agreed to this change.

Duke plans to have all repair work on the SGs and any remaining outage work items completed to support a return to operation of Unit 3 by October 13, 1982. All reactor work (refueling, 10 year ISI and thermal shield bolt replacement) has been completed and the RPV head is reinstalled.

Philip C. Wagner

Philip C. Wagner, Project Manager
Operating Reactors Branch #4
Division of Licensing

Enclosures:
1. 8/5/82 Memo fm. O. Frye to C. Hendrix
2. Information Papers fm. DPC
3. Bulkheaded Box Repair Configuration

cc w/enclosures:
DEisenhut
GLainas
JStolz
MPadovan
ADe Agazio (4)

ORB#4:DL

MEETING SUMMARY DISTRIBUTION

Licensee: Duke Power Company

* Copies also sent to those people on service (cc) list for subject plant(s).

Docket File
NRC PDR
L PDR
ORB#4 Rdg
GLainas
JStolz
Project Manager -PWagner
Licensing Assistant-RIngram
OELD
Heltemes, AEOD
IE
SShowe (PWR) or CThayer (BWR), IE
Meeting Summary File-ORB#4
RFraley, ACRS-10
Program Support Branch

ORAB, Rm. 542
BGrimes, DEP
SSchwartz, DEP
SRamos, EPDB
FPagano, EPLB

Enclosure 1

August 5, 1982

FOR INFORMATION ONLY

Memo To: C. W. Hendrix

Attn: D. E. Whitaker

Subject: Oconee Aux. Feedwater Header
File: OS-211.04

Sections were received from Oconee Unit 3 auxiliary feedwater headers. The sections were taken from the lower outside corner weld of the headers. The samples were not identified but are believed to be representative of both the A and B steam generators. The headers were fabricated from plate by welding at each of the four corners of a rectangular cross section. The welds have failed in service.

The weld shown in figure 1 is thought to be from generator A. It is essentially a full pentration weld of good quality at the location examined. The plate appears to be a plain low carbon steel of 3/8" nominal thickness. The hardness of the two parts shown in figure 1 is in the range HR_b 71-86. The failure propagated in the heat affected zone immediately adjacent to the weld.

The weld shown in figure 2 is believed to be from steam generator A DEW. The total weld thickness in this part is approximately 0.350", however, the depth of fusion is only about 0.200" on the side that broke. There are also lack of fusion and lack of penetration defects at the edge of the weld opposite the failure. The original machined weld preparation can be seen at the root of the weld. The base material has the same appearance as that of figure 1. The base metal hardness of the two parts is in the range HR_b 68-78.

Figure 3 shows the typical weld, heat affected zone, and base metal microstructures. A knoop microhardness transverse is also shown. The microhardness is typical of what is expected in the area of a weld in low carbon steel and agrees with the macrohardness numbers reported above.

