



THIS DOCUMENT CONTAINS  
POOR QUALITY PAGES

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

NRC FILE

In the Matter of	)	
	)	
DUKE POWER COMPANY	)	Docket Nos. STN 50-488
	)	50-489
(Perkins Nuclear Station,	)	50-490
Units 1, 2 and 3)	)	

APPLICANT'S RESPONSE AND OBJECTIONS  
TO INTERVENORS' REQUEST FOR PRO-  
DUCTION OF DOCUMENTS, INTERROGATORIES,  
AND REQUEST TO ADMIT

1. Attachment Nos. 1a through 1t are Xerox copies of the requested documents. Applicant admits the genuineness of the documents and notations thereon and admits that all of the statements and notations contained in the documents were made by its officers or employees in the conduct of their work responsibilities.

2(a). Applicant denies that its existing "rule of thumb" is 1.7 acres for fossil and 2.5 acres nuclear per MWe. It does not have at this time any "rule of thumb" concerning the surface area required to support the lake cooling alternative for baseload thermal power stations.

2(b). Applicant admits only that the State of North Carolina assigned a 5° F, 3500-acre mixing zone for the McGuire Nuclear Station.

2(c). Applicant cannot respond for the State of North Carolina.

2(d). Applicant denies that a "rule of thumb" 1.46 acres per nuclear MWe is acceptable at the Lake Norman McGuire Station.

2(e). Applicant cannot speak for EPA or the State of North Carolina.

3. As previously stated on the record, Applicant participated in Appalachian Power v. Train, 9 ERC 1033, and in Utility Water Act Group activities.

4. Applicant has no firm plans for the use of Sites "D" or "E" on Lake Norman.

5. Applicant does not now have a planned size in MWe for utilization at Sites "D" and "E".

6. Applicant believes that question number 6 is not relevant for the reason that the Atomic Safety and Licensing Board has previously ruled on the need for power.

7. Applicant has not performed any engineering studies to determine the projected effect on water levels at Lake Norman or on the production of hydroelectric energy from Cowans Ford Hydro Station which would be caused by the operation of a thermal generating station at Lake Norman Site "N-18".

8. Applicant's response to Interrogatory No. 8 is the same as its response to Interrogatory No. 7.

9. Applicant does not at this stage of the siting study propose to construct a Carter Creek type reservoir for use in connection with a thermal station as the "N-18" Site. Applicant has no document in its files other than those previously submitted showing that a Carter Creek type reservoir would not be required at Site "N-18".

10. Attachment 10 is a copy of the requested large map. Applicant did not respond to the previous question 3(w) as stated in the Interrogatory. Information which Applicant has concerning the "N-18" Site has been made available and reviewed by the Intervenors.

11. Applicant has previously responded to the Staff concerning the methodologies, constraints and necessary decisions and Intervenor is directed to our filing of August 31, 1978.

12. Applicant's previous response to Interrogatories Nos. 3(bb) and 3(cc) remains accurate. Contrary to the factors advanced by Intervenors in this interrogatory, the factors considered by Applicant are set forth in the documentation previously furnished to the Board and parties.

13. Applicant objects to this question. It is beyond the scope of interrogatories.

14. Applicant did not remove in the coarse selection process the "N-18" Site. The "N-18" Site was excluded from further evaluation in the final analysis as described in the Phase I Siting Study Summary Report.

15. Based on reconnaissance level information, both sites have acceptable water quantity characteristics for the proposed development. Requirements imposed by the State necessitated a change in the original plans and the construction of a supplemental storage reservoir at the Perkins site. The same may be true for the "N-18" Site. The reallocation of upstream and downstream hydroelectric resources may offset the capital cost of a new reservoir.

16. Based on reconnaissance level information Applicant admits that the "N-18" Site would require less new railroad right-of-way clearing than would development of rail access into the Perkins Site. Applicant cannot determine that the "N-18" Site is clearly superior in this regard.

17. Based on reconnaissance level information Applicant believes that the "N-18" Site is not clearly superior to the Perkins Site in regard to location of new transmission lines.

The Perkins Site requires approximately 16 miles of transmission lines and the Lake Norman "N-18" Site requires approximately 29 miles.

18. Applicant denies that the "N-18" Site is clearly superior to the Perkins Site in regard to population density in that, based upon reconnaissance level information, the population within 50 miles of the Perkins Site is 1.5 million and the population within 5 miles is approximately 4500, whereas the population within 50 miles of the Lake Norman "N-18" Site is 1.4 million and the population within 5 miles is estimated to be 11,500.

19. Applicant denies that the "N-18" Site is clearly superior to the Perkins Site in regard to reliable water supply in that based upon reconnaissance level information the Lake Norman "N-18" Site can operate satisfactorily with a recurrence of the historic drought as can the Perkins Station with Carter Creek.

20. Applicant denies that the "N-18" Site is clearly superior to the Perkins Site in regard to the control over water supply. Applicant proposes to construct for commitment to the Perkins Station adequate water supplies and has adequate water supplies available to carry the "N-18" Site through a recurrence of the historic drought.

21. Applicant denies that the "N-18" Site is clearly superior to the Perkins Site in regard to location of nearest large population center since Statesville is 6.5 miles north-east of the "N-18" Site and Winston-Salem is 17 miles north-northeast of the Perkins Site.

22. Based upon its reconnaissance level information concerning subsurface conditions and site excavations, Applicant cannot determine whether there is any superiority of the "N-18" Site over the Perkins Site. Applicant knows that excavations at the Perkins Site will approach 50 feet and that excavations at the "N-18" Site will be to at least 60 feet.

23. Applicant denies that the "N-18" Site is clearly superior to the Perkins Site in regard to site-opening costs. Current detailed site-opening cost estimates for the "N-18" Site have not been made.

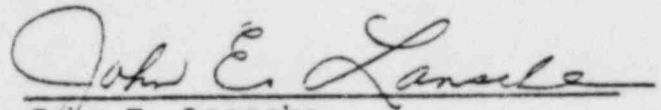
24. Based upon reconnaissance level information Applicant denies that the "N-18" Site is clearly superior to the Perkins Site in regard to water eutrophication in that both sites are located adjacent to major Piedmont Carolina rivers with similar water quality characteristics.

25. Applicant has no documents concerning the effect of

its proposed "N-18" plant site on property development  
and real estate sales on Lake Norman.

Dated: January 16, 1979

Respectfully submitted,

A handwritten signature in cursive script, reading "John E. Lansche", with a horizontal line underneath.

John E. Lansche  
Assistant General Counsel  
Duke Power Company  
P. O. Box 33189  
Charlotte, North Carolina 28242

STATE OF NORTH CAROLINA )  
 )  
COUNTY OF MECKLENBURG )

Donald B. Blackmon, first being duly sworn, deposes and says:

That he is a Design Engineer, Design Engineering Department, Duke Power Company, and that he has read the attached responses made pursuant to 10 CFR 2.740b and that they are true, except as to those matters stated on information and belief, and as to those matters he believes them to be true.

Donald B. Blackmon  
Donald B. Blackmon

SWORN to and subscribed before me  
this 16<sup>th</sup> day of January, 1979.

Robert J. Egan  
Notary Public

My Commission expires: 8/15/81

(Notarial Seal)



## DUKE POWER COMPANY

GENERAL OFFICES

422 SOUTH CHURCH STREET

CHARLOTTE, N. C. 28242

TELEPHONE AREA 704  
373-4011

March 29, 1978

Mr. Richard G. Stoll, Jr.  
Office of General Counsel  
Environmental Protection Agency  
401 M Street, SW  
Washington, D. C. 20460

Re: Effluent Guidelines and Standards  
Steam Electric Generating Point Source Category  
Duke Power Company Comments  
EPA Proposed Rulemaking 40CFR Part 423  
File No: F-29.3

Dear Sir:

Duke Power Company has reviewed the referenced rulemaking published in the March 3, 1978 Federal Register and would like to commend the EPA in its efforts to incorporate cost benefit evaluations in the consideration of requests by steam electric generating point sources for variances pursuant to the Clean Water Act.

