PECO ENERGY

PECO Energy Company
Nuclear Group Headquarters
965 Chesterbrook Boulevard
Wayne, PA 19087-5691

June 27, 1994

Docket Nos. 50-277
50-278
License Nos. DPR-44
DPR-56

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Subject: Peach Bottom Atomic Power Station, Units 2 and 3
Proposed Change to National Pollutant Discharge
Elimination System Permit

Dear Sir:

This letter is being submitted in accordance with Technical Specifications Section 7.4.2.B.2 Appendix B, of the Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3 Facility Operating Licenses, which stipulates that the NRC shall be provided with a copy of any proposed changes to permits and certificates required by Federal, State, local and regional authorities for the protection of the environment.

By letters dated February 24, 1994 and March 31, 1994, PECO Energy Company submitted the attached information to the Pennsylvania Department of Environmental Resources (PADER). The information supported a request for an amendment to the National Pollutant Discharge Elimination System Permit (Permit No. PA0009733) for PBAPS Units 2 and 3. The amendment was necessary to support the power rerate program. This letter provides you with a copy of the information that was submitted to the PADER.

If you have any questions or require additional information, please contact us.

Sincerely,

George A. Hunger, Jr.

George A. Hunger, Jr.
Director - Licensing

Attachment

cc: T. T. Martin, Administrator, USNRC, Region I
W. L. Schmidt, Senior Resident Inspector, USNRC, PBAPS

A001
1/1

PECO ENERGY

PECO Energy Company
2301 Market Street
PO Box 8699
Philadelphia, PA 19101-8699
215 841 4000

February 24, 1994

Mr. Paul Yarnell
Department of Environmental Resources
One Ararat Boulevard
Harrisburg, PA 17110

Dear Mr. Yarnell:

Subject: Peach Bottom Atomic Power Station NPDES Permit No. PA0009733

The following information is being provided in reference to the renewal of the subject NPDES permit:

1) Enclosed is a copy of the completed fish study required for updating the 316(a) thermal variance approval at Peach Bottom Atomic Power Station. The study was performed at the request of Mr. Lance Himmelberger. Mr. Himmelberger indicated that PaDER was interested in obtaining updated information on the relative fish abundance, distribution and species composition in the Conowingo Pond. A study plan was submitted to and approved by Mr. Thomas Barron of PaDER's Division of Assessment and Standards and Mr. Leroy Young of the Pa. Fish and Boat Commission. The report concluded that no obvious changes in the species abundance were observed between 1993 and the historic record. Changes in the abundance of a particular species has historically been associated with year class strength. A copy of this report will be forwarded to Mr. Barron.

2) As per our previous discussions and meeting, Peach Bottom is planning to increase the generating plant's rated power levels. As a result of the increased power levels, the temperature of the circulating cooling water leaving the main condensers will increase by approximately 1 degree fahrenheit. A study was performed by Stone and Webster Engineering Company to determine the effect of the temperature increase on the cooling tower performance and compliance with the existing 316(a) thermal variance approval. The study concluded that the cooling towers will be able to meet the present temperature limitations but, the permit matrix would need to be modified. Calculations were performed using a heat balance technique and the new matrix was generated (see attached). Please note the following concerning the new matrix:

   a) The lowest seven day moving average river temperature requiring cooling tower operation has been lowered from 53 degrees F to 51 degrees F.

   b) The percent power values in the matrix have been replaced with absolute power values in Megawatts Thermal (MWth). The use of absolute values will reduce any uncertainty as to what power level the plant is operating and the associated cooling tower requirements.

c) An additional block of plant conditions/river water temperatures has been provided for 2-unit operation at rerated full power levels, with either 4, 5 or 6 circulating water pumps in operation. The power level values range from 6600 to 6916 MWth (201% - 210% power under the old format).

3) In addition to the changes identified above, the following areas in the matrix require revisions:

a) The matrix currently does not cover the plant condition where one rerated unit is in operation with either 2 or 3 circulating pumps running while the other unit is shutdown.

b) Plant personnel discovered an inconsistency in the matrix with regard to tower usage at certain plant conditions. River temperatures given for certain plant conditions were found to be several degrees too high. These temperatures will need to be recalculated.

As of this time, the calculations required to correct the discrepancies have not been completed. They will be forwarded to you upon completion.

