DCS No: 50387910118
Date: January 21, 1992

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-I-92-02

This preliminary notification constitutes EARLY notice of events of POSSIBLE safety or public interest significance. The information is as initially received without verification or evaluation, and is basically all that is known by the Region I staff on this date.

Facility:
Pennsylvania Power & Light Co.
Susquehanna Unit 1 and 2
Berwick, PA
Docket No. 50-387 and 50-388

Licensee Emergency Classification:
X Notification of Unusual Event
___ Alert
___ Site Area Emergency
___ General Emergency
___ Not Applicable

Subject: UNUSUAL EVENT DUE TO LOCALIZED HYDROGEN IGNITION AND CONTAMINATED INJURED MAN

At 8:47 a.m., January 18, 1992, a worker was injured when hydrogen gas in a pipe ignited during a grinding activity on the plant's common recombiner system. The worker received first and second degree burns to his chest, throat, and face and was transported offsite to the Berwick Hospital. While surveying the individual's chest prior to transport, low levels of contamination (3000 dpm/100 square centimeters) were detected. As a result, an Unusual Event was declared at 9:00 a.m., January 18, 1992. An Emergency Notification System (ENS) call was made at 9:51 a.m. and the resident inspector was contacted. The Unusual Event was terminated at 10:40 a.m. after the individual was successfully decontaminated at the hospital.

When the hydrogen ignited, the blast force caused the individual's cloth protective clothing to become charred from his head down to his knees. The individual's burns were apparently due to the initial blast and there was no fire involved. The worker was knocked down from the blast, but quickly returned to his feet. He was treated at the Berwick Hospital and returned to work on January 21.

The offgas recombiner system is a non-safety related system that functions to recombine hydrogen and oxygen generated as a normal byproduct of the fission process. The recombiners are designed to limit the buildup of combustible hydrogen gas in the main condenser off-gas system. There are three off-gas hydrogen recombiners, i.e., one for each unit and a common recombiner that functions as an installed backup. The common recombiner vessel was to be replaced. The work activity was being performed to prepare for installing a new vessel. The licensee had isolated the Unit 1 and 2 off-gas supply headers to the common recombiner by closing an air operated globe valve between the respective off-gas systems and a 10 inch open ended pipe. Hydrogen monitoring performed after the event confirmed that hydrogen gas was building up in the piping through a leak in the Unit 1 supply valve (HV-16907). Though the licensee purged the system to sweep out hydrogen gas prior to maintenance, the effort was apparently insufficient in removing all of the hydrogen. The remaining hydrogen apparently ignited as a result of a spark caused by grinding on the pipe.

In response to the event, the licensee formed a 16 person Event Review Team that convened on January 18. Their role was to investigate the event, identify root causes and causal factors, and to propose corrective action. The results of their initial investigation were reviewed on January 19 by the Plant Operations Review Committee (PORC).

The NRC is continuing to review the licensee's actions. The licensee's preliminary identification of root causes and causal factors appears to be complete and comprehensive. Proposed corrective actions appear to adequately address the noted causes. The licensee has agreed not to resume work activities until their investigation is completed, corrective actions are established, and approval is received from the NRC.

The Commonwealth of Pennsylvania was informed. The licensee issued a Press Release at 1:00 p.m., January 18. The Associated Press (AP) was informed and national news media attention was received. An NRC Commissioners' briefing was conducted at 1:00 p.m., January 18.

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