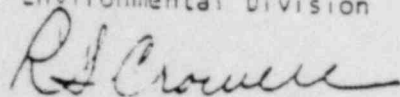
In addition, we believe that EPA should make it emphatic, to states with permitting authority, that economic factors are a relevant and necessary part of environmental protection. ~~Indeed,~~ It is our opinion that a State which has permit-issuing authority should be required to consider economic factors when evaluating variance requests, realizing that the State may impose more stringent limitations than required under Federal law.

We hope that as responsive stewards of our resources EPA will pursue the usefulness of the cost benefit analysis in all areas where development and evaluation of practical standards and guidelines is the goal.

Duke Power Company appreciates this opportunity to submit written comments for your consideration on the proposed rulemaking.

Very truly yours,

L. C. Dail, Chief Engineer  
Civil-Environmental Division



By: R. S. Crowell  
Technical Associate

RSC:cs

ES  
#1

DIVISION OF ENVIRONMENTAL MANAGEMENT

August 16, 1978

REC-10  
AUG 24 1978  
DUKE POWER COMPANY  
DESIGN ENGINEERING  
ENVIRONMENTAL SECTION

Duke Power Company  
General Offices  
422 South Church Street  
Charlotte, North Carolina 28242

Attention S. B. Hager, Chief Engineer  
Civil - Environmental Division

SUBJECT: McGuire Nuclear Station  
NPDES Permit No. NCO024392  
316(a) Demonstration

Gentlemen:

Duke Power Company's study plan for conducting a 316(a) demonstration for the McGuire Nuclear Station has been reviewed and evaluated by department personnel. The study, as proposed by Duke Power Company, does address the requirements as specified in the McGuire NPDES Permit. Our approval of the study is being based on correspondence dated June 27, 1978, subject being McGuire Nuclear Station 316(a) demonstration, in conjunction with correspondence between Department of Natural Resources and Community Development staff and Duke Power Company's environmental personnel. We also believe the proposed program sufficient to determine the extent, if any, of interaction between McGuire and Marshall stations located on Lake Norman.

The Department will expect quarterly meetings with designated personnel to review data to allow continual evaluation of the program.

Sincerely,

L. P. Benton, Chief  
Water Quality Section

- cc: Mr. Charles A. Deway, Jr. ✓
- Dr. Dave Anderson
- Mr. Robert A. Carter
- Mr. A. F. McRorie
- Mr. Charles Kaplan, EPA
- Mr. Rex Gleason

DUKE POWER COMPANY

P. O. Box 2178

CHARLOTTE, N. C. 28242

#2

XC: BES WDF  
DWA JEH  
WJG WTH  
RSC  
WILLIAM S. LEE  
PRESIDENT &  
CHIEF OPERATING OFFICER  
JOHN 3-4883

CARL HORN, JR.  
CHAIRMAN OF THE BOARD &  
CHIEF EXECUTIVE OFFICER  
(704) 373-4884

May 4, 1978

MAY 08 1978  
DUKE POWER COMPANY  
CIVIL/ENV. DIVISION

Mr. A. F. McRorie  
Acting Director  
North Carolina Department of Natural  
Resources and Community Development  
P. O. Box 27687  
Raleigh, North Carolina 27611

Re: Permit No. NC0024392  
Duke Power Company McGuire Nuclear Station

Dear Mr. McRorie:

Duke Power Company received the above-referenced NPDES permit for the McGuire Nuclear Station on Friday afternoon, April 7, 1978. Duke has reviewed its contents and submits the following comments:

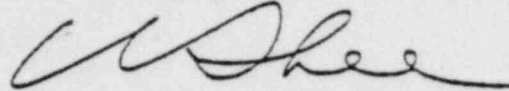
Part I A. (1) specifies monitoring requirements for out-fall Serial No. 001-once through cooling water. In order to implement the monitoring required by Part I A. (1) of the McGuire NPDES permit, we will perform the following monitoring: (1) cooling water flow through the condenser, (2) discharge temperature at the effluent, and (3) temperature rise across the condenser. We will report this monitoring as specified in Part I C. (2). The remaining monitoring specified in Part I A. (1) will be included in the 316(a) demonstration.

Part I A. (3) specifies a weekly average of 22,500 GPD for Serial No. 003-domestic wastewater treatment. Since this permit was written, certain construction changes have been made which will result in a weekly average of 28,500 GPD. This change has been coordinated with the Regional Engineer and his staff. We suggest that the permit be changed to reflect construction changes.

Mr. A. F. McRorie  
May 4, 1978  
Page 2

Our comments contained herein reflect Duke's understanding of the permit. Should you have any questions, please advise.

Very truly yours,

A handwritten signature in cursive script, appearing to read 'W. S. Lee', written in dark ink.

William S. Lee

WSL/fhb

→ YCD *Pls - see attachment*

November 15, 1977

C. A. Dewey, Jr.

Re: McGuire Nuclear Station  
Lake Norman MIT Numerical Model  
Simulations for 1976 through August, 1977  
File No: MC-1444.00

*Chas*  
*11/21*

*#3*  
*Pls file with*  
*McGuire NPDES*  
*info - Thanks*  
*Chas*  
*11/22*

Lake Norman water temperatures with both McGuire and Marshall operational have been simulated for January 1976, through August, 1977. This period encompasses the extreme warm weather experienced in July, 1977, and the extremely cold 1976-1977 winter. Worst case capacity factors for Marshall and McGuire, and lake surface elevations for Lake Norman as presented in the ER-OLS for McGuire (Table 5.1.1-1) were used as inputs to the model. Comparison of significant results from this simulation (1976 - August, 1977) with those from the ER-OLS twenty-year simulation (1951-1970) are presented in the following table:

	<u>1976-Aug, 1977 Simulation</u>		<u>McGuire ER-OLS 20-Yr. Simulation</u>	
	<u>McGuire</u>	<u>Marshall</u>	<u>McGuire</u>	<u>Marshall</u>
Max. Discharge Temperature*	95°F (35.0°C)	93°F (33.9°C)	96°F (35.5°C)	96°F (35.5°C)
Max. 5°F (2.8°C) Above Background Isotherm Acreage*	3000	1200	2900	1100
Max. 30°F (32.2°C) Isotherm Acreage*	700	100	1300	500

\*Monthly Average Values

It is noted that neither McGuire nor Marshall would have violated their respective permits.

If there are any questions concerning these results please advise.

W. J. McCabe  
Asst. Design Engineer  
WJM/cs  
cc: R. F. Edmonds

*NPDES*  
*Limits*  
*1) McGuire not > 94°F*  
*2) Marshall not > 94°F for*  
*July/Aug/Sept*  
*Not > 92°F for 2 other*  
*months*

November 16, 1977

Memo to: L. C. Dail

Attn: D. W. Anderson

*CFL*  
*DWA*

Subject: McGuire Nuclear Station 316(a) Demonstration  
MC-702.15, MC-704.12

*MC-1407.15, MC-1415.12 attached* *Red copy direct*

We have reviewed your memo of 27 October 1977 and are aware that a 316 demonstration will be required for McGuire Nuclear Station. While we can understand the desire to leave the permit as it is, we have pointed out two things: 1) that submittal of the 316(a) prior to the acquisition of at least a full year's data with both units operational will be almost meaningless and will surely result in a need to write a full report once both units have operated for a period of time; this duplication of effort will mean a sizable investment in manpower, and 2) writing a 316(a) without enough data and/or time to analyze and evaluate the results runs the risk of producing an inadequate report with severe consequences. A definition of exactly when a report must be filed is needed so we can plan accordingly.