Once you have reviewed this information, we request that a meeting be held to discuss the new matrix and the results of the fish study. Also, we would like to discuss the timing of the new permit and the incorporation of the requested amendment. If you have any questions or require additional information, please contact me at (215) 841-5177.

Sincerely,

Robert M. Matty, Jr.
Engineer
Environmental Affairs

Attachment

bcc:	J. M. Madara, Jr.	w/o	attachment
	G. R. Rainey	"	"
	G. M. Morley	"	"
	T. J. Niessen	"	"
	G. D. Edwards	"	"
	J. M. Armstrong	"	"
	W. F. McElroy	"	"
	G. A. Hunger	w/	attachment
	E. J. Cullen	"	"
	M. C. Kray	"	"
	A. J. Wasong	"	"
	A. D. Odell	"	"
	C. A. Harkins	"	"

TABLE 1 – NUMBER OF COOLING TOWERS REQUIRED BASED ON THE NUMBER OF CIRCULATING WATER PUMPS OPERATING AND INLET WATER TEMPERATURE (7-DAY MOVING AVERAGE)

COMBINED 2 UNIT REACTOR POWER LEVEL

REQUIRED NUMBER OF TOWERS	650 - 1339 MWTH PUMPS 2	3	4	1340 - 1989 MWTH PUMPS 2	3	4	1990 - 2649 MWTH PUMPS 2	3	4	2650 - 2979 MWTH PUMPS 2	3	4	2980 - 3309 MWTH PUMPS 2	3	4	5	6
0	32-80	32-82	32-85	32-69	32-77	32-83	32-51	32-68	32-80	32-46	32-59	32-78	32-53	32-64	32-76	32-78	32-80
1	80+	82+	85+	69-81	77-83	83-86	51-72	68-78	80-83	46-60	59-75	78-81	53-65	64-72	76-80	78-81	80-82
2	- -	- -	- -	81+	83+	86+	72+	78+	83+	60+	75-85	81-85	65-86	72-84	80-84	81-84	82-85
3	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	85+	85+	86+	84+	84+	84+	85+
4	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
5	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

TO BE CORRECTED LATER

REQUIRED NUMBER OF TOWERS	3310 - 3639 MWTH PUMPS 2	3	4	5	6	3640 - 3969 MWTH PUMPS 4	5	6	3970 - 4299 MWTH PUMPS 4	5	6	4300 - 4629 MWTH PUMPS 4	5	6	4630 - 4959 MWTH PUMPS 4	5	6
0	TO BE ADDED LATER		32-73	32-78	32-79	32-69	32-75	32-77	32-65	32-72	32-76	- -	32-69	32-73	- -	32-65	32-71
1			73-78	78-80	79-81	69-76	75-79	77-80	65-73	72-77	76-79	32-69	69-74	73-77	32-64	65-72	71-76
2			78-82	80-83	81-84	76-81	79-82	80-83	73-79	77-81	79-82	69-76	74-79	77-81	64-75	72-78	76-79
3			82+	83+	84+	81+	82+	83-87	79-85	81-85	82-85	76-84	79-83	81-84	75-82	78-83	79-83
4			- -	- -	- -	- -	- -	87+	85+	85+	85+	84+	83+	84+	82+	83+	83+
5			- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

RERATED 2 UNIT FULL POWER

REQUIRED NUMBER OF TOWERS	4960 - 5289 MWTH PUMPS 4	5	6	5290 - 5609 MWTH PUMPS 4	5	6	5610 - 5939 MWTH PUMPS 4	5	6	5940 - 6269 MWTH PUMPS 4	5	6	6270 - 6599 MWTH PUMPS 4	5	6	6600 - 6918 MWTH PUMPS 4	5	6
0	- -	32-60	32-68	- -	- -	32-65	- -	- -	32-61	- -	- -	32-56	- -	- -	32-53	- -	- -	32-51
1	32-68	60-68	68-74	32-53	32-64	65-71	32-49	32-59	61-68	32-47	32-54	56-64	32-46	32-51	53-59	32-45	32-49	51-55
2	68-72	68-76	74-78	53-68	64-73	71-76	49-60	59-71	68-75	47-53	54-66	64-72	46-49	51-60	59-69	45-47	49-52	55-64
3	72-81	76-82	78-82	68-80	73-80	76-81	60-78	71-79	75-80	53-75	66-77	72-78	49-71	60-74	69-77	47-53	52-72	64-73
4	81+	82+	82+	80+	80+	81+	78+	79+	80+	75+	77+	78+	71+	74+	77+	53+	72+	73+
5	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

