Duke Power Company
Electric System Support Department
13339 Hagers Ferry Road
Huntersville, NC 28078-7929

DUKE POWER

September 20, 1995

Mr. Timothy M. Eleazer
Industrial and Agricultural Wastewater Division
South Carolina Department of Health
and Environmental Control
2600 Bull Street
Columbia, SC 29201

Subject: Catawba Nuclear Station -NPDES Permit No. SC0004278
Revised Thermal Limitation Request
File: CN-702.13

Dear Mr. Eleazer:

Upon review of the proposed thermal limitations which were requested for outfall 001 it has been determined that the station will not be able to meet these limits during typical hot summer operational conditions. Therefore, we are requesting that the wording be changed to read as follows:

- The temperature of the effluent shall not exceed a weekly average temperature of 50°F when the weekly average intake temperature is below 36.5°F. The effluent shall not exceed two times the intake temperature minus 23 °F when the intake temperature ranges from 36.5 °F to 55 °F. When the intake temperature exceeds 55 °F the effluent shall not exceed a weekly average temperature of 95 °F.

We are requesting that the daily average temperature limitation of 95 °F be changed to a weekly average temperature. Attached for your use please find the original request submitted on October 14, 1994, that was based on station operational data through 1992.

This request is made based upon a review of the past three years of thermal data for the station. Please find attached a spreadsheet showing how the presently worded thermal limitation would effect the Catawba facility. This spreadsheet shows July and August temperature data from outfall 001 and compares this data with the limitations in the October 14, 1995 memo. This shaded portions of the spreadsheet shows days in which Catawba would not meet the limitation.

JE03

There were a total of 29 days in 1995 and 22 days in 1993 that would have resulted in permit violations under the previously proposed wording. As can be seen on the table, we feel that these 51 days which were over the proposed limit are due primarily to warm intake temperatures which the station can not control. The temperature change contributed by the station was very low on many of the days which are shaded in the table.

On going environmental monitoring studies in Lake Wylie support this request. We are requesting that you meet with Bruce Gibson to discuss this matter. Should you have any questions concerning this letter please give John Estridge a call at (704) 875-5965.

Sincerely,

J. S. Carter by JTE

John S. Carter, Technical Systems Manager
Environmental Division, Water Protection

jte/477

cc: NRC Document Distribution List

bc: M.A. Lascara - MF03A5
C.T. Peed - CN01EM
A.P. Jackson - CN03CH
J.T. Harris - CN01EM
W.J. Davis - CN01CH
G.S. Rice - PB05E
J.K. Knight - MG03A3
D.J. Deagan - MG03A3