We do not believe that it is too early to begin planning for a 316 demonstration; this is what we have been doing since we started on the McGuire studies five years ago. While not planning a 316 demonstration per se, we were designing and implementing a scientifically acceptable program to define the impact of the operation of McGuire upon the aquatic populations. While our programs were initially aimed at pre-construction and preoperational questions, our current programs are based upon meeting the NRC's Technical Specification requirements. McGuire's Tech Specs and Environmental Program Instructions (copy of each enclosed) have been under review by the NRC since April 1977; this is one of the first Tech Specs using the revised 4.8 Guide. No comments regarding the Tech Specs have been received from the NRC to date. A revision to Chapter 6 of the Environmental Report is planned which will reflect the final version of the Tech Specs. (Depending on legal decisions, a letter describing our preoperational and operational program may be written in lieu of a revision to Chapter 6). We don't believe a joint review of our environmental commitments to regulatory agencies is necessary. A thorough within-Unit review (enclosed) of our status regarding various commitments was performed last year. Currently a computerized commitment index (copy attached) is routinely issued by licensing. Also, the annual McGuire compliance visit by the NRC inspector for environmental items was completed recently; all items relating to our responsibility were in complete compliance. The regulatory commitments of which we are aware are found in the Environmental Report, Construction Permit, NPDES Permit, and draft Environmental Tech Specs.

In response to the four points for which you requested information be assembled, please see the already referenced information enclosed. We have been in the process of writing a more current description of our monitoring effort on Lake Norman. A final version of this is expected to be available in February 1978. The general format of these descriptions is also enclosed.

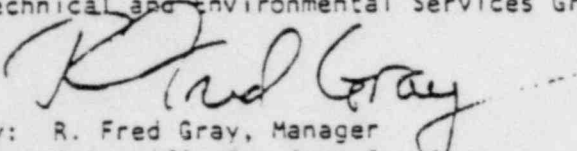
November 16, 1977  
L. C. Dail  
Attn: D. W. Anderson  
Page 2

Regarding the basic biological data components which will be needed in the 316 demonstration, these components were identified and agreed upon in our joint meeting over a year ago in preparation for writing the predictive 316 demonstration. We assume that the future 316 demonstration will have similar components, but we would be happy to review the components and a scheduling scheme with you. Mr. Ed Hogan is the project leader for McGuire, and he should be the contact person for the 316 demonstration.

One very important question remains to be addressed. The question is--what do Company (Design Engineering, Legal, Licensing, Steam Production, upper management, etc.) people think should be done to define the impact of competition/cumulative impact of McGuire and Marshall upon Lake Norman? This should also consider needs for information for the next 316 at Marshall. While we have developed a minimal sampling program to address this question, we would like a clear statement of what should be done so that we can develop a more definite program. A meeting of various departments may be necessary to decide on the statement of need. In addition, thought should be given to the information required to meet Mr. Lee's goal of determining if the results obtained will serve as a foundation for considering other sites for large thermal plants on Lake Norman.

If you have any questions regarding the information enclosed, contact J. Ed Hogan. Contact J. Ed Hogan, also, when meetings are arranged to discuss the matters noted above.

W. A. Haller, Manager  
Technical and Environmental Services Group

  
by: R. Fred Gray, Manager  
Scientific Services Section

WDA:JEH/sm

Enclosures

cc: W. S. Lee w/o attach.  
W. L. Porter " "  
C. A. Dewey " "  
K. S. Canady " "  
W. D. Adair " "  
B. E. Davis " "  
J. E. Hogan w/attach.

October 31, 1977

John Lansche

Re: McGuire NPDES Permit

The draft of subject permit attached to your letter of October 28 properly reflects my negotiations with Page Benton, and for the reasons outlined to you in my letter of October 11, I recommend we accept the permit subject to a typographical and detailed check by Richard Crowell.

W S Lee

WSL/s

cc C A Dewey  
~~Richard Crowell~~

RECEIVED  
NOV 01 1977  
DUKE POWER COMPANY  
CIVIL/ENV. DIVISION



October 27, 1977

W. A. Haller  
Attn: W. D. Adair

Re: McGuire Nuclear Station  
316(a) Demonstration -  
File Nos: MC-1407.08, F-29, MC-1415.00

Duke has committed to doing a full scale 316(a) demonstration for the McGuire Nuclear Station (see attached memo from W. S. Lee to J. S. Lansche). The 316(a) demonstration will be submitted to NCDNR&CD "no later than the expiration of the permit" which, as it stands now, will be in 1982. While I realize it may seem inordinately early to begin planning for this effort now, I do feel it is prudent to do so since the consequences of our not making a successful demonstration will be significant not only for McGuire but also for any future sites on the lake. In addition, the 316(a) effort should be closely coordinated with any technical specifications or other commitments which have been, or will be, made by Duke.

To insure that we make the best practical effort possible in making this demonstration, I feel it would be appropriate for us to jointly review the current status of all our environmental commitments for McGuire at this time and agree as to the basic biological data components which will be needed in the demonstration. In order to properly plan our strategy for this 316(a) demonstration, I would like to request the following information be assembled for our joint review:

- 1) a listing of sampling locations, sampling programs (frequency of sampling, gear, etc. for each study segment - phytoplankton, fisheries, etc.) done for McGuire in obtaining the construction permit and indicating commitments at that time to AEC/NRC, FPC, EPA and NCDNER (now NCDNR&CD);
- 2) the same for the current operating license stage;
- 3) the same for technical Specifications Monitoring;
- 4) the status of these programs to date.

Based on our joint review of this information we will develop a comprehensive organizational/study plan which will most effectively incorporate existing data as well as data which will be generated during plant operations to insure we will make a successful demonstration. Once we have such a 316(a) demonstration plan in hand, we can place priorities on the complete and up-to-date processing of data collections essential to the demonstration. In terms of organizing and coordinating our work effort you might give some thought to our forming a McGuire 316(a) team who would be charged with putting the document together...like the Gniska, Hogan and McCabe team who worked-up our earlier "predictive" study effort.

While I recognize that compiling the information requested is a formidable task, the ultimate importance of escaping cooling tower benefits at McGuire dictates that we proceed at this time in a well organized and coordinated manner.

October 27, 1977

W. A. Haller

Attn: W. D. Adair

Page 2

Please contact me if you have any questions relative to this request or require any assistance in this effort.

L. C. Dail, Chief Engineer  
Civil-Environmental Division

By: D. W. Anderson  
Ecologist

DWA/cs

Attachment

NO ATTACHMENT REQ'D.

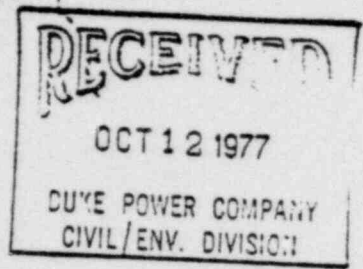
cc: L. C. Dail  
C. A. Dewey  
D. B. Blackmon  
A. Gnlika  
R. F. Edmonds  
E. Hogan  
W. M. McCabe

*McGuire Asks  
make 2 copies for  
Takes*

- 1- RFE
- 1- DWA
- 2- CAD

~~2-6-6~~ #6  
RSC for file.  
2/28 10/14

October 11, 1977



*Clare  
10/14*

John Lansche

Re: McGuire NPDES Permit

Confirming our conversation with regard to your letter of October 7, I realize there are some risks involved with the language of the McGuire permit as agreed to. I do not believe that it is necessary to add the words "if then legally required." It would cause suspicion in the minds of the state agency as to our motivations. Even without those words, if the laws or regulations change between now and permit expiration, we can make an effective argument to that point.