TO BE CORRECTED LATER

TABLE 1 - NUMBER OF COOLING TOWERS REQUIRED BASED ON THE NUMBER OF CIRCULATING WATER PUMPS OPERATING AND INLET WATER TEMPERATURE (7-DAY MOVING AVERAGE)

COMBINED POWER LEVEL (2 UNITS - 200%)

REQUIRED NUMBER OF TOWERS	20% - 40% PUMPS			41% - 60% PUMPS			61% - 80% PUMPS			81% - 90% PUMPS			91% - 100% PUMPS				
	2	3	4	2	3	4	2	3	4	2	3	4	2	3	4	5	6
1	32-80	32-82	32-85	32-69	32-77	32-83	32-51	32-68	32-80	32-46	32-59	32-78	32-53	32-64	32-76	32-78	32-80
	80+	82+	85+	69-81	77-83	83-86	51-72	68-78	80-83	46-60	59-75	78-81	53-65	64-72	76-80	78-81	80-82
2	- -	- -	- -	81+	83+	86+	72+	78+	83+	60+	75-85	81-85	65-86	72-84	80-84	81-84	82-85
3	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	85+	85+	86+	84+	84+	84+	85+
4	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
5	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

REQUIRED NUMBER OF TOWERS	101% - 110% PUMPS			111% - 120% PUMPS			121% - 130% PUMPS			131% - 140% PUMPS			141% - 150% PUMPS			151% - 160% PUMPS		
	4	5	6	4	5	6	4	5	6	4	5	6	4	5	6	4	5	6
0	32-73	32-78	32-79	32-69	32-75	32-77	32-65	32-72	32-76	- -	32-69	32-73	- -	32-65	32-71	- -	32-60	32-68
1	73-78	78-80	79-81	69-76	75-79	77-80	65-73	72-77	76-79	32-69	69-74	73-77	32-64	65-72	71-76	32-68	60-68	68-74
2	78-82	80-83	81-84	76-81	79-82	80-83	73-79	77-81	79-82	69-76	74-79	77-81	64-75	72-73	76-79	68-72	68-76	74-78
3	82+	83+	84+	81+	82+	83-87	79-85	81-85	82-85	76-84	79-83	81-84	75-82	78-83	79-83	72-81	76-82	78-82
4	- -	- -	- -	- -	- -	87+	85+	85+	85+	84+	83+	84+	82+	83+	83+	81+	82+	82+
5	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

REQUIRED NUMBER OF TOWERS	161% - 170% PUMPS			111% - 180% PUMPS			181% - 190% PUMPS			191% - 200% PUMPS		
	4	5	6	4	5	6	4	5	6	4	5	6
0	- -	- -	32-65	- -	- -	32-61	- -	- -	32-56	- -	- -	32-53
1	32-53	32-64	65-71	32-49	32-59	61-68	32-47	32-54	56-64	32-46	32-51	53-59
2	53-68	64-73	71-76	49-60	59-71	68-75	47-53	54-66	64-72	46-49	51-60	59-69
3	68-80	73-80	76-81	60-78	71-79	75-80	53-75	66-77	72-78	49-71	60-74	69-77
4	80+	80+	81+	78+	79+	80+	75+	77+	78+	71+	74+	77+
5	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

PECO ENERGY

PECO Energy Company
2301 Market Street
PO Box 8699
Philadelphia, PA 19101-8699
215 841 4000

March 31, 1994

Mr. Paul Yarnell
Department of Environmental Resources
One Ararat Boulevard
Harrisburg, PA 17110

Dear Mr. Yarnell:

Subject: Peach Bottom Atomic Power Station NPDES Permit No. PA0009733

The following information is being provided as a follow up to our letter dated February 24, 1994 (enclosed) concerning the operation of Peach Bottom Atomic Power Station at rerated power levels and the NPDES discharge permit. In that letter we indicated that additional calculations would be required to complete the cooling tower matrix. Enclosed is the completed matrix with the following revisions:

1) Two columns of river water temperatures have been added to the cooling tower operation matrix. This accounts for one rerated unit in operation with 2 or 3 circulating water pumps running, while the other unit is shutdown.

