NRC

Pennsylvania Power & Light Company
Two North Ninth Street • Allentown, PA 18101 • 215/770-5151

September 27, 1984

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Mr. Paul Koval
Chief Operations Section
Bureau of Water Quality Management
Pa. Department of Environmental Resources
P. O. Box 659
90 East Union Street, Second Floor
Wilkes-Barre, PA 18702

SUSQUEHANNA STEAM ELECTRIC STATION
DISCHARGE MONITORING REPORT (DMR)
NPDES PERMIT NO. PA 0047325 AND
NPDES PERMIT NO. PA 0027448
CCN 741326 FILE 012
PLE-5837

Dear Mr. Koval:

Attached are the completed copies of the NPDES Monitoring Reports for the month of August 1984 for all waste discharges at the subject location. The Discharge Monitoring Forms are being submitted in accordance with the requirements of our NPDES permit.

The Sewage Treatment Plant NPDES permit (PA 0027448) had the following noncompliances:

1. Eight-hour composite samples taken on August 7, 1984 and August 21, 1984 for BOD (5 day) were 35 mg/liter and 26 mg/liter respectively. Because of this, the average BOD daily limit of 30 mg/liter was exceeded with a value of 31 mg/liter, the average quantity limit of 11.3 lbs/day was exceeded with a value of 17 lbs/day and the percent removal BOD (5 day) was 83.2. Excessive flow on August 6, 1984 (81,116 gals/day) and August 7, 1984 (91,328 gals/day) due to plumbing problems at the North Gate House, caused the composite sample of August 7, 1984 to have a BOD (5 day) of 35 mg/liter, a quantity discharge of 27 lbs/day and a percent removal of 76.7. The sample of August 21, 1984 had a concentration of 26 ml/liter a quantity discharge of 6.6 lbs/day and a percent removal of 89.6.

2. Eight-hour composite samples taken on August 7, 1984 and August 21, 1984 for T.S.S. contained 48 mg/liter and 5 mg/liter respectively. Due to excessive flow on August 7, 1984, the average limit of 11.3 lbs/day was exceeded with a value of 19.2 lbs/day. The T.S.S. quantity values for August 7, 1984 and August 21, 1984 were 37 lbs/day and 1.3 lbs/day, respectively. Both the average concentration and the percent removal limits for T.S.S. were met.

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3. Grab samples taken on August 8, 1984 and August 22, 1984 for fecal coliforms each contained 230 colonies/100 ml which exceeded the average limit of 200 colonies/100 ml. Excessive flows on August 6, 7, and 8 (68,722 gal/day) probably accounted for the fecal coliform value of August 8, 1984. On August 22, 1984, the flow rate was normal, the final effluent was clear, and the free available chlorine was 1.0 mg/liter. The contact time was apparently not adequate to ensure proper disinfection.

The operational NPDES permit (PA 0047325) had the following noncompliances:

1. A possible violation of Part C, Special Conditions, Item F of 35 minutes may have occurred August 1, 1984 for outfall 041. At 0100 on August 1 the circulating water chlorine injection system for Unit 1 began operating. The system normally injects chlorine for twenty minutes and then automatically turns off. The system, however, continued running until manually turned off at 0230. At 0105 the dechlorination system began normal operation until it shut of at 0505. During this four-hour period, no free available or total chlorine should have been discharged to the river. At 0740, the cooling tower blowdown was isolated and no water from Unit 1 was discharged to the river until 1350 to ensure no chlorine non-compliances. Samples taken and analyzed during this period are listed below. Since the last sample taken prior to the 0740 isolation of the blowdown still contained 0.05 mg/liter free available chlorine, it is possible that chlorine was discharged between 0505 (dechlorination shutdown) and 0740 (blowdown isolation). This would be for a period of two hours and 35 minutes or a possible violation of 35 minutes.

Chlorine Levels in Unit 1 Cooling Tower Basin
August 1, 1984

Time	Free Available Chlorine mg/l	Total Chlorine mg/l
0305	0.35	0.80
0335	0.12	0.35
0400	0.07	0.18
0435	0.05*	
1215	0.15	

* Sample collected at Unit 1 High-Pressure Condenser Outlet (first pass) prior to discharge back into cooling tower basin.

Due to this problem and an additional problem listed below, the only other day the circulating water was chlorinated was August 31, 1984.

This information was provided to the Pa. DER in letter PLE-5491, August 9, 1984.

2. Routine samples obtained from both the Unit 1 and Unit 2 basins from August 13, 1984 to August 28, 1984 contained chlorine residual when analyzed by the Amperometric titration and DPD methods. River samples analyzed by the same methods also gave a positive indication of chlorine being present. A river sample collected and analyzed on August 17, 1984 contained 0145 mg/liter free chlorine by amperometric titration and 0.55 mg/liter free chlorine by the DPD method. This sample was also sent to outside laboratories in an effort to help determine the interferant species. The only analysis report received to this date is attached. On August 31, 1984, after two days of less than detectable chlorine in the cooling tower basins and the river, chlorinations resumed and no similar problems have been experienced.

3. Cooling Tower Blowdown (outfall 041) samples for T.S.S. exceeded the 200 mg/liter permit limit from August 16, 1984 to August 23, 1984. This excursion was due to unusually high levels of T.S.S. in the river, combined with the concentrating effects of the stations cooling system. Results of the cooling tower blowdown and river samples for T.S.S. are listed below.

	T.S.S. (mg/liter)	
Date	River	CTBD
8/16/84	240	40
8/17/84	275.5	147.2
8/18/84	587	230 at 0915 767 at 1315
8/19/84	163	630
8/20/84	118	654
8/21/84	90	369
8/22/84	82.5	249
8/23/84	62	204

This information was provided to the Pa. DER in letter PLE-5575, August 23, 1984.

4. A grab sample of the cooling tower blowdown (outfall 041) taken August 19, 1984 contained 31.9 mg/liter total iron. River quality at the time is believed to be the reason for this excursion. A grab sample of river water taken on August 17, 1984 contained 13.5 mg/liter total iron. This information was provided to the Pa. DER in letter PLE-5632, August 31, 1984.

5. The cooling tower blowdown flow element continues to be out of service. Estimated flows are 7000 gpm or 10.08 MGD.

If you have any questions, please contact me at (215) 770-7889.

Respectfully yours,

Jerome S. Fields /JSH.

Jerome S. Fields
Sr. Environmental Scientist-Nuclear

JSF/dml

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cc: EPA, Region III A. Schwencer, NRC