With respect to the other risks that we might not be able to demonstrate certain things, I and many others are convinced that McGuire's use of Lake Norman can be proven to be less harmful to the environment than any alternative way of providing condenser cooling. This is based upon our repeated studies beginning as early as 1958. We are going to want to undertake a full scope 316a type demonstration to not only prove this but also serve as a foundation for considering other sites for large thermal plants on Lake Norman.

When the permit comes out with the language as agreed upon, please take those steps necessary to accept the permit. Many thanks for bringing to my attention those risks that are involved in this step.

*W S Lee*

W S Lee

WSL/s

cc ~~\_\_\_\_\_~~

October 7, 1977

Mr. W. S. Lee

Re: McGuire NPDES Permit

On October 5, 1977, Mr. W. S. Lee met with Mr. Page Benton, DNR, to discuss the problem of the thermal discharge requirements in the proposed permit. At that time, the following language was agreed to:

No later than the expiration of this permit, Permittee will submit the results of a 316(a) demonstration similar to those which Permittee has submitted for its other power plants or a demonstration of best available technology. Such demonstrations will include operational effects of McGuire and of interaction between McGuire and Marshall on water quality, fish, periphyton, plankton, benthos, phytoplankton and zooplankton. In addition, the Permittee will submit to the Department of Natural Resources and Community Development the Annual Operating Reports for the McGuire Nuclear Station when it submits the same to the Nuclear Regulatory Commission.

While this language is a great improvement over that which the State had previously insisted upon, there are still some concerns which you should be aware of:

1. If no regulations are in effect at the time the permit is renewed, the words "demonstration of BAT" infer that Duke will have the Burden of Proof. This is a shift from the usual situation where the State has the burden of proving what is BAT. However the language is interpreted, Duke must still take some affirmative action which may limit our rights by relieving the State from some of its responsibilities.

2. If regulations in effect at the time the permit is renewed approve open-cycle cooling, Duke will still be required to submit a demonstration even though it could not be required to do so otherwise. Duke has, in effect, conceded that it cannot avail itself of the UWAG regulations. In addition, if

Mr. W. S. Lee  
Page Two  
October 7, 1977

Duke should choose to make the BAT demonstration, there is the chance that the State could rule adversely and Duke would be forced to install cooling towers even though the regulations did not require them.

3. If final regulations require closed-cycle cooling, the proposed language is acceptable.

4. The proposed language, by requiring specific action, may preclude Duke from making a 301(c) case [a variance from BAT because of economic factors] [regulations are now being formulated to implement this section]. However, it might be difficult for a utility to prevail on an economic argument.

5. If final regulations require closed-cycle cooling, we could proceed through the following steps to attempt to secure approval for open cycle: case by case determination of BAT, 301(c) case, cooling towers unnecessary because of a 316(a) demonstration. The proposed language, however, may preclude Duke from availing itself of all three mechanisms.


6. The proposed language may preclude Duke from requesting a BAT determination if we fail the 316(a).

In order to protect all of Duke's alternatives, it is suggested that after the word "submit" we add "if then legally required". This then will modify both "316(a)" and "demonstration of BAT" so that they will not be required if UWAG is successful in getting open-cycle cooling approved by the Court. If accomplished, this small change will protect all of Duke's alternatives and legal rights and bases the State's requirements on a legal basis.

If the above change cannot be accomplished for any reason, Duke still has the choice of accepting the five-year permit as is, or, accepting the State's offer of a three-year permit with no thermal limitations. The three-year permit would, of course, expire between the start-up of Units 1 and 2. But, there would be some advantages also. The EPA regulations are expected to be effective by that time and the State and Duke could react accordingly. If open-cycle were approved, there would be no problem; if only closed-cycle were approved, we would have data on one unit to submit a 316(a) demonstration and could predict the results with both units. Also, if we have to litigate the 316(a), we would have more time to install cooling towers before the 1983 statutory deadline than if we had to install them at the expiration of the five-year permit.

Mr. W. S. Lee  
Page Three  
October 7, 1977

We should also keep in mind that Congress is studying the FWPCA and any amendments which are implemented could have effects on future Permits. It is anticipated that the Conference Committee will meet within the next three weeks so that we will know if the 1983 deadline will be extended.

  
John E. Lansche

JEL:ph

DUKE POWER COMPANY

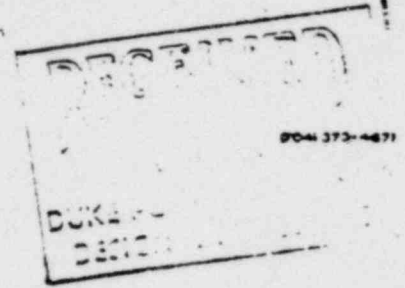
LEGAL DEPARTMENT

P. O. Box 2178

CHARLOTTE, N. C. 28242

JOHN E. LANSCH  
ASSISTANT GENERAL COUNSEL

July 8, 1977



Mr. L. P. Benton, Jr.  
Division of Environmental Management  
Department of Natural and Economic Resources  
P. O. Box 27687  
Raleigh, North Carolina 27611

Re: McGuire NPDES Permit

Dear Mr. Benton:

On June 22, 1977, the Department of Natural and Economic Resources and Duke Power Company met at your office to discuss, among other items, the McGuire NPDES permit.

At that meeting, you suggested that the following language be included in Part A(2) for outfall serial number 001:

Unless a successful 316(a) demonstration is made within 15 calendar months after both units have been commissioned for commercial service, offstream cooling or other operating controls shall be required within 24 calendar months of final determination by the Department of Natural and Economic Resources.

At that time, we expressed our belief that these requirements are not now applicable under existing State and Federal laws and regulations. We were told that a five year permit would, nevertheless, be conditioned upon Duke's acceptance of these conditions or similar conditions.

Mr. L. P. Benton, Jr.  
July 8, 1977  
Page 2

Based upon a review of the proposed permit condition as above written, the Fourth Circuit Court of Appeals' decision and remand in Appalachian Power Co. v. Train, 9 ERC 1033, the Federal Water Pollution Control Act of 1972, and North Carolina law and applicable regulations, Duke cannot accept the proposal.

While we cannot agree to the suggested language, Duke continues to share your concern for the protection of Lake Norman. Since its construction, Lake Norman has been thoroughly studied and monitored; Duke will continue its commitment to protect the environmental integrity of the lake. As a result, Duke proposes that the following be substituted in Part A(2):

The Permittee will submit within 120 days of the effective date of this permit an Operational Biological Monitoring Program which shall define studies on water quality, fish, periphyton, plankton, benthos, phytoplankton and zooplankton. In addition, the Permittee will submit to the Department of Natural and Economic Resources the Annual Operating Reports for the McGuire Nuclear Station when it submits the same to the Nuclear Regulatory Commission.

Duke is agreeing to conduct this type of monitoring and reporting at this time to evaluate the operation of the McGuire Nuclear Station. Additionally, Duke believes that it will have the added advantage of sharing environmental data and analyses with the Department of Natural and Economic Resources so that all parties will be equally informed when the subject permit is to be renewed. We are enclosing a copy of the Semiannual Report for the Oconee Nuclear Station, dated December 31, 1975 for your review. Your attention is directed to Section I which describes the ongoing nonradiological environmental surveillance at Oconee. The Annual Report for McGuire will be quite similar.

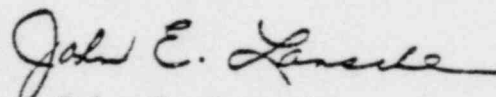


Mr. L. P. Benton, Jr.  
July 8, 1977  
Page 3

Duke is confident that our continuing studies, as previously noted, will demonstrate the compatibility of the McGuire Nuclear Station with Lake Norman. We believe that the State has the ultimate responsibility and authority in Part B.4 of the permit to control and evaluate permitted discharges. This provision assures that any discharge which causes damage to the environment may be modified, suspended or revoked in order to protect the lake.