CATAWBA NUCLEAR STATION
OUTFALL 001 TEMPERATURE EVALUATION

DATE	1995	1995	1995	1995	1995	1994	1994	1994	1994	1993	1993	1993	1993
	Intake T	001 DISCH TEMP	7 DAY AVG	7 DAY AVG > 93.2	DAILY AVG > 95	001 DISCH TEMP	7 DAY AVG	7 DAY AVG > 93.2	DAILY AVG > 95	001 DISCH TEMP	7 DAY AVG	7 DAY AVG > 93.2	DAILY AVG > 95
1-Jul	84.20	88.02	87.68	FALSE	FALSE	88.32	88.54	FALSE	FALSE	91.89	90.26	FALSE	FALSE
2-Jul	85.22	88.74	88.00	FALSE	FALSE	89.13	88.54	FALSE	FALSE	91.93	90.70	FALSE	FALSE
3-Jul	86.78	89.42	88.38	FALSE	FALSE	89.15	88.54	FALSE	FALSE	92.01	90.92	FALSE	FALSE
4-Jul	86.39	89.51	88.67	FALSE	FALSE	90.04	88.89	FALSE	FALSE	92.25	91.23	FALSE	FALSE
5-Jul	87.92	89.97	88.87	FALSE	FALSE	91.00	89.21	FALSE	FALSE	92.23	91.49	FALSE	FALSE
6-Jul	86.43	90.24	89.12	FALSE	FALSE	91.60	89.63	FALSE	FALSE	92.07	91.89	FALSE	FALSE
7-Jul	86.22	90.09	89.73	FALSE	FALSE	91.47	90.10	FALSE	FALSE	92.26	92.09	FALSE	FALSE
8-Jul	88.01	90.17	89.73	FALSE	FALSE	91.52	90.56	FALSE	FALSE	92.23	92.14	FALSE	FALSE
9-Jul	87.89	90.40	89.97	FALSE	FALSE	90.36	90.73	FALSE	FALSE	92.47	92.22	FALSE	FALSE
10-Jul	88.72	90.97	90.19	FALSE	FALSE	90.25	90.89	FALSE	FALSE	92.77	92.33	FALSE	FALSE
11-Jul	88.94	92.01	90.55	FALSE	FALSE	89.73	90.85	FALSE	FALSE	93.89	92.56	FALSE	FALSE
12-Jul	90.41	92.71	90.94	FALSE	FALSE	91.73	90.91	FALSE	FALSE	93.13	92.69	FALSE	FALSE
13-Jul	90.53	92.46	91.26	FALSE	FALSE	92.01	90.97	FALSE	FALSE	93.59	92.90	FALSE	FALSE
14-Jul	90.27	92.41	91.59	FALSE	FALSE	91.60	90.99	FALSE	FALSE	92.28	92.91	FALSE	FALSE
15-Jul	89.74	93.10	92.01	FALSE	FALSE	92.54	91.13	FALSE	FALSE	93.11	93.03	FALSE	FALSE
16-Jul	89.97	94.12	92.54	FALSE	FALSE	93.11	91.52	FALSE	FALSE	94.81	93.37	TRUE	FALSE
17-Jul	90.78	94.06	92.98	FALSE	FALSE	93.08	91.93	FALSE	FALSE	95.22	93.72	TRUE	TRUE
18-Jul	91.71	94.40	93.32	TRUE	FALSE	92.75	92.36	FALSE	FALSE	95.10	93.89	TRUE	TRUE
19-Jul	90.76	93.21	93.39	TRUE	FALSE	93.07	92.59	FALSE	FALSE	93.60	93.96	TRUE	FALSE
20-Jul	89.91	92.57	93.41	TRUE	FALSE	93.82	92.85	FALSE	FALSE	94.88	94.14	TRUE	FALSE
21-Jul	89.20	92.99	93.49	TRUE	FALSE	93.77	93.16	FALSE	FALSE	94.47	94.46	TRUE	FALSE
22-Jul	90.31	93.44	93.54	TRUE	FALSE	92.79	93.20	FALSE	FALSE	94.84	94.70	TRUE	FALSE
23-Jul	89.89	93.34	93.43	TRUE	FALSE	92.54	93.12	FALSE	FALSE	95.30	94.77	TRUE	TRUE
24-Jul	89.33	92.65	93.23	TRUE	FALSE	92.47	93.03	FALSE	FALSE	94.90	94.73	TRUE	FALSE
25-Jul	90.63	93.36	93.08	FALSE	FALSE	92.67	93.02	FALSE	FALSE	94.66	94.66	TRUE	FALSE
26-Jul	90.50	93.58	93.13	FALSE	FALSE	92.15	92.89	FALSE	FALSE	94.72	94.82	TRUE	FALSE
27-Jul	89.87	92.65	93.14	FALSE	FALSE	91.90	92.61	FALSE	FALSE	94.66	94.79	TRUE	FALSE
28-Jul	89.06	93.37	93.20	FALSE	FALSE	91.23	92.25	FALSE	FALSE	95.10	94.88	TRUE	TRUE
29-Jul	89.77	93.79	93.25	TRUE	FALSE	91.50	92.07	FALSE	FALSE	95.55	94.98	TRUE	TRUE
30-Jul	90.94	93.83	93.32	TRUE	FALSE	91.37	91.90	FALSE	FALSE	95.27	94.98	TRUE	TRUE
31-Jul	89.91	93.98	93.51	TRUE	FALSE	91.49	91.76	FALSE	FALSE	95.11	95.01	TRUE	TRUE
				10								16	7

