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May 14, 1982

Mr. R. C. Haynes, Director  
Region I  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
631 Park Avenue  
King of Prussia, PA 19406

SUBJECT: REPORTABLE OCCURRENCE - PROMPT NOTIFICATION

Confirming Allen Hilsmeier's conversation with Mr. Nimitz, Region  
United States Nuclear Regulatory Commission on 5/13/82.

Reference: Docket No. 50-277  
Peach Bottom Unit 2  
10CFR20.403(b)

Report No. 2-82-11/1P  
Occurrence Date: 5/13/82

Identification of Occurrence:

Significant shoulder contamination.

Conditions Prior to Occurrence:

Unit 2 shutdown for refueling maintenance outage.

Apparent Cause of Occurrence:

Unexpected high levels of smearable contamination within heat exchanger tubes resulted in transport of this contamination to the anti-Cs worn by the individuals handling the Eddycurrent probe. These high levels of contamination penetrated the anti-Cs and caused contamination of the skin.

Analysis of Occurrence:

In preparation for maintenance on a Unit 2 reactor water cleanup nonregenerative heat exchanger, chemical decontamination of the system was performed. Following chemical decontamination, the heat exchanger tube sheets were exposed, and Eddycurrent testing of individual tubes was initiated in order to determine the condition of the heat exchanger tubes as well as to identify the source of leakage. Based on the smearable contamination on the heat exchanger tube sheet, protective clothing was specified. This included a fresh air respirator, as well as anti-contamination clothing.

Eddycurrent testing of the upper heat exchanger was performed on 5/13/82. Unanticipated high levels of smearable contamination within the tubes was transported via the Eddycurrent probe from the tube internals to the room, including the outside of the protective clothing worn by the individuals moving the detector in and out of the heat exchanger. Upon exiting the heat exchanger area, the individuals removed their protective clothing in accordance with procedures. However, because of the high level of contamination on the outside of the clothing, some skin contamination to three individuals occurred. This was detected by the individuals while frisking immediately after removal of their protective clothing. The maximum skin contamination levels identified were 72 mrad/hr. beta, and 2 mrem/hr. gamma in the area of the individuals' shoulders. Two other individuals experienced contamination of lower values. All three individuals were decontaminated to less than 100 counts per minute. A fourth individual involved in doing this work had unidentifiable skin contamination.

All four individuals were whole body counted on 5/13/82. The individual with the highest levels of contamination showed whole body reads 55% of the investigatory level or 3% of the maximum permissible body burden. The maximum whole body counter values of 154% of the investigatory level or 8% of the maximum permissible body burden were identified on another individual.

Dose assessment calculations, as well as additional investigation regarding the significance of this event are in progress.

Corrective Action:

The four individuals involved in this occurrence have been restricted from entering radiation areas until the investigation is completed and the dose assessment calculations are finalized. Work on the heat exchanger has been stopped until health physics requirements can be reevaluated.

Very truly yours,



W. T. Ullrich  
Station Superintendent

WTU:llh