Duke requests that you review our proposal and the attached document and contact us at your earliest convenience. We are anxious to finalize the McGuire permit as soon as possible.

Very truly yours,

  
John E. Lansche

JEL/fhb  
Attachment

bc: Mr. L. C. Dail  
Mr. C. A. Dewey  
Mr. D. B. Blackmon  
Mr. R. F. Edmonds  
Mr. R. S. Crowell  
Mr. B. E. Davis

June 27, 1977

C/F

CRS  
#8

RECEIVED

WATER CONTROL  
DIVISION

J. E. Lansche

Re: McGuire Nuclear Station  
File No. MC-1444.00

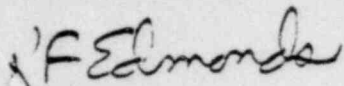
In reply to your June 22, 1977 letter concerning our meeting with NCDNER, C. A. Dewey and I have the following comments.

- 1) The thermal conditions of the Belews Creek permit appear satisfactory. It is our understanding that B. E. Davis and R. S. Crowell are evaluating the monitoring and other aspects of the permit.
- 2) Our understanding of the legal status of the 316(a) is that although this requirement has been rescinded on a federal level (EPA) it still exists in the N.C. Statutes, which embrace EPA's former regulations. If this is true, then N.C. can require 316(a).
- 3) Regardless of our decision on accepting the permit conditions for McGuire it is our understanding that it will be necessary to request the extension of all present discharge permits at McGuire for some period of time.
- ✓ 4) We have serious reservations about committing to a 316(a) demonstration at some future date due to: (a) the potential legal and public hearing entanglements invariably associated with 316 demonstrations, (b) the uncertainty over what a 316(a) demonstration may entail five years from now, or (c) whether the 316(a) option will even exist at that time. In lieu of the "316(a) requirement" we suggest saying "Duke will submit a report based on plant operating, environmental and biological data which will demonstrate the effect of McGuire's heated discharge on the protection and propagation of a balanced, indigenous population of fish, shellfish and wildlife in and on the waters of Lake Norman." Obviously this wording is lifted from the 316(a) demonstration document; however, it does not tie us down to the 316(a) route. We also suggest that we strike the language stating "permittee has requested that a 316(a) demonstration be allowed."
- ✓ 5) We suggest changing the wording of the proposed permit language to read "... offshore cooling, operating controls, or other appropriate action ...." Such wording would allow the possibility of backfitting Marshall with controls or cooling towers in lieu of restrictions on McGuire.
- 7 6) We think that, based on the above concerns, and the possibility of further postponements in McGuire's construction schedule, serious consideration should be given to requesting a construction NPDES permit, superseding present discharge permits, which would be replaced by an operating permit at Duke's request.

J. E. Lansche  
June 27, 1977  
Page Two

- 7) Our definition of daily and monthly CCW discharge temperatures, which were present in the previous draft, were omitted from this draft.

L. C. Dail, Chief Engineer  
Civil-Environmental Division



By: R. F. Edmonds  
Design Engineer

RFE/ds

cc: C. A. Dewey, Jr. ✓

McGUIRE - NPDES  
RE: COOLING TOWERS

Duke's Preferred Compliance Schedule

*Our Preference*

FOR INCLUSION AS PART OF COMMENTS TO NCDNER ON  
DRAFT PERMIT

<u>DATE</u>	<u>EVENT</u>
5-1-78	Unit 1 Start Up
5-1-79	Unit 2 " "
5-1-79	Start 316(a) for 12 months
11-1-80	Submit 316(a) document (18 months) 12 months data + 6 months analyses & preparation of document
11-1-80	Issue C/T Specifications
2-1-81	316(a) Decision - Upon failure to Obtain 316(a):
3-1-81	Award C/T Contract
4/81	7-1-81 Start C/T Construction
5/83	1-1-84 Finish C/T's

*Need one year's data on 2 Units*

*Per conversation with Page Benton July 7, 76 re predictive 316(a) which we don't want to do!*

LCD  
CAD  
6/14/76

*4 yrs ± to build cooling towers*

*316 a 4/1/77 File 316 a  
8-1-77 Det of 316 a  
to 7-1-81 = 4 y*

LCD RFE  
CSG  
CAD with  
Page  
Benton  
7/7/76

*A 316(a) is a 316 a once granted in firm*

June 22, 1977

- Mr. C. A. Dewey
- Mr. B. E. Davis
- Mr. R. F. Edmonds
- Mr. William L. Porter

2

*3 sweet...  
the two...  
referred to as the  
construction...  
for McGuire.*

*Davis  
6/20*

The meeting with DNER was held on June 21, 1977 at 2:00 p.m. in Raleigh and in attendance were Page Benton, Bob Carter, Bill Mills and Bill Puette. The following items were discussed:

(1) Belews Creek - DNER is ready to issue the Belews Creek NPDES permit by June 28, 1977. Attached is a copy of the proposed permit. Buddy Davis and Bob Edmonds should review the same to make sure that all limitations and monitoring requirements are acceptable to us. Please consult with Richard Crowell and Raj Bhatnagar in this regard and let me have your comments by 10:00 a.m., Monday, June 27, 1977. This permit will not again be sent out for public notice because DNER does not consider that any major changes have been implemented.

We discussed the requirement that low volume wastes and material storage runoff be routed to the ash basin by July 1 and further explained to DNER that the pumps which are presently installed can handle a once in 5-year rainfall but not the required once in 10-year rainfall. Benton expressed the idea that DNER will keep "hands off." We requested a consent order, but Puette and Benton decided that it would be better administratively to send us an Enforcement Deferral letter instead of the proposed consent order. Larry Porter and I drafted the proposed letter for Puette's signature and he assured us that the letter would be issued simultaneously with the permit.

(2) McGuire - DNER is ready to issue the McGuire permit for a period of five years if Duke will agree in the permit to conduct a 316(a) demonstration. Benton stated that the

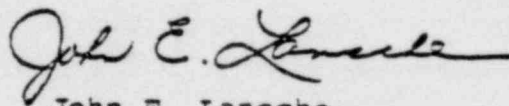
five years was contingent upon our accepting the 316(a) condition and agreeing not to adjudicate the same even though they could not legally impose that condition. The suggested permit language reads as follows:

"Unless a successful 316(a) demonstration is made within 15 calendar months after both units have been commissioned for commercial service, offstream cooling or other operating controls shall be required within 24 calendar months of final determination by DNER."

Charlie Dewey, Bob Edmonds and Buddy Davis should make all necessary inquiries within their respective sections to determine if Duke could comply with these requirements. Larry Porter and I will review the same from a legal standpoint. Please send me by 10:00 a.m., Monday, June 27, your written comments on the same.

Enclosed is a copy of the draft permit for McGuire. Please review the same and let me have your comments.

(3) Ash Basin Equivalency Study - North Carolina has verbally agreed to our Ash Basin Equivalency Study and Page Benton is sending us a letter to that effect. All NPDES permits which have been issued by EPA will remain EPA permits and only EPA can modify the same. Should any EPA permits need to be reissued, then, North Carolina will issue them.



John E. Lansche

JEL/fhb

cc: Mr. Steve C. Griffith, Jr.  
Mr. L. C. Dail  
Mr. R. S. Bhatnagar  
Mr. R. S. Crowell  
Mr. D. W. Anderson

9.

Lake Norman will receive the heated discharge from the McGuire condenser cooling water system. A typical North Piedmont soft-water lake, Lake Norman was impounded by Cowan's Ford Dam in 1963. ~~Before Lake Norman was built, Duke's engineering and environmental studies showed that the reservoir was capable of supporting more than 10-million kilowatts of thermal cooling capacity.~~

Surface waters generally flow in a southwesterly direction into the Catawba River. The Catawba River, a fresh water river, flows south until it reaches a terminus in the Atlantic Ocean. North Carolina has classified this segment of the Catawba as A-11 waters.