CATAWBA NUCLEAR STATION
OUTFALL 001 TEMPERATURE EVALUATION

DATE	1995	1995	1995	1995	1995	1994	1994	1994	1994	1993	1993	1993	1993
	Intake T	001 DISCH TEMP	7 DAY AVG	7 DAY AVG > 93.2	DAILY AVG > 95	001 DISCH TEMP	7 DAY AVG	7 DAY AVG > 93.2	DAILY AVG > 95	001 DISCH TEMP	7 DAY AVG	7 DAY AVG > 93.2	DAILY AVG > 95
1-Aug	90.68	94.04	331.28	TRUE	FALSE	91.41	329.38	TRUE	FALSE	94.20	332.20	TRUE	FALSE
2-Aug	90.15	93.90	331.32	TRUE	FALSE	91.66	329.32	TRUE	FALSE	93.87	332.09	TRUE	FALSE
3-Aug	89.34	94.16	331.51	TRUE	FALSE	91.97	329.33	TRUE	FALSE	93.85	331.99	TRUE	FALSE
4-Aug	89.72	93.80	331.56	TRUE	FALSE	92.10	329.44	TRUE	FALSE	93.04	331.74	TRUE	FALSE
5-Aug	88.29	93.74	331.56	TRUE	FALSE	91.76	329.47	TRUE	FALSE	92.71	331.38	TRUE	FALSE
6-Aug	87.56	93.28	331.49	TRUE	FALSE	91.52	329.49	TRUE	FALSE	92.72	331.06	TRUE	FALSE
7-Aug	87.49	92.91	93.69	TRUE	FALSE	91.31	91.67	FALSE	FALSE	91.40	93.11	FALSE	FALSE
8-Aug	86.74	91.45	93.32	TRUE	FALSE	91.33	91.66	FALSE	FALSE	90.31	92.56	FALSE	FALSE
9-Aug	86.55	91.66	93.00	FALSE	FALSE	91.27	91.61	FALSE	FALSE	90.46	92.07	FALSE	FALSE
10-Aug	87.45	92.61	92.78	FALSE	FALSE	91.55	91.55	FALSE	FALSE	90.76	91.63	FALSE	FALSE
11-Aug	88.66	93.22	92.70	FALSE	FALSE	91.75	91.50	FALSE	FALSE	90.70	91.29	FALSE	FALSE
12-Aug	90.46	93.24	92.63	FALSE	FALSE	91.80	91.50	FALSE	FALSE	89.39	90.82	FALSE	FALSE
13-Aug	91.02	93.60	92.67	FALSE	FALSE	91.83	91.55	FALSE	FALSE	90.51	90.50	FALSE	FALSE
14-Aug	92.07	93.95	92.82	FALSE	FALSE	91.57	91.58	FALSE	FALSE	90.43	90.36	FALSE	FALSE
15-Aug	92.73	94.10	93.20	FALSE	FALSE	90.79	91.51	FALSE	FALSE	91.04	90.47	FALSE	FALSE
16-Aug	92.29	94.96	93.67	TRUE	FALSE	90.91	91.46	FALSE	FALSE	90.98	90.54	FALSE	FALSE
17-Aug	92.52	94.76	93.97	TRUE	FALSE	90.30	91.28	FALSE	FALSE	91.32	90.62	FALSE	FALSE
18-Aug	92.71	95.23	94.26	TRUE	TRUE	90.01	91.03	FALSE	FALSE	92.31	90.85	FALSE	FALSE
19-Aug	91.03	94.87	94.50	TRUE	FALSE	89.83	90.75	FALSE	FALSE	92.16	91.25	FALSE	FALSE
20-Aug	89.38	94.20	94.58	TRUE	FALSE	89.07	90.35	FALSE	FALSE	91.75	91.43	FALSE	FALSE
21-Aug	88.81	93.01	94.45	TRUE	FALSE	88.49	89.91	FALSE	FALSE	91.51	91.58	FALSE	FALSE
22-Aug	89.44	92.84	94.27	TRUE	FALSE	87.95	89.51	FALSE	FALSE	92.33	91.77	FALSE	FALSE
23-Aug	89.61	93.97	94.13	TRUE	FALSE	88.83	89.21	FALSE	FALSE	91.91	91.90	FALSE	FALSE
24-Aug	88.66	93.81	93.99	TRUE	FALSE	89.08	89.04	FALSE	FALSE	91.79	91.97	FALSE	FALSE
25-Aug	88.25	93.75	93.78	TRUE	FALSE	89.10	88.91	FALSE	FALSE	91.58	91.86	FALSE	FALSE
26-Aug	87.11	93.06	93.52	TRUE	FALSE	89.50	88.86	FALSE	FALSE	91.81	91.81	FALSE	FALSE
27-Aug	85.32	91.36	93.11	FALSE	FALSE	89.78	88.96	FALSE	FALSE	92.45	91.91	FALSE	FALSE
28-Aug	84.41	90.30	92.73	FALSE	FALSE	89.91	89.17	FALSE	FALSE	92.06	91.99	FALSE	FALSE
29-Aug	85.73	90.59	92.41	FALSE	FALSE	90.00	89.46	FALSE	FALSE	92.28	91.98	FALSE	FALSE
30-Aug	87.53	90.18	91.86	FALSE	FALSE	84.95	88.90	FALSE	FALSE	93.23	92.17	FALSE	FALSE
31-Aug	84.92	90.58	91.40	FALSE	FALSE	87.90	88.73	FALSE	FALSE	93.91	92.47	FALSE	FALSE
				19	1							22	

