

Certified By *mdf*

## PHILADELPHIA ELECTRIC COMPANY

PEACH BOTTOM ATOMIC POWER STATION

N. D. 1, BOX 288

DELTA, PENNSYLVANIA 17214

November 5, 1982

Mr. R. C. Haynes  
Administrator  
U.S. Nuclear Regulatory Commission  
Region I  
631 Park Avenue  
King of Prussia, PA 19406

SUBJECT: REPORTABLE OCCURRENCE - PROMPT NOTIFICATION

Confirming W. T. Ullrich's conversation with R. Blough, Region I,  
United States Nuclear Regulatory Commission on 11-4-82.

Reference: Docket No. 50-278  
Peach Bottom Unit 3  
Technical Specification 3.8.B

Report No. 3-82-22/1P  
Occurrence Date: 11-4-82

Identification of Occurrence:

On November 4, 1982, the results of an investigation into an increase  
the Unit 3 Reactor Building Closed Cooling Water radiation monitor  
determined that the 3D RHR heat exchanger had leaked slightly radioactive  
water into the Unit 3 intake structure via the high pressure service  
water piping during the period of October 25 through November 2, 1982.

Conditions Prior to Occurrence:

Between October 25 and November 2, Unit 3 operated at essentially full  
load. At 4:00 AM on October 25, the 3D high pressure service water  
pump was tested in accordance with the normal surveillance test schedu  
It appears that the discharge check valve on this pump failed to close  
fully following this surveillance test. Later, on October 25 the Reactor  
Building closed water system radiation monitor indication began slowly  
increasing from a normal value of 50 cps. The investigation of this  
increase eventually determined that a leak path existed for slightly  
contaminated condensate transfer system water through a leak in the 3D RHR heat exch.  
backwards through the high pressure service water piping through the  
partially opened check valve and 3D high pressure service water pump to  
the intake structure. This leakage was terminated on November 2 when  
the 3B and 3D RHR heat exchangers were isolated on the high pressure  
service water side as part of this investigation.

Apparent Cause of Occurrence:

3D RHR heat exchanger leak.

Analysis of Occurrence:

Sampling at various locations during this investigation indicates that the best estimate of the activity of the water reaching the intake structure is  $9.09 \times 10^{-5}$  microcuries per ml. The leak rate was measured at 5.28 gpm. At the intake structure, this water was immediately diluted with approximately 24,000 gpm of service water. This was further diluted by approximately  $10^6$  gallons per minute of circulating water prior to discharge into the Susquehanna River. Based on the specific activity, the diluted activity of the water reaching the Susquehanna River was  $4.8 \times 10^{-10}$  microcuries per milliliter. Therefore, approximately 2.62 millicuries per day were discharged to the river. Total release from October 25 thru November 2 is estimated to be 22.8 millicuries. Since the concentration is undetectable and the total activity released is small, no environmental affects are anticipated.

Our investigation has not determined if the RHR heat exchanger leak began on October 25. If the leak existed before this date, water of similar radioactive concentration could have reached the discharge canal via the high pressure service water system discharge piping. There is insufficient evidence to determine if this leak was present prior to October 25 or if radioactive water was discharged via this flow path prior to October 25.

Corrective Action:

The unmonitored release was terminated at 9:00 PM on November 2 during this investigation. At that time, the high pressure service water was isolated from the 3D RHR heat exchanger and the heat exchanger drain valve was opened. Water draining from the heat exchanger after 12 hours had activity levels similar to that used to calculate the off-site release. Final corrective action will be taken when repairs to the heat exchanger are completed. In addition, routine radiation surveys of the high pressure service water piping on the inlet side of the heat exchanger and discharge side of the heat exchanger will be initiated to provide an early indication of future similar problems.

Previous Occurrence:

2-76-19/32.

Very truly yours,

  
W. T. Ullrich  
Station Superintendent