2) Corrections to river temperatures for specific plant conditions have been made. The new river temperatures now display consistency with the balance of the matrix.

In addition, we are requesting that the definition of "Average Daily Temperature" contained in Table 1, Paragraph 2.D, be amended to read, "the arithmetic means of at least six measurements during a 24-hour period." The basis for this request is typically, all river temperature measurements are within ± 1 degree F. for a given day during the summer tower season. During the spring and fall, the river temperature does not change more than 1 or 2 degrees F. in a given day. Given the slow changing dynamics associated with river temperature, six measurements in a 24 hour period (versus 12 measurements) will provide sufficient data for calculating the 7-day moving average. Additional measurements per day do not necessarily provide further useful data for calculation purposes.

If you have any questions or require additional information, please contact me at (215) 841-5177.

Sincerely,

Robert M. Matty, Jr.
Engineer
Environmental Affairs

Attachment

bcc:	J. M. Madara, Jr.	w/o	attachment
	G. R. Rainey	"	"
	G. M. Morley	"	"
	T. J. Niessen	"	"
	G. D. Edwards	"	"
	J. M. Armstrong	"	"
	W. F. McElroy	"	"
	G. A. Hunger	w/	attachment
	E. J. Cullen	"	"
	M. C. Kray	"	"
	A. J. Wasong	"	"
	A. D. Odell	"	"
	C. A. Harkins	"	"
	CCD	"	"

TABLE 1 – NUMBER OF COOLING TOWERS REQUIRED BASED ON THE NUMBER OF CIRCULATING WATER PUMPS OPERATING AND INLET WATER TEMPERATURE (7-DAY MOVING AVERAGE)

COMBINED 2 UNIT REACTOR POWER LEVEL

REQUIRED NUMBER OF TOWERS	650 - 1339 MWTH PUMPS 2	3	4	1340 - 1989 MWTH PUMPS 2	3	4	1990 - 2649 MWTH PUMPS 2	3	4	2650 - 2979 MWTH PUMPS 2	3	4	2980 - 3309 MWTH PUMPS 2	3	4	5	6
0	32-80	32-82	32-85	32-69	32-77	32-83	32-51	32-68	32-80	32-46	32-59	32-78	32-45	32-53	32-76	32-78	32-80
1	80+	82+	85+	69-81	77-83	83-86	51-72	68-78	80-83	46-60	59-75	78-81	45-49	53-68	76-80	78-81	80-82
2	- -	- -	- -	81+	83+	86+	72+	78+	83+	60+	75-85	81-85	49-81	68-81	80-84	81-84	82-85
3	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	85+	85+	81+	81+	84+	84+	85+
4	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
5	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

RERATED 1 UNIT FULL POWER

CORRECTED VALUES

REQUIRED NUMBER OF TOWERS	3310 - 3639 MWTH PUMPS 2	3	4	5	6	3640 - 3969 MWTH PUMPS 4	5	6	3970 - 4299 MWTH PUMPS 4	5	6	4300 - 4629 MWTH PUMPS 4	5	6	4630 - 4959 MWTH PUMPS 4	5	6
0	- -	32-52	32-73	32-78	32-79	32-69	32-75	32-77	32-65	32-72	32-76	- -	32-69	32-73	- -	32-65	32-71
1	32-47	52-64	73-78	78-80	79-81	69-76	75-79	77-80	65-73	72-77	76-79	32-69	69-74	73-77	32-64	65-72	71-76
2	47-80	64-80	78-82	80-83	81-84	76-81	79-82	30-83	73-79	77-81	79-82	69-76	74-79	77-81	64-75	72-78	76-79
3	80+	80+	82+	83+	84+	81+	82+	83-87	79-85	81-85	82-85	76-84	79-83	81-84	75-82	78-83	79-83
4	- -	- -	- -	- -	- -	- -	- -	87+	85+	85+	85+	84+	83+	84+	82+	83+	83+
5	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

