

PHILADELPHIA ELECTRIC COMPANY

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ROBERT W. BOYCE
PLANT MANAGER
LIMERICK GENERATING STATION

July 29, 1993

Mr. Peter G. Noll
Department of Health
Neshaminy Manor Center
Doylestown, PA 18901

Subject: Noncompliances with NPDES Permit
Bradshaw Reservoir
NPDES Permit No. PA-0052221

Dear Mr. Noll:

During the month of June 1993, six noncompliances with NPDES Permit No. PA-0052221, Bradshaw Reservoir, occurred. Each noncompliance is described below including the causes and corrective actions.

1. DESCRIPTIONS OF THREE TEMPERATURE LIMITATION NONCOMPLIANCES

- a. On June 18, following a trip of the Bradshaw Reservoir pumps, the Bedminster Water Processing Facility (WPF) chillers shutdown as designed on low facility inlet flow. A delay in the restoration of the WPF chillers caused the discharge temperature to exceed the permitted maximum limitation of 74 degrees F between 1200 and 1300 hours with a maximum temperature of 75.4 degrees F.
- b. On June 20 at 2116 hours, an electrical storm caused a loss of power to the Bedminster WPF chillers, the Bradshaw Reservoir Pump Station, and the Point Pleasant Pumping Station. Operations personnel responded and operators were dispatched to the facilities; however, adequate steps were not taken to restore the chillers to service by reclosing electrical breakers for the WPF chillers. A Bradshaw Pump was restarted at 2359 hours to restore flow to the East Branch Perkiomen Creek. On June 21 at approximately 0645 hours, the chillers were returned to service and by 0700 hours discharge temperature was less than 74 degrees F. As a result of a delay in the restoration of the WPF chillers, the WPF discharge temperature exceeded the permitted maximum limitation of 74 degrees F between 2359 hours on June 20 and

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0700 hours on June 21 with a maximum temperature of 79.5 degrees F.

Additionally, at about 1030 hours on June 21, plant personnel determined that the discharge temperature control setpoint for the WPF chillers had changed from 72 degrees F to 75.5 degrees F. As a result, the WPF chillers were maintaining the discharge temperature at approximately 75 degrees F from 0900 to 1100 hours on June 21. The setpoint change was concluded by plant personnel to be the result of the electrical storm disturbances. The setpoint change incident had never occurred previously, and was concluded to be an isolated occurrence. The WPF chiller setpoint was lowered to 72 degrees F at 1030 hours, and the discharge temperature stabilized below the permit limit by 1100 hours.

- c. On June 27, plant personnel again identified that the Bedminster WPF discharge temperature setpoint had changed from 72 degrees F to 75.5 degrees F. This resulted in the discharge temperature exceeding the permitted maximum limitation of 74 degrees F between 0700 and 0800 hours with a maximum temperature of about 75 degrees F. The WPF chiller setpoint was lowered to 72 degrees F and the discharge temperature stabilized below the permit limit.

CAUSES OF THE NONCOMPLIANCES

- o The cause of the delay in the restoration of the WPF chillers discussed in noncompliances 1a and 1b was the lack of adequate training and written instructions to Operations personnel regarding the necessary prompt restoration of the WPF chillers following a trip.
- o A contributing factor to the noncompliance discussed in 1a was the frequent tripping of the Bradshaw pumps which had been occurring over the preceding several days for indeterminate reasons. Each trip challenges operators to promptly respond in order to control WPF chiller discharge temperature.
- o The cause of the discharge temperature setpoint change which occurred in noncompliances 1b and 1c was incorrectly concluded to be the result of electrical storm disturbances. An investigation performed by a WPF computer specialist on June 27, determined that the electrical storm on June 20 did not cause the WPF computer malfunction. The investigation revealed that the WPF computer temperature control setpoint change occurred as a result of a programming deficiency in the WPF computer software.

