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DESCRIPTION:

Ltr re our 10-20-75 ltr .....trans the following:

ENCLOSURES:

Addenda intended to update their NPDES application for the H.B.Robinson Steam Electric Plant .....

ACKNOWLEDGED
DO NOT REMOVE

PLANT NAME: H.B.Robinson #2

FOR ACTION/INFORMATION 11-12-75 JGB

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Carolina Power & Light Company

November 6, 1975

50-261

Mr. Howard D. Zeller, Deputy Director
Enforcement Division
U. S. Environmental Protection Agency
1421 Peachtree Street, N.E.
Atlanta, Georgia 30309

Regulatory File Cy.

RE: H. B. ROBINSON STEAM ELECTRIC PLANT
NPDES APPLICATION

Dear Mr. Zeller:

As related to you in our letter of October 20, 1975, please find enclosed addenda intended to update our NPDES application for the H. B. Robinson Steam Electric Plant.

Our supplemental filing of information on May 14, 1974 responded, in part, to requests for design information. The May 14th submittal supplemented earlier information provided in the Refuse Act filing.

The data provided in the enclosure includes design values, observed values and predicted values that can be expected under fixed and varying operating and meteorological conditions.

Following your review of the information provided, we will be most happy to answer any questions that may arise.

We are appreciative of the cooperation provided us in this matter.

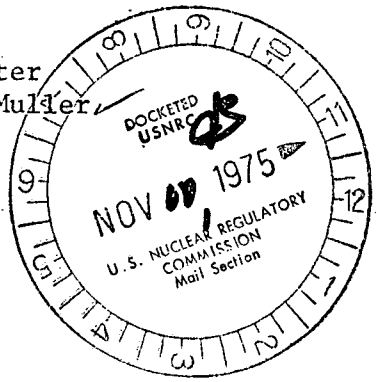
Yours very truly,

J. A. Jones
Executive Vice President
Engineering, Construction & Operation

JAJ/nja

Enclosures

cc: Messrs. Charles Jeter
Daniel R. Muller



336 Fayetteville Street • P. O. Box 1551 • Raleigh, N. C. 27602

12855

Addendum

Item 3 Addendum

Number, capacity and operational schedule as a function of season of year, plant output, etc.

Unit No. 1 - There are two pumps each with a designed capacity of 43,725 gpm. When the back pressure is below 1.5 inches of mercury, one circulating water pump is used. This can only be done in the winter months and not on a continuous basis.

Unit No. 2 - There are three circulating water pumps each with a designed capacity of 160,700 gpm serving Unit No. 2. In addition to the circulating water pumps, the service water system requirements have a flow rate of approximately 24,000 gpm under normal plant operation. The total estimated flow rates for the circulating water system and service water system under normal operating condition would be approximately 506,100 gpm.

Item 5 Addendum - Design temperature rise across the condenser and design flow.

Table 1 provides the design temperature rise across the condensers and the condenser design flows with Unit No. 2 at 2200 MW thermal.

TABLE 1

	Retention Time	Temperature Rise Across Condensers	Condenser* Flow Rate
Unit 1	4.8 sec.	22.4°F	80,750 gpm
Unit 2	7.14 sec.	18°F**	482,100 gpm

*Unit 1 based on condenser design. Design flow based on circulating water pumps is 87,500 gpm.

**18°F Rise is based upon preliminary heat rejection rate of 4.3×10^9 BTU/hr. Final condenser design was 4.83×10^9 BTU/hr. which would yield a 20°F rise across condenser.

Data in Table 2 provides predicted temperature rises and circulating water flows that are based on observed operating characteristics and design values with Unit No. 2 at 2300 MW thermal.

