

CONTROL BLOCK: [] [] [] [] [] []

PLEASE PRINT ALL REQUIRED INFORMATION

LICENSEE NAME: **ILDRS** LICENSE NUMBER: **00-000000-00** LICENSE TYPE: **41111** EVENT TYPE: **01**

CATEGORY: **CONT** REPORT TYPE: **T** REPORT SOURCE: **L** DOCKET NUMBER: **050-0237** EVENT DATE: **040676** REPORT DATE: **071376**

EVENT DESCRIPTION

02 AN INSERVICE INSPECTION OF THE UNIT-2 ISOLATION CONDENSER SAFE-END
03 REVEALED AN UNACCEPTABLE ULTRASONIC INDICATION. THE 14-INCH DIAMETER SAFE-END
04 WAS SUBSEQUENTLY REMOVED AND A DYE-PENETRANT EXAM OF THE INNER-DIAMETER
05 SURFACE CONFIRMED THE EXISTENCE OF CRACKS. THE CRACKS WERE NOT
06 THROUGH-WALL AND IN NO WAY AFFECTED SYSTEM OPERATION. SIMILAR INSTANCES

CONT. ON ATTACHED SHEET

SYSTEM CODE: **CE** CAUSE CODE: **E** COMPONENT CODE: **PIPEXX** PRIME COMPONENT SUPPLIER: **N** COMPONENT MANUFACTURER: **B015** VIOLATION: **N**

CAUSE DESCRIPTION

08 THE CRACKED SAFE-END WAS REMOVED AND SENT TO BATTELLE COLUMBUS
09 LABORATORIES FOR METALLOGRAPHIC ANALYSIS. THE RESULTS REVEALED THE
10 EXISTENCE OF ONE CIRCUMFERENTIALLY-ORIENTED CRACK AT THE 7:00 POSITION

CONT. ON ATTACHED SHEET

FACILITY STATUS: **H** % POWER: **000** OTHER STATUS: **NA** METHOD OF DISCOVERY: **B** DISCOVERY DESCRIPTION: **NA**

FORM OF ACTIVITY RELEASED: **Z** CONTENT OF RELEASE: **Z** AMOUNT OF ACTIVITY: **NA** LOCATION OF RELEASE: **NA**

PERSONNEL EXPOSURES

NUMBER: **000** TYPE: **Z** DESCRIPTION: **NA**

PERSONNEL INJURIES

NUMBER: **000** DESCRIPTION: **NA**

OFFSITE CONSEQUENCES

15 **NA**

LOSS OR DAMAGE TO FACILITY

TYPE: **Z** DESCRIPTION: **NA**

PUBLICITY

17 **NA**

ADDITIONAL FACTORS

18 **NA**

19

NAME: **JEFF MARTIN** PHONE: **421**

8103190022

EVENT DESCRIPTION (Continued)

of cracking in furnace-sensitized stainless steel forgings have occurred on both Unit-2 core spray loops as well as on the HPCI steam line.

The safe-end (which was SA-182 F316 stainless steel) was replaced with one forged from SA-182 F316L stainless steel. (50-237/1976-21)

CAUSE DESCRIPTION (Continued)

and four axially-oriented cracks at the 1:00, 4:00, 4:45, and 5:00 positions. The depth of the circumferential crack was found to be 0.261 inches, while the axial cracks ranged in depth from 0.255 to 0.500 inches. The circumferential crack was located approximately 3/8 inch from the safe-end-to-pipe weld and was 0.60 inches long at the I.D. surface. The axial cracks ranged from 0.23 to 0.43 inches in length and extended to within 1/16 inch of the safe-end-to-pipe weld.

The metallographic examination revealed similar features in both the axial and circumferential cracks: initiation at the I. D. surface, and intergranular propagation in a heavily-sensitized microstructure. Microprobe analyses of fracture surfaces and cross sections of the cracks indicated no chlorides, fluorides, sulfides, or other possible corrosives. Moderate residual stresses from welding and possibly from inner surface grinding (up to 5 mils of cold working were observed) may also have been contributing factors. The mechanism of cracking is the same as that experienced in the HPCI safe-end, the 10-inch core spray piping, and the 4-inch recirculation bypass piping.

The cracked safe-end was manufactured from SA-182 F316 stainless steel and was unclad. It was approximately 5 inches long, with a 14-inch O.D. at the piping end (0.56-inch wall thickness) and a 16-inch O.D. at the nozzle end (1.08-inch wall thickness). The safe-end was furnace-sensitized during the post-weld stress relief treatment of the pressure vessel.



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BBS Ltr. #76-531

July 14, 1976

Mr. James G. Keppler, Regional Director
 Directorate of Regulatory Operations - Region III
 U. S. Nuclear Regulatory Commission
 799 Roosevelt Road
 Glen Ellyn, Illinois 60137

Enclosed please find an update report to Reportable Occurrence report number 50-237/1976-21. This report is being submitted to your office in accordance with the Dresden Nuclear Power Station Technical Specifications, Section 6.6.B.

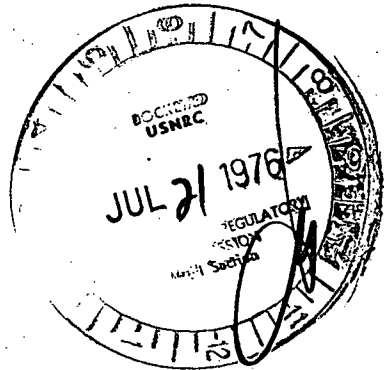

 B. B. Stephenson
 Station Superintendent
 Dresden Nuclear Power Station

BBS:jo

Enclosure

cc: Director of Inspection & Enforcement
 Director of Management Information & Program Control
 File/NRC

Regulatory Docket File



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