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RECIP.NAME RECIPIENT AFFILIATION
SELLS,D.E. Environmental Projects Branch 2

SUBJECT: Forwards comments on June 1979 DES.Revised water use diagram encl.

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TWO NORTH NINTH STREET, ALLENTOWN, PA. 18101 PHONE: (215) 821-5151

September 4, 1979

Mr. Donald E. Sells, Acting Branch Chief
Environmental Projects Branch 2
Division of Site Safety and Environmental Analysis
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUSQUEHANNA SES
COMMENTS ON DES
ER 100450 FILE 991-2
PLA- 396

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Dear Mr. Sells:

Attached are PP&L's comments on the Draft Environmental Statement issued by NRC in June, 1979.

Very truly yours,

N. W. Curtis

JSF #587:5

Copy to:
Mr. Paul Leech
Mail Stop P522
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

C002
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1. INTRODUCTION

1. Section 1.], pg. 1-1 - The issuance of a National Pollution Discharge Elimination System (NPDES) permit is a necessary prerequisite for the issuance of an operating license by the Nuclear Regulatory Commission. The permit was issued by the Pennsylvania Department of Environmental Resources on July 31, 1979.

2. THE SITE

1. Section 2.3.3, pg. 2-11 - Figure 2.3, Water Use Diagram has been revised per the NPDES permit. The parking area hold-up pond has been deleted (see revised Figure 2.3, attached)

2. Section 2.3.4.1, pg. 2-11 - On "line 1" - The monitoring schedule ranged from twice weekly to quarterly. On "line 2" - The monitoring by Ichthyological Associates since 1971 has been weekly instead of daily. Line 8 should read total iron "and fecal coliforms". Figures 2.5 and 2.6 are reversed.

3. Section 2.5.1.3, pg. 2-22 - Add to line 12; "An American peregrine falcon was observed in 1973.:

4. Section 2.4.2, pg. 2-11 - Local Meteorology

The statement is made that in 1973 data recovery for the joint frequency data at the 9.6 m level was "only about 70%." Applicant data show about 90%. This is based on the wind speed and direction from the 9.6 m level and the temperature differential between 91.7 m and 9.6 m as the primary system. If these temperature differential data were missing, the temperature differentials between 30.5 m and 9.6 were used.

The years 1974 and 1975 did have an unusually high occurrence of unstable conditions. These meteorological conditions are not fully understood. The data may not be representative of long term conditions but they are representative of conditions which occurred in 1974 and 1975, and therefore, Applicant believesit should not be deleted.

For the year 1976 the wind speed and direction data indicates a predominant wind flow from the west-southwest (13.50% of the time). A secondary flow occurred from the west 12.18% of the time. These figures differ slightly from those in the DES, although the directions are in agreement. The frequency of calms was 1.51% for 1976 at the 9.6 m level, rather than the 4.6% frequency shown in the DES.

3. THE PLANT

1. Section 3.2.4.1, pg. 3-8 - The parking area hold up pond has been deleted. See revised Figure 2.3 which is attached.

4. ENVIRONMENTAL EFFECTS OF STATION OPERATION

1. Section 4.3.1, pg. 4.2 - The effluent limitations, monitoring requirements, and other standard and special conditions of the Commonwealth of Pa. Water Quality Management Permit (No. 4076203) have been susperseded by the terms and the conditions of the NPDES Permit (No. PA-0047325). See part C, paragraph B of NPDES permit.

2. Section 4.3.3.3, pg. 4-5 - Inhibitors containing chromium will be used in the closed cooling loops.

3. Section 4.4.2.1, Pg. 4-9 - Although it is true that specific pool by pool comparisons have not been made, the applicant's consultant, Ichthyological Associates (IA), has compared water quality and aquatic organisms (species numbers and relative abundances) in the intake-discharge pool to that at sampling stations in pools up and downriver. A review of physiococchemical, algae, zooplankton, benthos, larval fish, and adult fish data presented in IA Annual Reports from 1972 through 1974 will show that ample comparisons have been made. Overall, the results reveal that aquatic life in the intake-discharge pool is not unique in comparison to other areas sampled with the exception that this pool is an extensive recovery zone caused by acid mine drainage pollution which enters at various locations upriver. For example, in 1974 Gale and Mohr (1976) sampled fish spawning sites about 6 km up- and downriver from the intake. They determined that "no species avoided polluted waters by spawning in the tributaries or in clean water below their mouths." They also found the most kinds of fish eggs in "shallow water with strong currents." Such areas are between river pools. Furthermore, in 1973 Tuttle (1974) sampled adult fishes with nearly equal effort at five stations. He captured about three times as many fish at Falls, a relatively clean water control station about 65 km upriver, than at the intake-discharge pool (SSES).