TABLE 2

	Temperature Rise*	Circulating Water** System Flow Rates
Unit 1	24°F	87,500 gpm
Unit 2	21°F	482,100 gpm
Unit 1 & 2	21°F***	569,600 gpm

* Rounded to nearest degree
** Exclusive of service water system which discharges into circulating water system
***Temperature Rise across plant

Data in Table 3 provides predicted temperature rises and circulating water flows that are based on observed operating characteristics and design values and assume the loss of one circulating water pump for Unit No. 2 with Unit No. 2 at 2300 MW thermal.

TABLE 3

	Temperature Rise*	Circulating Water*** System Flow Rates
Unit 1	24°F	87,500 gpm
Unit 2	30°F	321,400 gpm
Unit 1 & 2	29°F**	408,900 gpm

* Rounded to nearest degree
** Temperature rise across plant
***Exclusive of service water system which discharges into the circulating water system

NOTE: Assumes load factor of 1.0 which cannot be sustained for a prolonged period with a Unit 2 circulating water pump out.

TABLE 1

PREDICTED AVERAGE TEMPERATURES

Month	Inlet (°F)	Outlet (°F)
January	57.6	77.9
February	59.5	79.8
March	66.1	86.4
April	73.2	93.5
May	81.4	101.7
June	86.4	106.7
July	88.2	108.5
August	88.0	108.3
September	82.8	103.1
October	73.8	94.1
November	64.5	84.8
December	57.4	77.7

CONDITIONS:
1. Average meteorological conditions
2. Unit Nos. 1 and 2 in operation
3. Unit No. 2 at 2200 MW thermal
4. Load factor of 1
5. Circulating water flow is 1323 cfs including service water

TABLE 2

PREDICTED AVERAGE TEMPERATURES

Month	Inlet (°F)	Outlet (°F)
January	57.9	78.9
February	59.8	80.8
March	66.3	87.3
April	73.4	94.4
May	81.6	102.6
June	86.6	107.6
July	88.4	109.4
August	88.2	109.2
September	83.0	104.0
October	74.1	95.1
November	64.8	85.8
December	57.8	78.8

CONDITIONS:

1. Average meteorological conditions
2. Unit Nos. 1 and 2 in operation
3. Unit No. 2 at 2300 MW thermal
4. Load factor of 1
5. Circulating water flow is 1323 cfs including service water

TABLE 3

PREDICTED MAXIMUM TEMPERATURES

Month	Inlet (°F)	Outlet (°F)
January	62.8	83.1
February	65.7	86.0
March	72.7	93.0
April	79.1	99.4
May	86.0	106.3
June	90.6	110.9
July	91.8	112.1
August	91.7	112.0
September	86.3	106.6
October	78.1	98.4
November	69.9	90.2
December	62.7	83.0

CONDITIONS:
1. Adverse meteorological conditions
2. Unit Nos. 1 and 2 in operation
3. Unit No. 2 at 2200 MW thermal
4. Load factor of 1
5. Circulating water flow is 1323 cfs including service water

TABLE 4

PREDICTED MAXIMUM TEMPERATURES

Month	Inlet (°F)	Outlet (°F)
January	63.1	84.1
February	66.0	87.0
March	72.9	93.9
April	79.3	100.3
May	86.2	107.2
June	90.8	111.8
July	92.0	113.0
August	91.9	112.9
September	86.5	107.5
October	78.4	99.4
November	70.2	91.2
December	63.1	84.1

CONDITIONS:
1. Adverse meteorological conditions
2. Unit Nos. 1 and 2 in operation
3. Unit No. 2 at 2300 MW thermal
4. Load factor of 1
5. Circulating water flow is 1323 cfs including service water

TABLE 5

OBSERVED TEMPERATURES FOR AUGUST, 1975

Inlet (°F)	Outlet (°F)	Load Factor
92.4	111.0	0.992
91.4	110.5	1.0
91.8	111.3	0.997
90.8	109.2	0.999
92.6	110.7	0.815

NOTE: The above selected temperature data is considered to reflect maximum observed inlet and outlet temperature conditions for Unit No. 2 at the H. B. Robinson Plant since Unit No. 2 was authorized to operate at full power in September, 1970.