Duke Power Company
Generation Services Department
13339 Hagers Ferry Road
Huntersville, NC 28078-7929

DUKE POWER

October 14, 1994

Mr. Bruce Gibson
Water Quality Assessment Division
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

Subject: Catawba Nuclear Station
NPDES Permit #SC0004278
316(a) Demonstration
Meeting Summary
File: CN-702.13

Dear Mr. Gibson:

Bruce, thank you for setting up the meeting on October 10, 1994, with you, Tim Eleazar of SCDHEC, Tim Harris of Catawba Nuclear Station (CNS), and me to review and discuss the 316(a) demonstration reports for CNS. The following is a summary of our meeting and proposed permit revisions. Our discussion focused on the substitution of the EPA nomograph for delta T limits in the present CNS permit, review of thermal plume data, and continuation of the on-going Lake Wylie environmental monitoring program: The following modifications of the thermal limits in the NPDES permit included the assignment of a thermal mixing zone at outfall 001 with the proposed limits:

**** The temperature of the effluent shall be such as not to exceed a weekly average temperature of 10°C (50°F) when the weekly average intake temperature is below 2.5°C (36.5°F), exceed two times the intake temperature (°F) minus 23 when the weekly average intake temperature ranges from 2.5°C (36.5°F) to 12.8°C (55°F), exceed a weekly average temperature of 34°C (93.2°F), and exceed a daily average temperature of 35°C (95°F).

A marked up copy of Part I page 3 of 31 for outfall 001 in the NPDES permit is attached with a suggested format for the permit modification. If you have any

questions or suggestions once you have reviewed these proposed thermal modifications, please call me (704-875-5968). For incorporation of these changes with other requested modifications of this permit, please contact John Estridge (704-875-5965).

Also thanks for sharing of your current monitoring program to determine metals and pesticide concentration in the tissue of largemouth bass and catfish. I will forward this information and your suggestions on environmental monitoring to our monitoring staff to consider inclusion in-on-going environmental programs to address public concerns and support NPDES permitting of DPC facilities.

Sincerely,

R. E. Lewis

Ronald E. Lewis. Scientist
Environmental Division
Generation Services Department

REL

Attachment

xc: Tim Eleazer, SCDHEC

1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Phase II

1. During the period beginning on May 1, 1994 and lasting through the expiration date, the Permittee is authorized to discharge from outfall(s) serial number(s) 001: once through cooling water, nuclear service water, cooling tower blowdown (discharged via internal Outfall 005) and liquid radiological wastes (treated and discharged via internal Outfall 004) to Lake Wylie.

Such discharge shall be limited and monitored by the Permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS kg/day (lbs/day) Monthly Average	kg/day (lbs/day) Daily Max.	Other Units (Specify) Monthly Average	Other Units (Specify) Daily Max.	MONITORING REQUIREMENTS Measurement Frequency	Sample Type
Flow-m3/day (MGD)	-	-	MR	MR	Daily	Continuous**
***Total Residual Chlorine	-	-	less than 0.10 mg/l		1/week	Multiple Grabs*
Intake Temperature	-	-	-	-	Daily	Continuous
****Discharge Temperature	-	-	-	-	Daily	Continuous
~~Temperature rise (April-September)~~			~~5.6°C(10.0°F)~~		~~Daily~~	~~Calculation~~
~~Temperature rise (October-March)~~			~~7.8°C(14.0°F)~~		~~Daily~~	~~Calculation~~

*See Part III, Special Condition #16
**See Part III, Special Condition #17
***See Part III, Special Condition #18
MR = Monitor and Report
Based on a flow of 82.5 MGD

**** ← Insert proposed thermal limit language in letter.

No chromium and zinc based maintenance chemicals will be allowed in the cooling tower.

2. The pH shall be monitored and reported once per week by grab sample.

3. There shall be no discharge of floating solids or visible foam in other than trace amounts; nor, shall the effluent cause a visible sheen on the receiving waters.

4. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): The intake temperature shall be monitored at or near the plant intake. All other parameters shall be monitored at or near the point of discharge from Outfall 001 prior to mixing with the receiving waters, unless otherwise specified above.