   The term "pool" is perhaps somewhat misleading. The Susquehanna River during low water periods is not a series of pools that are isolated from one another by shallow riffle areas. Even during the lowest flows at which the Susquehanna SES will be permitted to operate, there will be ample flowage between the pools so that fish and other organisms can pass freely.

References

Gale, W. F. and H. W. Mohr, Jr. 1976. Fish spawning in a large Pennsylvania River receiving mine effluents. Proc. Pa. Acad. Sci. 50: 160-162.

Tuttle, L. R., Jr. 1974. Fishes. Pages 537-691 in, An ecological study of the North Branch Susquehanna River in the Vicinity of Berwick, Pennsylvania, Progress Report for the Period January-December 1973. Ichthyological Associates, Inc., Berwick, PA.

4. Section 4.4.2.1, pg. 4-10 - An entrainment and impingement program will be provided consistent with NPDES permit (No. PA-0047325) requirements.

The applicant has stated that impingement and entrainment will be "relatively small" because of unpublished studies done by Ichthyological Associates, Inc. at the Hunlock Steam Electric Station (Hunlock SES) in 1974-75 (Ichthyological Associates 1975). The Hunlock SES is a small, coal-fired station operated by the Luzerne Electric Division of the UGI Corporation, Kingston, Pennsylvania. It is located about 15 km upriver from the Susquehanna SES and utilizes a once through cooling system that draws about 245 m^3/min of water through two intake canals with velocities up to 0.23 m^3/s. Once each month, from May 1974 through April 1975, impingement samples were collected. Extrapolation of results from these limited samples showed that approximately 230 kg of fish flesh were impinged throughout the one-year period. It was therefore concluded that impingement losses of about 0.6 kg/day would have a negligible effect on the sport fishery of the Susquehanna River. Because the Susquehanna SES at maximum generation will withdraw only about 150 m^3/min, applicant concludes that impingement losses would be similar to those experienced at the Hunlock SES. Larval fish were also sampled at the Hunlock SES once per month in May, June and July, 1974 to evaluate entrainment. Mean densities of entrained larvae were always less than one larvae/m^3. This was concluded to be an acceptable loss because less than 5% of the river flow was drawn into the plant on the days sampled. It would not seem unreasonable to expect similar results at the Susquehanna SES. A copy of this report to be provided under separate cover.

References

Ichthyological Associates, Inc. 1975. Hunlock Steam Electric Station Ecological Study, Progress Report for the Period May 1974 through April 1975. Ichthyological Associates, Inc., Berwick, PA 107 pp.

5. Table 4.1 - This table contains several typographical errors. A copy of the table with corrections indicated will be forwarded under separate cover.

6. Table 4.5, pg. 4-16

Staff assumptions regarding Turbine Building releases do not allow credit for the leakoff collection system.

Staff assumptions regarding the off-gas system releases are significantly higher than the ER-OL estimates. It appears this is due to a failure to adjust the charcoal absorption factors for temperature.

Applicant believes that iodine releases should be reduced due to the use the leakoff collection system.

5. ENVIRONMENTAL MONITORING

1. Table 5.1, pg. 5.3 - This table has been updated to reflect changes in sampling locations and station nomenclature corrections. The lower limits of detection have also been revised per NUREG 0473. A copy of the table with corrections indicated will be forwarded under separate cover.

6. ENVIRONMENTAL IMPACT OF POSTULATED ACCIDENTS

No Comments

7. NEED FOR POWER

1. Section 7.1, pg. 7-1 - The present schedule for commercial operation of Unit 1 is July, 1981 and for Unit 2, October, 1982. Line 7 - 4970 MW is without UGI.

2. Section 7.3.2, pg. 7-2 - The annualized construction cost of $105 million is from FES-CP. The cost of the plant to PP&L in the ER-OL is forecast to be $1.9 billion. With an assumed 15% levelized annual carrying charge rate a carrying charge of $285 million per year results.

3. Table 7.4, page 7.5 appears to contain two errors. First, firm purchases are accounted for twice. Normally, these transactions are either added to total capacitors or subtracted from peak load. Since 76 MWe are included in total capacities, this amount should not be subtracted from the Winter Peak. Second, for years 1982 through 1985, only Unit 1 was subtracted from the total capacities to calculate reserves without Susquehanna. Unit 2 should also be deducted.

8. EVALUATION OF PROPOSED ACTION

1. Table 8.1 - The listing of nuclear fuel consumed in kg/day (12,000^{e}) appears to be one order of magnitude too high.