*Bill Mc Coke phase unit + E/H -> M-11  
part of all, 1/2, 1/2, 1/2 -*

Before Lake Norman was built, Duke's engineering and environmental studies on similar lake cooling sites (Allen, Riverbend) resulted in the establishment of a "rule of thumb" cooling capacity allowance factor of .7 acres per MWe generated. ~~32,500 Acres~~ Lake Norman could very conservatively support the 17,000 acres estimated for 10,000 MWe Fossil. As for Nuclear, Duke's "rule-of-thumb" assigned 2.5 Acres per MWe. For McGuire, the N C Department of Water & Air Resources assigned a mixing of 3500 acres for nominally 2400 MWe. Based on these prescribed physical limitations, Lake Norman reservoir was concluded to be capable of supporting more than

NORTH CAROLINA  
BOARD OF WATER AND AIR RESOURCES  
RALEIGH  
P E R M I T

For the Discharge of Sewage, Industrial Wastes, or Other Wastes

In accordance with the provisions of Article 21 of Chapter 143, General Statutes of North Carolina as amended, and other applicable Laws, Rules and Regulations,

PERMISSION IS HEREBY GRANTED TO

Duke Power Company  
McGuire Nuclear Station  
Cowans Ford, North Carolina

FOR THE

construction and operation of a 2.84 B.G.D. cooling water system, consisting of three (3) low level water intakes at Cowans Ford Dam with pumps to pipe water to an intermediate level lake intake structure complete with trash racks, pumps, controls, etc., and a warm water discharge through an effluent canal into Lake Norman on the Catawba River,

in accordance with the application dated October 9, 19 71, and in conformity with the plans, specifications and other supporting data, all of which are filed with the Department of Water and Air Resources and are considered a part of this Permit.

This Permit shall be effective from the date of its issuance until December 31, 1980, and shall be subject to the following specified conditions and limitations:

1. This permit shall become void unless the facilities are constructed in accordance with the approved plans and specifications and other supporting data and are completed and placed in operation on or before May 1, 1976, or as this date may be amended.
2. This permit is effective only with respect to the nature and volume of wastes described in the application, and other supporting data.
3. The facilities shall be effectively maintained and operated at all times so as to meet the temperature standards of 5°F increase above natural water temperature and a maximum of 90°F, measured as a daily average one foot below the water surface except within a mixing zone containing an area of not more than 3,500 acres and lying south of a line originating on the west bank at N. C. Coordinates H-1, 416, 900, and H-633, 600 and extending south 70°-00' east intersecting the point of land on the eastern shore, but at no time shall the heated waste discharge increase the temperature of the waters at any point within the Lake in excess of 30°F, as a monthly average.



May 6, 1970

To: W. J. Phifer

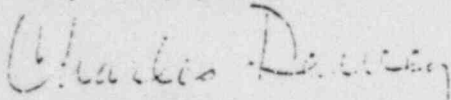
Reference: Plant McGuire Cooling Water  
Study - Lake Norman

Confirming our conversation earlier this week, please consider this letter a request for assistance by the Computer Programming Group in developing a mathematical model of the Lake Norman water resource. This model is to consider Marshall Steam Station, the McGuire Station, future stations at two additional sites plus inflows, outflows and hydroelectric operations. The discharge from the thermal stations is to be treated, where appropriate, in a fashion similar to the studies made on our Belews Creek project. More specifically, the assistance desired is as follows:

1. Since the spring of 1966, considerable data have been taken in the vicinity of Marshall Steam Station on Lake Norman to evaluate the effect of Marshall's operation. Data have been recorded continuously at four stations and weekly synoptic observations have been taken at approximately 20 stations within the lake, exclusive of the meteorological data. These data, along with the meteorological data, have been regularly sent to Johns Hopkins University where they are now on a computer tape. Samples of the form used in submitting data to Johns Hopkins are attached. The observations and data submittal have been the responsibility of R. Fred Gray in the Steam Department. Preliminary to the development of the mathematical model, it is necessary that we have ready access to the extensive data presently available. To accomplish this it would be most helpful if all of our Lake Norman limnological data could be stored on tape so that monthly average water temperature profiles, etc., will be readily available.
2. A preliminary definition of the proposed mathematical model is attached.

I would like to suggest that we discuss this computer task, at your convenience, in order to better define precisely what must be done in order to accomplish our goals.

Very truly yours,



Charles A. Deway, Jr.  
Principal Environmental Engineer

CADjr/lw

Attachments

cc: W. S. Owen

SITE "H" - PLANT "Y"  
COOLING WATER STUDY  
LAKE NORMAN

Any comments or suggestions

1. OBJECT before we proceed - ? (CAJ)  
Based on historical and expected lake temperature profiles,

ignoring economics, compute withdrawal rates and depths to comply with the following limits and assumptions:

- a. Condenser discharge temperatures to not exceed 90°F anytime during year
- b. Station cooling water requirements of 400 cfs (8000 Acre Ft/Day)
- c. Maximum withdrawal of 2000 cfs through existing hypolimnetic intake (Mean elevation 664')
- d. Minimum elevation of lake surface assumed to 745 feet.

3700 cfs @  
Δt = 18°  
5500 cfs @  
Δt = 12°

✓ e. Multi-level epilimnetic intake withdrawal - water at any level is available. *Entire lake channel El. 720±*

f. Condenser discharge minimum temperature of 84°F (1" ABP on turbine - *S* - ts = 79°F + 5° condenser terminal difference 84°F). This constraint will require removal of circulating pumps from service plus flow regulation provision to maintain ABP up to 1.00" Hg during colder months.

Notes to  
want to  
keep  
ABP

The advantage lies in conserving cool water in lake by always assuring that the condenser discharge temperature is well above the natural water equilibrium temperature. This procedure maximizes the benefits of surface cooling as a means of heat rejection compared to the alternative of warming large quantities of water to within several degrees F of equilibrium temperature. This latter, in failing to maximize surface cooling gradually warms large quantities of cool water which will be needed later in the year.

g. A condenser rise of 18°F during summer is preferred; however, a rise as low as 12°F can be considered if advantageous in meeting 90°F maximum. *from W/40*

h. Outflow from Cowans Ford Hydro, as well as inflow from Lookout on a monthly basis, will be considered as layers of water (output and input) at temperatures appropriately identifying each.