RERATED 2 UNIT FULL POWER

REQUIRED NUMBER OF TOWERS	4960 - 5289 MWTH PUMPS 4	5	6	5290 - 5609 MWTH PUMPS 4	5	6	5610 - 5939 MWTH PUMPS 4	5	6	5940 - 6269 MWTH PUMPS 4	5	6	6270 - 6599 MWTH PUMPS 4	5	6	6600 - 6916 MWTH PUMPS 4	5	6
0	- -	32-60	32-68	- -	- -	32-65	- -	- -	32-61	- -	- -	32-56	- -	- -	32-53	- -	- -	32-51
1	32-56	60-68	68-74	32-53	32-64	65-71	32-49	32-59	61-68	32-47	32-54	56-64	32-46	32-51	53-59	32-46	32-49	51-55
2	56-72	68-76	74-78	53-68	64-73	71-76	49-60	59-71	68-75	47-53	54-66	64-72	46-49	51-64	59-69	45-47	49-52	55-64
3	72-81	76-82	78-82	68-80	73-80	76-81	60-78	71-79	75-80	53-75	66-77	72-78	49-71	60-74	69-77	47-53	52-72	64-73
4	81+	82+	82+	80+	80+	81+	78+	79+	80+	75+	77+	78+	71+	74+	77+	53+	72+	73+
5	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

CORRECTED VALUE

TABLE 1 - NUMBER OF COOLING TOWERS REQUIRED BASED ON THE NUMBER OF CIRCULATING WATER PUMPS OPERATING AND INLET WATER TEMPERATURE (7- Y MOVING AVERAGE)

COMBINED POWER LEVEL (2 L - 200%)

REQUIRED NUMBER OF TOWERS	20% - 40% PUMPS			41% - 60% PUMPS			61% - 80% PUMPS			- 90% PUMPS			91% - 100% PUMPS				
	2	3	4	2	3	4	2	3	4	2	3	4	2	3	4	-	6
0	32-80	32-82	32-85	32-69	32-77	32-83	32-51	32-68	32-80	32-46	32-59	32-78	32-53	32-64	32-76	32-78	32-80
1	80+	82+	85+	69-81	77-83	83-86	51-72	68-78	80-83	46-60	59-75	78-81	53-65	64-72	76-80	78-81	80-82
2	- -	- -	- -	81+	83+	86+	72+	78+	83+	60+	75-85	81-85	65-86	72-84	30-84	81-84	82-85
3	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	85+	85+	86+	84+	84+	84+	85+
4	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
5	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

REQUIRED NUMBER OF TOWERS	101% - 110% PUMPS			111% - 120% PUMPS			121% - 130% PUMPS			131% - 140% PUMPS			141% - 150% PUMPS			151% - 160% PUMPS	
	4	5	6	4	5	6	4	5	6	4	5	6	4	5	6	4	5	6
0	32-73	32-78	32-79	32-69	32-75	32-77	32-65	32-72	32-76	- -	32-69	32-73	- -	32-65	32-71	- -	32-60	32-68
1	73-78	78-80	79-81	69-76	75-79	77-80	65-73	72-77	76-79	32-69	69-74	73-77	32-64	65-72	71-76	32-68	60-68	68-74
2	78-82	80-83	81-84	76-81	79-82	80-83	73-79	77-81	79-82	69-76	74-79	77-81	64-75	72-78	76-79	68-72	68-76	74-78
3	82+	83+	84+	81+	82+	83-87	79-85	81-85	82-85	76-84	79-83	81-84	75-82	78-83	79-83	72-81	76-82	78-82
4	- -	- -	- -	- -	- -	87+	85+	85+	85+	84+	83+	84+	82+	83+	83+	81+	82+	82+
5	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

REQUIRED NUMBER OF TOWERS	161% - 170% PUMPS			111% - 180% PUMPS			181% - 190% PUMPS			191% - 200% PUMPS		
	4	5	6	4	5	6	4	5	6	4	5	6
0	- -	- -	32-65	- -	- -	32-61	- -	- -	32-56	- -	- -	32-53
1	32-53	32-64	65-71	32-49	32-59	61-68	32-47	32-54	56-64	32-46	32-51	53-59
2	53-68	64-73	71-76	49-60	59-71	68-75	47-53	54-66	64-72	46-49	51-60	59-69
3	68-80	73-80	76-81	60-78	71-79	75-80	53-75	66-77	72-78	49-71	60-74	69-77
4	80+	80+	81+	78+	79+	80+	75+	77+	78+	71+	74+	77+
5	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -