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SHIELDS L. DALTROFF
VICE PRESIDENT
ELECTRIC PRODUCTION

February 28, 1985

Docket Nos. 50-277
50-278

Inspection Report Nos. 50-277/84-42
50-278/84-34

Mr. Thomas T. Martin, Director
Division of Engineering and Technical Programs
U.S. Nuclear Regulatory Commission
Region I
631 Park Avenue
King of Prussia, PA 19406

Dear Mr. Martin:

Your letter dated January 29, 1985, forwarded Combined Inspection Report 50-277/84-42 and 50-278/84-34. Appendix A addresses one item which does not appear to be in full compliance with Nuclear Regulatory Commission requirements. This item is restated below along with our response.

> 10 CFR 20.311(d)(3) requires a quality control program to assure compliance with 10 CFR 61.56. 10 CFR 61.56(a)(5) requires, in part, that waste not be capable of generating fumes or vapors harmful to persons transporting, handling or disposing of the waste.
>
> Contrary to these requirements, on December 13, 1984, a cask containing solidified radioactive waste from Unit No. 2 released a flammable gas and a radioactive aerosol fume resulting in measureable contamination and intake of radioactive materials by two workers preparing the waste for shipment. Your quality control program failed to evaluate the potential for generation of the flammable gas, pressurization of the cask and subsequent expulsion of radioactive materials during handling preparatory to shipment.
>
> This is a Severity Level IV violation (Supplement IV).

Response

Cask No. 6-80-2 was loaded on August 8, 1984 with solidified resin from the Unit 2 piping decontamination. The cask was in storage until December 13, 1984, because our review indicated that the initial resin sample activity analysis did not agree with the resin activity that was expected. Cask shipment was delayed until a confirmatory analysis of the resin could be obtained. The confirmatory analysis was performed to obtain sufficient information to properly label the solid radwaste shipment in accordance with 10 CFR 61.55 (waste classification). It was during this extended storage period that the cask pressurization occurred.

The solidification process was completed by a solidification contractor using a procedure developed by the contractor. The pressurization occurred because of the generation of hydrogen offgas from the solid billet. The generation of hydrogen offgas was not recognized as a potential problem and was not addressed by the procedure.

On December 13, 1984, the cask was opened to label the waste shipment in accordance with 10 CFR 61.55. As the cask lid was being raised, personnel heard the release of pressure. When the cask lid was removed, the liner was inspected and it appeared to be bulging. When personnel suspected that the liner was pressurized, the cask was resealed. Immediate actions included obtaining consultants to provide additional technical assistance. Three special procedures were developed to open the cask and liner, inspect the integrity of the liner and billet, and obtain gas samples for analysis. The liner was then fitted with a special sampling lid to accommodate a gas sampling apparatus. On January 29 and 30, 1985, the liner was found to contain 1.7% hydrogen by volume. A third sample taken on February 1, 1985, indicated 1.5% hydrogen by volume.

An investigation was initiated to determine the exposure level of the personnel involved with handling the shipment. Personnel exposure was determined to be well below the 10 CFR 20.103 requirements.

This resin solidification process is not commonly used at PBAPS. Appropriate corrective actions will be taken based on the identified causes and the generic considerations of this event.

To prevent recurrence, added precautionary measures are being taken for waste processes which are not commonly used at PBAPS. These measures include venting special radwaste shipments while they are still on site.

Mechanical Engineering Division has been requested to provide an analysis of this event and to evaluate the waste disposal program at Peach Bottom to ensure that the potential for the generation of flammable gas is adequately addressed for normal waste shipments. The appropriate station procedures will be modified following completion of the engineering review.

Philadelphia Electric Company realizes that additional measures are necessary to ensure compliance with the generic implications of I.E. Information Notice 84-72, "Clarification of Conditions for Waste Shipments Subject to Hydrogen Gas Generation". The corrective actions addressed in this letter should be adequate to attain this goal. The corrective steps should also ensure that an adequate evaluation of the December 13, 1984 event is completed and that corrective actions are made based on the generic implications of the event.

Should you require additional information, please do not hesitate to contact us.

Very truly yours,

cc: T. P. Johnson, Site Inspector