



**Commonwealth Edison**  
 One First National Plaza, Chicago, Illinois  
 Address Reply to: Post Office Box 767  
 Chicago, Illinois 60690

Regulatory

Cy

BBS Ltr. #915-74

Dresden Nuclear Power Station  
 R. R. #1  
 Morris, Illinois 60460  
 December 20, 1974



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

**SUBJECT: REPORT OF ABNORMAL OCCURRENCE PER SECTION 6.6.A OF THE TECHNICAL SPECIFICATIONS**  
**FOUR INCH RECIRCULATION BYPASS LINE CRACK**

- References:
- 1) Regulatory Guide 1.16 Rev. 1 Appendix A
  - 2) Notification of Region III of AEC Regulatory Operations  
 Telephone: Mr. P. Johnson, 1030 hours on December 13, 1974  
 Telegram: Mr. J. Keppler, 0920 hours on December 16, 1974
  - 3) Drawing Number: P & ID M-26

Report Number: 50-237/1974-77

Report Date: December 20, 1974

Occurrence Date: December 13, 1974

Facility: Dresden Nuclear Power Station, Morris, Illinois



**IDENTIFICATION OF OCCURRENCE**

On December 13, 1974, a leak was discovered on line 2-0203B-4-"A", bypass around recirculation pump discharge valve, of "B" Recirculation system. This represents an abnormal degradation of a boundary designed to contain radioactive material.

**CONDITIONS PRIOR TO OCCURRENCE**

Prior to the occurrence, the reactor was locked in the shutdown mode. At this time, Unit 2 was into its third refueling outage.

13044

DEC 23 1974  
 8103060741

DESCRIPTION OF OCCURRENCE

At 1100 hours on December 13, 1974, Unit 2 was shutdown for its third refueling outage. With inservice inspection underway as per Technical Specification, a leak was discovered on 2B recirculation loop at the connection of the bypass line, 2-0203B-4"-A, to the discharge line of the recirc. pump, 2-201B-28"-A. The line was cracked at the point where the line is welded to a 4x6 weld-o-let. This weld is located downstream of the bypass valve and cannot be isolated from the reactor vessel.

A visual inspection was made of the area and 2 pinhole leaks about 8 O'clock and a "weep" at 6 O'clock along the circumference of the pipe were found. Subsequent ultrasonic and radiograph testing (volumetric examinations) confirmed the existence of cracks that started from the I.D. of the pipe at 2 O'clock and ran to about 6 O'clock where the weep existed. Other cracks appeared at 7 O'clock and ran through 9 O'clock. These cracks broke the surface (O.D.) at approximately 8 O'clock.

DESIGNATION OF APPARENT CAUSE OF OCCURRENCE

At this time, the apparent cause of the failure is unknown. These cracks are similiar to previous cracks found on Unit 2 bypass lines in September 1974. Subsequent to the failure of those lines, pieces of the cracked pipe were sent out for analysis. Preliminary reports indicate that the mode of failure of both welds was due to intergranular stress corrosion cracking. The initiation phase of the corrosion cracking is still under evaluation.

The laboratories which performed the analysis on the failed sections of pipe will submit reports of there findings in the next several weeks.

With regard to the present failure, a followup letter will be written when the mode of failure is determined.

ANALYSIS OF OCCURRENCE

There were no safety consequences to the public or plant personnel as a result of this occurrence. The cracks were detected during a scheduled inspection with the unit shutdown. During the operating period from September thru October 1974, all emergency core cooling systems were operable, if required. During the shutdown period from November to the present, the LPCI and core spray systems were available to provide core cooling.

CORRECTIVE ACTION

Upon discovery of this crack, the remaining welds in A and B recirc bypass lines were ultrasonically tested. As a result of these examinations, additional welds have been noted to have indications which must be evaluated

To provide additional information, all welds on Unit 2 bypass lines will be radiographed to substantiate ultrasonic evaluations.

The ultrasonic examinations conducted on Unit 3 subsequent to the discovery of the cracks on Unit 2 in September were reexamined for indications. The reevaluation did not show any detectable indications present in the Unit 3 bypass piping.

As a result of the most recent Unit 2 crack discovery, Unit 3 bypass piping will be re-examined during the next extended outage.

The action to be taken to correct the failure is under evaluation. A repair procedure detailing the proposed corrective action will be submitted to the AEC in the near future. The corrective action to be taken to prevent recurrence is also under evaluation and will be detailed in a followup letter.

#### FAILURE DATA

The previous failures of similiar nature, as stated above, were discovered on September 13 and 14, 1974 on bypass line 2-0203B-4" and 2-0203H-4"-A, respectively,

The pipe that failed in all cases was 304 stainless steel, four inch diameter with a thickness of 0.337 inches.

Sincerely,



B. B. Stephenson

BBS:smp