

# PHILADELPHIA ELECTRIC COMPANY

LIMERICK GENERATING STATION

P. O. BOX 2300

SANATOGA, PA 19464-2300

(215) 327-1200 EXT. 2000

J. DOERING, JR.  
PLANT MANAGER  
LIMERICK GENERATING STATION

November 23, 1992

Mr. Joseph A. Feola  
Pennsylvania Department of Environmental Resources  
Regional Water Quality Manager  
Lee Park, Suite 6010  
555 North Lane  
Conshohocken, PA 19428

Subject: Limerick Generating Station, Units 1 and 2  
Noncompliance with NPDES Permit No. PA-0051926

Dear Mr. Feola:

## DESCRIPTION OF NONCOMPLIANCE

During the period between October 13, 1992 and October 14, 1992 five samples were collected from Discharge Point 001 and sent to our Corporate Chemistry Laboratory to be analyzed for total zinc. Four of the five samples taken exceeded the Discharge Point 001 daily maximum permit limit of 1.0 mg/l. These four samples were all collected on October 13, 1992 and the results were 1.3 mg/l at 1100 hours, 1.1 mg/l at 1430 hours, 1.1 mg/l at 1530 hours, and 1.1 mg/l at 2030 hours. The fifth sample was collected at 1010 hours on October 14, 1992, and its result of 1.0 mg/l indicated that the total zinc concentration was trending downward below the permit limit again.

## CAUSE OF THE NONCOMPLIANCE

Heavy rains across southeastern Pennsylvania on October 9, 1992 caused the pH of both the Schuylkill River and the Perkiomen Creek to decrease by 1.2 and 1.0 pH units respectively. This drop in the pH of our makeup waters to both Cooling Towers caused the pH in the Circulating Water System to decrease to 8.0 in Unit 1 Cooling Tower and to 7.9 in Unit 2 Cooling Tower on October 12, 1992. The pH in this system is normally maintained between 8.0 and 8.5 to achieve optimal chemistry conditions. This change in the system chemistry could have contributed to a change in the solubility of the zinc in the system and caused an increase in total zinc concentration at Discharge Point 001. Additionally, we suspect that increased organic loading in the makeup water

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sources during this autumn season interfered with our total zinc colorimetric method that is performed daily for each unit. The interference was indicated by approximately a 0.2 mg/l difference between the reportable total zinc results obtained by an inductively coupled plasma analyzer and the results of duplicate samples analyzed by our routine colorimetric screening method. During the previous week, injection rates were increased on the pumps injecting PECO 4 due to the lower level of total zinc being detected.

#### DURATION OF THE NONCOMPLIANCE

The period of noncompliance began on October 13, 1992, at approximately 0800 hours when the pH in both Cooling Towers was still found to be at 8.0. The 8.0 pH in combination with increased injection of PECO 4 caused the total zinc concentration to increase in the Circulating Water Systems, thus causing the 1.0 mg/l permit limit at Discharge Point 001 to be exceeded. Based on the zinc analysis results from October 13, 1992 and October 14, 1992 the noncompliance period ended on October 14, 1992, at approximately 1000 hours when the total zinc concentration had decreased to the 1.0 mg/l permit limit. The duration of the noncompliance is estimated to have occurred over a 26 hour period during which about 9.6 million gallons of cooling water were released from the Discharge 001 Diffuser into the Schuylkill River.

#### CORRECTIVE ACTION

At approximately 0930 hours on October 12, 1992, the injection rates of both the Unit 1 and Unit 2 acid injection pumps were decreased to allow the pH of the water in the Cooling Towers to increase towards 8.5. At 1030 hours on October 13, 1992, immediately after it was determined that the total zinc levels may have exceeded the permit limit, the PECO 4 chemical injection to both Cooling Towers was terminated. These two corrective actions reduced the total zinc concentration to the 1.0 mg/l permit limit by 1000 hours on October 14, 1992.

#### PREVENTION OF FUTURE OCCURRENCES

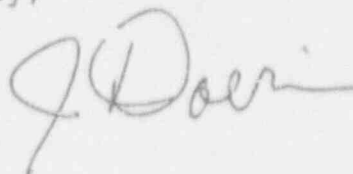
Appropriate Chemistry procedures will be revised to require notification of Chemistry supervision if numerous chemical feed pump adjustments are required within a short time frame.

An investigation is being conducted to determine if there is an interference with our total zinc colorimetric method of screening analysis. If an interference is found, corrective action will be initiated. If the interference is found to be due to seasonal variations in the water, then the station winterization procedure will be revised to incorporate a clarification concerning the likelihood of zinc interference during the seasonal period when this procedure is implemented.

Until the zinc analysis interference problem can be verified and corrected, pump injection rates for PECO 4 will be maintained at 40% unless authorization to change is granted by Chemistry Supervision.

If lower pH values are determined to have contributed to the problem, then Chemistry Supervision will institute a setpoint change to increase the lower pH setpoint for the automated acid feed systems.

Sincerely,



JLP:cah

cc: U.S. Nuclear Regulatory Commission  
Document Control Desk  
Docket Nos. 50-352/50-353  
Washington, D.C. 20555

T. T. Martin  
Administrator, Region I, USNRC  
Docket Nos. 50-352/50-353

T. J. Kenny  
USNRC Senior Resident Inspector, LGS  
Docket Nos. 50-352/50-353

Program Management Section (3WM52)  
Permits Enforcement Branch  
Water Management Division  
Environmental Protection Agency  
Water Permits Section  
Region III  
841 Chestnut Building  
Philadelphia, PA 19107