

PHILADELPHIA ELECTRIC COMPANY

LIMERICK GENERATING STATION  
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PLANT MANAGER  
LIMERICK GENERATING STATION

January 23, 1992

Mr. Robert Bauer  
Department of Environmental Resources  
Bureau of Water Quality Management  
1875 New Hope Street  
Norristown, PA 19401

Subject: Noncompliance with NPDES Permit No. PA-0051926,  
Limerick Generating Station; Cooling Tower Blowdown  
Manhole Overflow to Possum Hollow Creek

Dear Mr. Bauer:

DESCRIPTION OF THE EVENT

On December 18, 1991, a noncompliance of the NPDES permit for the Limerick Generating Station occurred when cooling tower blowdown water was discharged to Possum Hollow Creek resulting in an unpermitted discharge.

On December 18, 1991, at 1956 hours, a Unit 1 shutdown was initiated. Operations personnel began making preparations for cold weather operations of the Unit 1 cooling tower by placing the cooling tower in the "Winter Bypass Mode." System procedure S09.0.B, "Cold Weather Operation of the cooling tower," was used to redirect cooling water from the tower raceway directly to the tower basin. This alignment is required to prevent the build up of damaging ice because of reduced heatload as a result of a Unit shutdown. This change in operating mode prevents the evaporation loss of water normally experienced in standard cooling tower operation. The elimination of the evaporative loss of water along with a cooling tower basin makeup flow rate set for full power operation resulted in an increase in the Unit 1 cooling tower basin water level and an increase in blowdown flow rate. This additional flow, combined with blowdown from the Unit 2 cooling tower, increased the total cooling tower blowdown rate to above the discharge piping capacity.

At approximately 2130 hours, maintenance personnel observed water overflowing through a vented manhole, upstream of the normal discharge point (D01) for the cooling tower blowdown. Maintenance personnel immediately notified Main Control Room operations

personnel of this condition. When operations personnel arrived to investigate, the water discharge had stopped. The cooling tower blowdown water that overflowed from the vented manhole entered the Possum Hollow Creek roughly 100 yards upstream from the Schuylkill River. An estimated 125,000 gallons of water was discharged to Possum Hollow Creek before the water level in the Unit 2 cooling tower basin was returned to a normal level. Chemistry personnel reviewed chemistry analytical data for December 18, 1991, and determined that no NPDES Permit limits for outfall 001 were exceeded. Since the overflow water was representative of the discharge flow going to outfall 001, it was concluded that this discharge to Possum Hollow Creek also did not exceed any of our permit limits. The discharge ended at or before 2210 hours with a duration of approximately one hour. Since the discharge was very close to where Possum Hollow Creek enters the Schuylkill River, there was no environmental damage believed to be caused by the overflow condition. Therefore, the environmental impact of this unpermitted discharge was determined to be minimal.

#### CAUSE OF THE EVENT

The cause of this event was inadequate corrective actions (i.e., failure to identify and revise all appropriate procedures) implemented for a previous similar occurrence reported on December 7, 1989. In both this event and the prior event, the cause was the result of inefficient procedures that provided less than adequate guidance for responding to a reduced cooling tower makeup water demand during planned unit shutdowns, coincident with the need to enter cold weather cooling tower operation. Following the prior overflow event, system procedure S09.0-B was revised to caution operations personnel to maintain the total blowdown flow rate of both cooling towers below 10,000 gpm. However, in preparation for a planned unit shutdown, advanced operator actions are necessary to reduce the cooling tower basin level to a minimum, prior to implementation of system procedure S09.0-B. Therefore, procedure GP-3, "Normal Plant Shutdown," should have been revised to instruct operations personnel on the actions necessary to be taken prior to initiating a planned shutdown during cold weather operation ensuring that the total cooling tower blowdown flow rate of 10,000 gpm is not exceeded.

Additionally, a potential design deficiency exists in that during an unplanned unit shutdown, operations personnel would not be able to respond quickly enough to reduce cooling tower makeup flow and prevent an overflow condition to occur while in cold weather operation.

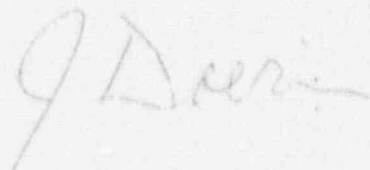
#### PREVENTION OF FUTURE OCCURRENCES

- o Procedure GP-3 is expected to be revised by February 15, 1992. This revision will provide procedural guidance to operations personnel for reducing cooling tower makeup flow during planned unit shutdowns in preparation for the reduced water demand. This procedure revision will also include a step for

use during periods of cold weather which requires realigning the appropriate cooling tower to the winter bypass line.

- o A review of the cooling tower level makeup system will be conducted by April 30, 1992. This review will determine if a modification of the cooling tower level makeup system design is required or whether a change in operational work practices or procedures can be made to ensure that this overflow condition can be avoided during an unplanned unit shutdown.

Sincerely,



WGS:cah

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