9. BENEFIT-COST ANALYSIS

1. Section 9.4, pg. 9-1 - Economic Costs

The fuel cost for the first full year of operation should be $51 million as noted on Table CAB 1.2 of the ER-OL.

2. Table 9.1, pg. 9.2 - Benefit-Cost Summary

The energy and capacity in the Direct Benefits section are for the whole plant (2 units), however the Economic Costs are PP&L's share of the first year cost of Unit #1 only. The direct benefits and the economic costs should be stated on a consistent basis.

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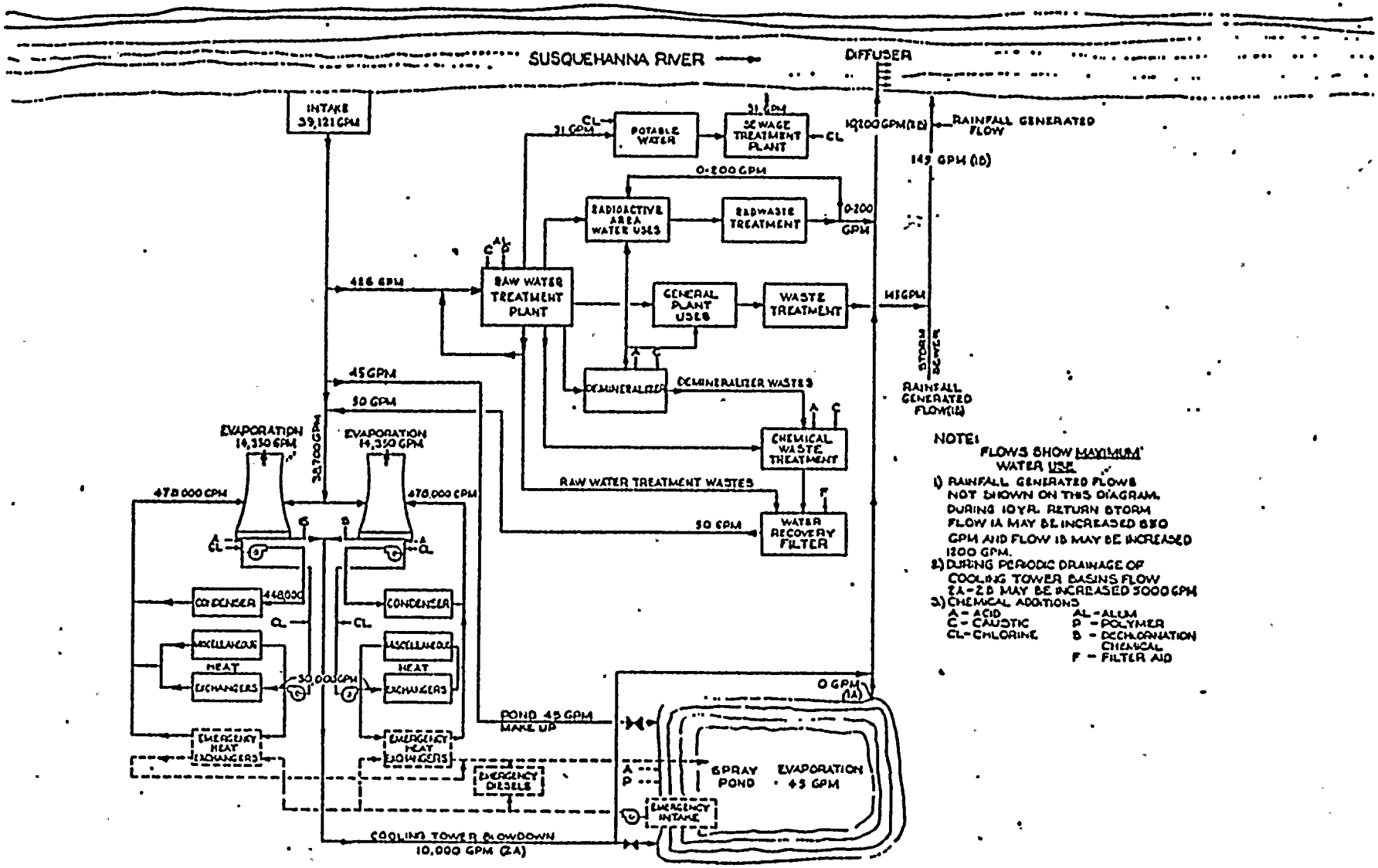

Fig. 2.3. Water Use Diagram for Susquehanna Units 1 and 2. From ER-OL, Fig. 3.3-1.