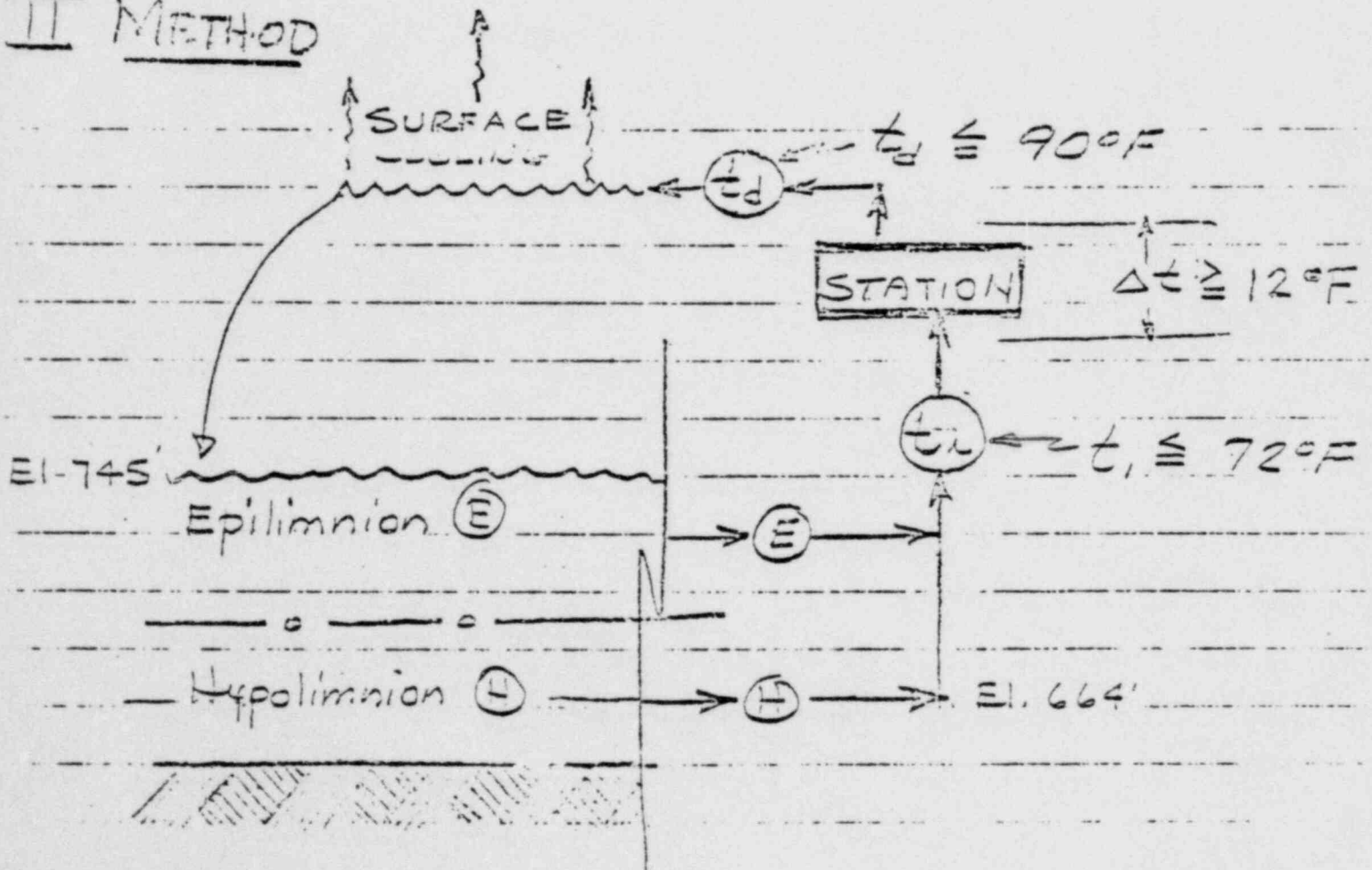
i. Results of these studies will dictate further courses of action.

j. *state expected output from McQuire.*

*Summer C.F. 3/725*

II. METHOD

II METHOD

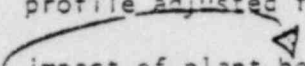


SKETCH ABOVE OUTLINES FLOW CIRCUIT OF COOLING WATER.

A computer program will be written to compute monthly:

- a. Withdrawal quantities identifying these quantities by elevation limits, on brackets, and by mean temperature of water layer.
- b. Condenser inlet and outlet water temperatures (monthly means)
- c. Final mean month lake water temperature profile, i.e. the historical profile adjusted for expected inflow, Cowens Ford expected operation, impact of plant heat rejection and surface cooling effect. Effect of precipitation will not be considered.
- d. Equilibrium temperature for month.

7 Includes Marshall



Input data to computer program is

- a. Lake temperature profile (natural or historical) in a tabular form.
- b. 1. Probable meteorology  
2. Extreme meteorology  
(From Charlotte Essa long range records)
- c. 1. Expected inflow quantities and temperatures on same basis as "a" above  
2. Expected outflow (Cowan's Ford) quantities

Marshall

Operation of Computer Program

- a. Computer will translate temperature profile into volumes of water of finite thicknesses and discrete temperatures - this is defined as an inventory of water resources.
- b. Calculate the probable monthly equilibrium temperature based on meteorology. (This is the temperature around which the major surface heat transfer factors pivot.)
- c. Within the limits, or constraints, for the month being studied the computer will:
  1. Calculate withdrawal quantities resulting from minimum lake involvement commensurate with maximum surface cooling. The

c. 1. (Continued)

goal here is to always place all possible burden of heat rejection on surface cooling mechanisms to conserve lake heat sink potentials for use during summer months. This maximum would be up to limits specified in program - for example:

$t_d = \text{Equil. temp} + 10^\circ$  but not to exceed  $90^\circ\text{F}$  (condenser discharge)

2. Construct a temperature profile reflecting influence of plant, etc. for the month at hand.

For example, in the month of May two profiles will exist:

a. Natural (Historical) ~~to~~ *Incl. Marshall eff. to?*

b. Natural adjusted for impact of station, etc., hereafter called Adjusted Profile.

d. Print out desired results.

e. Proceeding to next consecutive month, two sets of data representing temperature profiles are to be input data. These are:

1. Natural (historical) profile for month under consideration.
2. Adjusted profile for preceding month.

Computer will adjust natural (historical) profile "1" to compensate for operation of plant during preceding month. Profile 1 above will be adjusted by profile 2 above since "1" is evolutionary in development of representative profile for month under consideration.

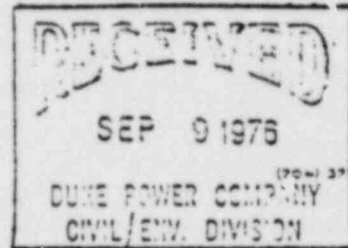
f. Computer input data will be required for each month and computations will proceed until desired period is covered.

If this program proves conservatively the prospects of meeting temperature limits, the program could be transferred to the plant computer. The station computer could then optimize the economics (thermodynamics) of the set limits.

This is a good job for a computer. - says Bill Pfeifer -

~~CONFIDENTIAL~~  
RFE # 14

DUKE POWER COMPANY  
LEGAL DEPARTMENT  
P. O. Box 2178  
CHARLOTTE, N. C. 28242



CHARLES S. CARTER  
ATTORNEY

September 9, 1976

Daniel C. Oakley, Esq.  
Associate Attorney General  
Department of Justice  
P. O. Box 629  
Raleigh, North Carolina 27602

Re: McGuire Nuclear Station Draft NPDES Permit

Dear Dan:

During our meeting concerning the McGuire Nuclear Station draft NPDES permit from the State of North Carolina, you requested that I forward to you a memorandum outlining the position of Duke Power Company on the effect of the UWAG decision (Appalachian Power Company v. Train, Fourth Circuit) on the McGuire permit. Our basic position is that the decision of the Fourth Circuit should control and modify the regulations in 40 CFR Part 423 unless stayed or reversed by the U. S. Supreme Court.

The court specifically set aside and remanded the regulations contained at ~~40 CFR 423.13(1) and (m)~~. Subsection (1) contained the requirement that "there shall be no discharge of heat from the main condensers except . . ." while subsection (m) ~~specified that the limitation of paragraph (1) becomes effective on July 1, 1981.~~ The present McGuire draft permit requires that cooling towers be constructed and in operation by July 1, 1981 based on these two provisions of the regulations. ~~Absent these two provisions,~~ State Permit No. 1977, issued March 4, 1971 by the North Carolina Board of Water and Air Resources, would control and provide the thermal ~~limitations applied to this generating station.~~ That State permit assigned a mixing zone with prescribed boundaries and specified that the discharge should meet the State water quality standards of 90°F and/or 5°F temperature differential at the

Daniel C. Oakley, Esq.  
September 9, 1976  
Page 2

boundary of the mixing zone. Additionally, the permit specified that "at no time shall the heated water discharge increase the temperature of the waters at any point within the lake in excess of 95°F, as a monthly average." Duke Power is satisfied with the thermal limitations specified above and is confident that we can operate the station to conform to those limitations. These limitations are also included in the conditions of the construction permit issued by the U. S. Atomic Energy Commission for McGuire.