CR Frye

C. R. Frye
Associate Engineer

CRF/rgg

xc: W. D. Adair
T. J. Bowling

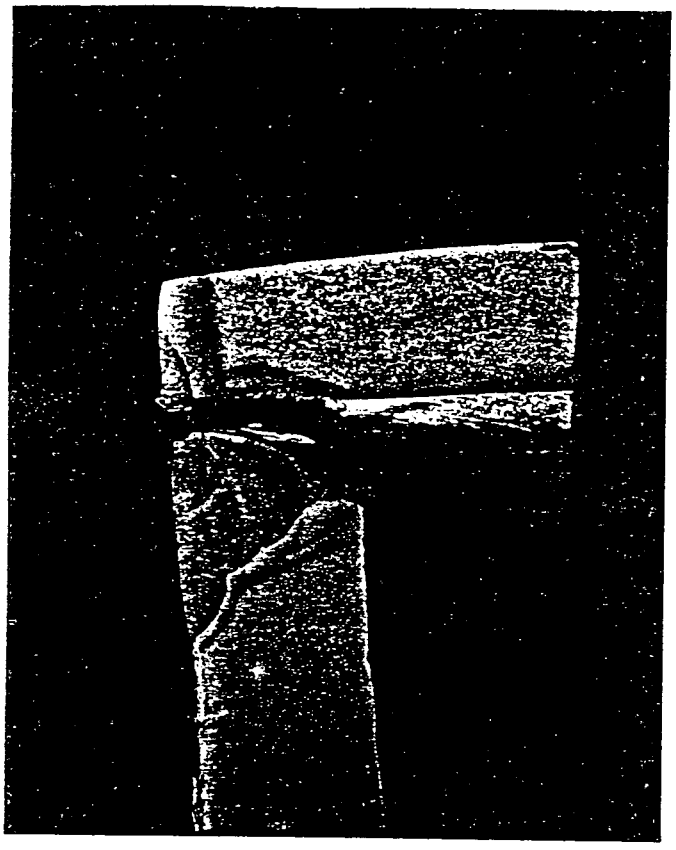


Figure 1

Section of weld from aux. feedwater header Oconee Unit 3 A generator

FOR INFORMATION ONLY

Approx. 2 1/2 X

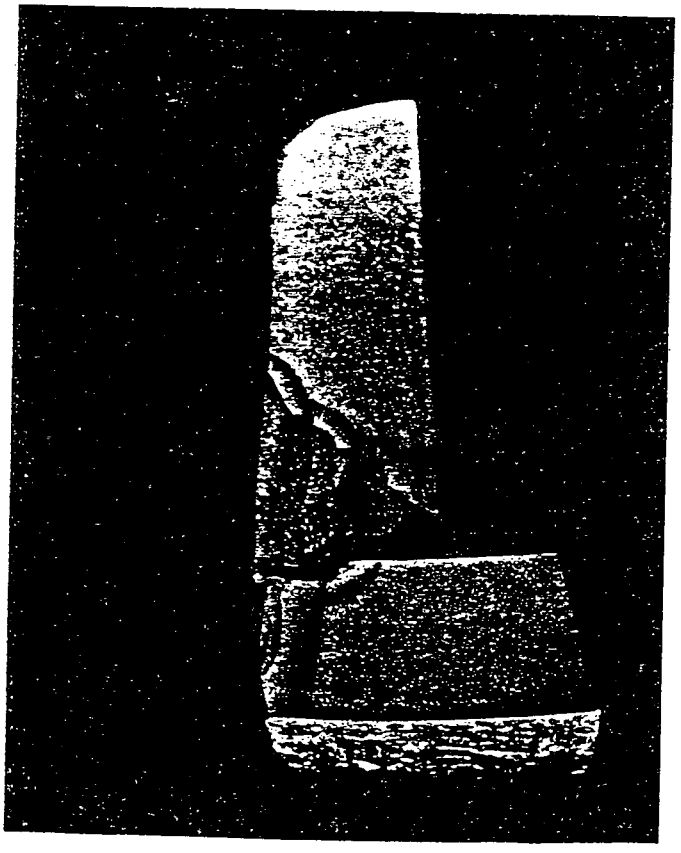


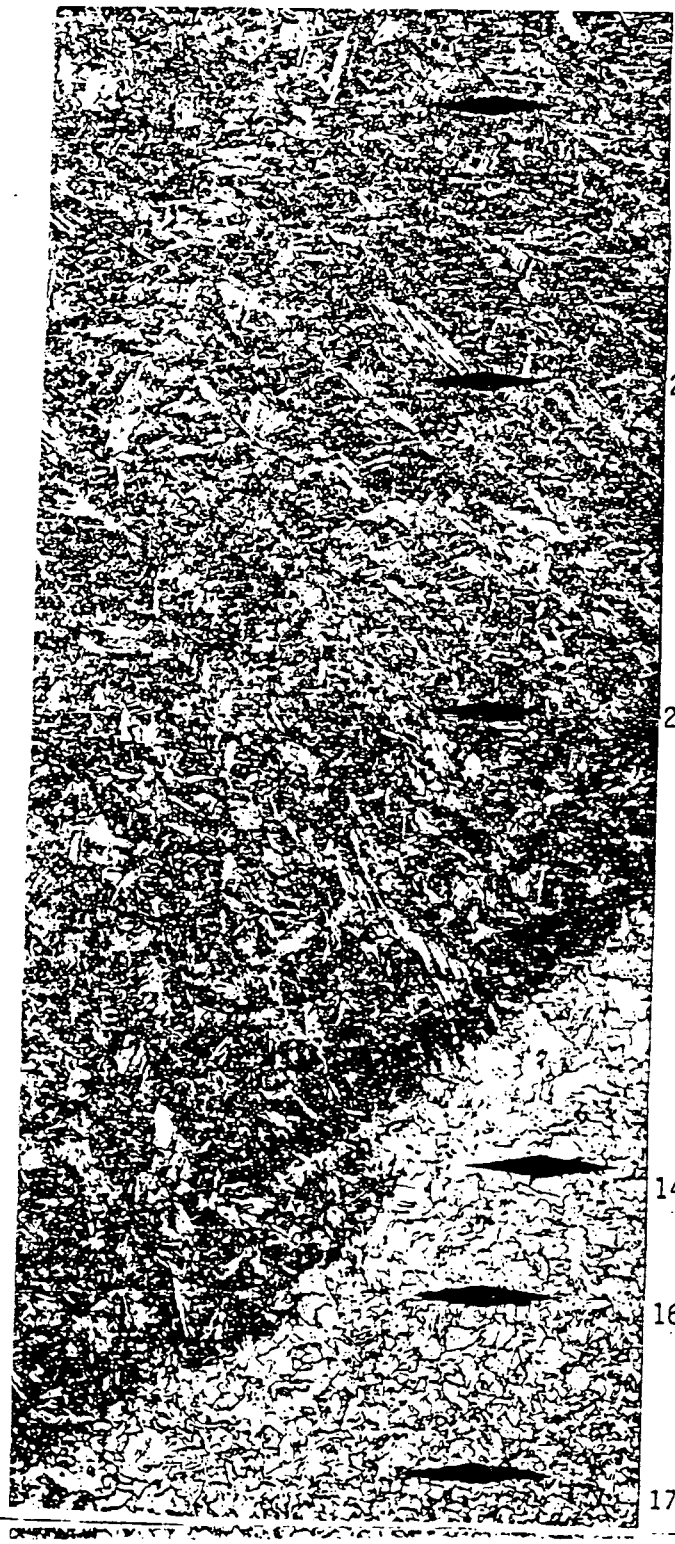
Figure 2

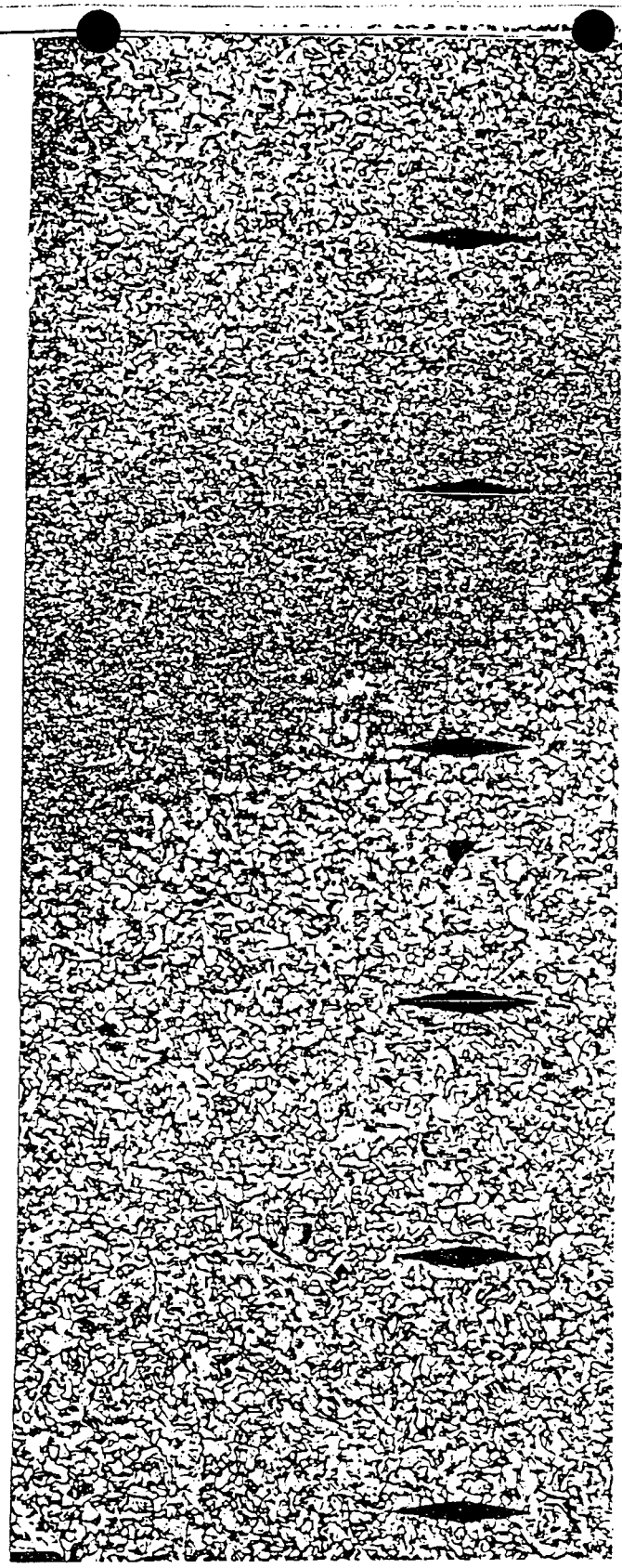
Section of weld from aux. feedwater header Oconee Unit 3 ~~B~~ A generator

Approx. 2 1/2 X

Figure 3

Weld, heat affected zone, and base metal from typical area of weld. Black diamonds and corresponding numbers are KHN 500 g.





NOTICE

THE ATTACHED DOCUMENT CONTAINS "PROPRIETARY INFORMATION" AND SHOULD BE HANDLED AS NRC "OFFICIAL USE ONLY" INFORMATION. IT SHOULD NOT BE DISCUSSED OR MADE AVAILABLE TO ANY PERSON NOT REQUIRING SUCH INFORMATION IN THE CONDUCT OF OFFICIAL BUSINESS AND SHOULD BE STORED, TRANSFERRED, AND DISPOSED OF BY EACH RECIPIENT IN A MANNER WHICH WILL ASSURE THAT ITS CONTENTS ARE NOT MADE AVAILABLE TO UNAUTHORIZED PERSONS.

COPY NO. _____

DOCKET NO. _____

CONTROL NO. _____

REPORT NO. _____

REC'D W/LTR DTD. _____

NRC Form 190
(4-78)