PREVENTION OF FUTURE OCCURRENCES

- o Training was given to appropriate Shift Operations personnel regarding WPF chiller restoration following a trip, WPF chiller system status recognition utilizing the WPF computer, and the required operator actions to be implemented in the event the discharge temperature control setpoint cannot be maintained below 74 degrees F.
- o Additional written instructions were issued to Operations personnel specifying the necessary prompt, complete responses to Bradshaw Reservoir and Bedminster WPF system trips, and loss of power events.
- o Station Management stressed to Operations Supervision the importance of immediate responses to Bradshaw Reservoir and Bedminster WPF system problems.
- o To address the contributing factor identified for noncompliance 1a, internal and external power and control circuits at the Bradshaw facility are being monitored via event recorders to identify and isolate the component failures causing the frequent tripping of the Bradshaw pumps. The appropriate corrective action will be taken (e.g., replacement or design change) based on the information gathered.
- o On June 27 at 1600 hours, numerous WPF computer software programming changes were incorporated to ensure that the discharge temperature control setpoint cannot change to a value which is greater than 74 degrees F without manual manipulations.
- o The revision to the NPDES permit in response to our thermal variance request is pending issuance following the 30 day public comment period. Once issued, the WPF chiller operation will no longer be required since there will be no thermal limits.

2. DESCRIPTIONS OF TWO pH LIMITATION NONCOMPLIANCES

- a. On June 19 at 0200 hrs, Operations personnel identified that the Bedminster WPF discharge pH exceeded the permitted maximum limitation of 9.0 at 2300 hours on June 18. The pH of the discharge exceeded 9.0 through 0800 hours on June 19, with a maximum pH of 9.2.

In response to the identified increasing trend in pH over the previous day, a temporary carbon dioxide (CO₂) injection system was installed at the Bradshaw Reservoir in order to avoid high pH; however, the initial CO₂ flow rate was insufficient. The CO₂ flow rate was increased to its maximum, and the pH stabilized below the permit limit at 0800 hours on June 19.

- b. On the evening of June 19, Operations personnel identified that the WPF discharge pH permit limit of 9.0 was again being exceeded (between 1900 hours on June 19, and 0500 hours on June 20, with a maximum pH of 9.2). At 2330 hours on June 19 a manual grab sample was taken to confirm the indicated pH.

CAUSE OF THE NONCOMPLIANCES

The cause of both noncompliances was determined to be the result of natural biological activity enhanced by a raw sewage spill into the Delaware River which occurred on June 12, in the area of Easton, PA. Delaware River pH was equally elevated during this period of time.

PREVENTION OF FUTURE OCCURRENCES

A second temporary CO2 sparger and additional CO2 tanks were installed on June 22, to increase CO2 injection capability. Since the occurrence on June 19, the natural biological activity has subsided, and pH values have remained below the permit limit. Presently, CO2 injection is not being performed.

3. DESCRIPTION OF ONE CADMIUM LIMITATION NONCOMPLIANCE

On June 22, the results of a cadmium grab sample from June 8, were received and the concentration was slightly greater than the permit daily average limit of 0.0022 mg/L. The actual value was 0.0023 mg/L. This parameter was resampled on three more occasions and in each case the value was less than 0.0022 mg/L. The monthly average was 0.00054 mg/L. Inadvertently, this permit limit exceedance was not recognized as a 24-hour reportable condition. Notification was made on July 21.

CAUSE OF THE NONCOMPLIANCE

- o The cause of the noncompliance is suspected to be the result of a natural occurrence in the Delaware River.
- o The reason why this noncompliance was not identified as reportable on June 22, was due to an oversight by the System Manager.

PREVENTION OF A FUTURE OCCURRENCE

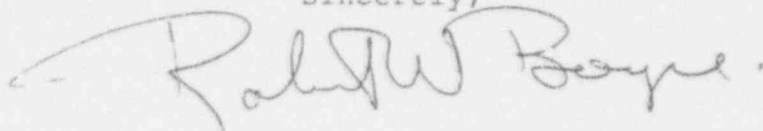
No long term corrective actions to prevent recurrence are planned.

Notifications of these noncompliances were made to the Department of Health pursuant to NPDES permit requirements. In each instance, the requirement for submittal of a 5-day report was

waived by the Department and therefore, the required written report is being submitted in this letter.

If you have any questions please contact Jim Kantner at 327-1200 extension 3400.

Sincerely,

A handwritten signature in cursive script that reads "Robert W. Boyle". The signature is written in dark ink and is positioned below the word "Sincerely,".

DMS:cah

cc: U.S. Nuclear Regulatory Commission
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