During the meeting on the draft permit the point was raised that adoption of the regulations in Part 423 by the Environmental Management Commission may have given those regulations an independent existence and source of authority under State law. Our position would be that G.S. 143-215(c) should control. That section specifies that the Environmental Management Commission "shall be guided by the same considerations and criteria set forth . . . in federal law for the guidance of federal agencies administering the Federal Water Pollution Control Program" in adopting effluent guidelines and standards. Clearly, if the Commission is to be guided by these same principles and the Fourth Circuit has ruled that the Environmental Protection Agency was incorrect in applying those principles in the adoption of Part 423, the Environmental Management Commission and the Division of Environmental Management should be guided by the Fourth Circuit as the controlling authority in applying the provisions of Public Law 92-500 to the steam electric generating point source category.

Further, subsection (c) also states as follows:

"It is the intent of the General Assembly that the effluent standards and limitations adopted hereunder shall be no more restrictive than the most nearly applicable federal effluent standards and limitations."

Clearly, the continued existence of 423.13(1) (m) under State law would violate the intent of the General Assembly expressed above. This result flows from the fact that unless

Daniel C. Oakley, Esq.  
September 9, 1976  
Page 3

the decision of the Fourth Circuit is stayed or reversed by the U. S. Supreme Court, ~~then the federal regulations in Part 423 would contain no restrictions on the discharge of heat from units in the ~~Category 1~~ Subcategory.~~ Therefore, it is our view that as soon as the ~~question~~ of an appeal of the UWAG decision by the Environmental Protection Agency is resolved, if the ~~portion of the decision relating to 40 CFR 423.13(1) and (m) is continued in force,~~ the Environmental Management Commission should modify Part 423, as adopted by the State, by eliminating these two provisions. Thus, our position is that unless the UWAG decision is stayed or reversed, the McGuire permit should be issued with the thermal conditions of State Permit No. 1977 as the only thermal limitations.

If you have any questions or would like to discuss this further, please call me.

Very truly yours,

*Charles S. Carter*

Charles S. Carter

*CB*

CSC/fhb

cc: Mr. William Puette  
Mr. L. Page Benton  
Mr. William L. Porter  
Mr. L. C. Dail  
Mr. C. A. Dewey



#125 C  
#15

September 8, 1976

W. O. Parker

Attn. W. A. Haller

Re: McGuire NPDES

316(a)

File Nos: MC-1444.00, F-29

MC-1415.00

A decision has been made to proceed with development of a predictive 316(a) document for McGuire Nuclear Station. The important chronology is as follows:

- April 1, 1977 - Formally file 316(a) document with the Department of Environmental Management of NCDNER.
- Aug. 1, 1977 - NCDNER grants or denies 316(a).
- May 1, 1978 - Unit No. 1 Startup.
- May 1, 1979 - Unit No. 2 Startup.
- July 1, 1981 - Date upon which both McGuire units must be equipped with cooling towers if on August 1, 1977 NCDNER denies 316(a).

You will note that if cooling towers are required, the above schedule affords essentially four years during which tower specifications can be written, a manufacturer selected, construction completed and towers placed in service.

You are aware of the recent UWAG-4th Circuit Court decision which, among other findings, could exempt McGuire from the cooling tower requirement. Unfortunately, no one can be certain what course EPA will take on these matters. To assume that a 316(a) will not be required is to run a serious risk since NCDNER in the legal "jungle" may decide at some future date that N. C. still embraces EPA's guidelines and they, N. C., require a 316(a) and the July 1, 1981 deadline. Such a late decision could be very costly to Duke Power.

On the other hand, preparing a 316(a) document at this time is no trivial task. We have 316(a) experiences; however, this is to be predictive and being prognostic in nature will likely require more expertise than required at Allen or Marshall.

If EPA and/or NCDNER should advise later on that McGuire is "free" from cooling towers, then our 316(a) effort will certainly not be entirely wasted. As a matter of fact, we should find the 316(a) effort to be of substantial value during the McGuire hearings lead as well as in Technical Specification negotiations.

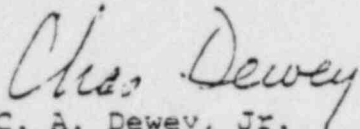
As in other NPDES proceedings, Design Engineering will take the lead in coordination, document publication, etc.; however, obviously, we must depend largely upon certain very knowledgeable

W. O. Parker  
Attn. W. A. Haller  
September 8, 1976  
Page Two

biologists in your group to furnish much of the expertise. Dr. David Anderson, Ext. 4976, has been designated to head the McGuire 316(a) effort in Design. Dave will contact you regarding the individuals in Steam Production you choose to assign to this effort.

If you care to discuss, please do not hesitate to call me.

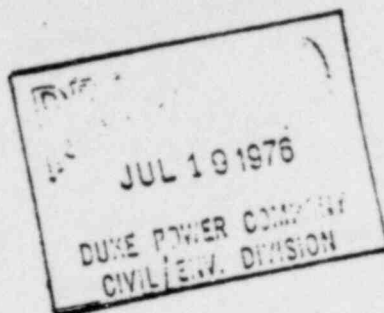
L. C. Dail, Chief Engineer  
Civil-Environmental Division



By: C. A. Dewey, Jr.  
Principal Environmental Engineer

cc: R. S. Bhatnagar  
~~R. S. Crowell~~  
R. F. Edmonds  
D. W. Anderson  
A. Gnilka  
R. F. Gray  
T. W. Yocum  
W. D. Adair  
C. S. Carter  
W. L. Porter  
W. J. McCabe

July 19, 1976



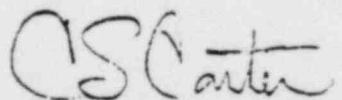
Mr. W. S. Lee  
Mr. L. C. Dail  
Mr. C. A. Dewey  
Dr. W. A. Haller

Re: Thermal Requirements on McGuire Nuclear Station

The question was recently raised concerning the basis for requiring a 316(a) demonstration at McGuire as a condition of the NPDES permit to be issued for this facility. This requirement is based on the authority granted to EPA under the FWPCA Amendments of 1972.

Under the authority of the Act, EPA promulgated on October 8, 1974, effluent guidelines and standards for the steam electric power industry at 40 CFR Part 423. Subpart A, Generating Unit Subcategory, imposes certain requirements on the discharge of effluents from those generating units of greater than 500 megawatt net generating capacity which are placed into service after January 1, 1970. Section 423.13(1) states that "there shall be no discharge of heat from the main condensers" except for six stated exceptions to this no discharge requirement. However, none of the six exceptions is directly applicable to McGuire. The no discharge requirement is required to be implemented by July 1, 1981.

Based on this no discharge requirement, we would be required to provide offstream cooling in the form of cooling towers by the date specified unless we can demonstrate that this requirement is more stringent than necessary to protect the biota under the provisions of Section 316(a). Therefore, unless this regulation is overturned by the Fourth Circuit in the pending UWAC appeal, Duke must make a satisfactory 316(a) demonstration or provide offstream cooling at McGuire.

  
Charles S. Carter

CSC/fhb

cc: Mr. William L. Porter

July 1, 1976

Memo to File

Re: NPDES Permits  
McGuire and Belews Creek  
File No. F-29

On June 29, 1976, C. A. Dewey, Jr., D. W. Anderson, Henry Teeter, and R. F. Edmonds met with Bob Carter, Russell Radford, Bill Mills, Rex Gleason, and Ralph Whitsell of NCDNER to discuss draft NPDES permits for Belews Creek and McGuire. The primary topic of discussion was Duke's letters of June 17 containing comments and proposed changes to the draft permits. In general, the major changes which Duke had requested were in conflict with North Carolina's self-monitoring regulations, and very little headway was made concerning monitoring changes. Specific areas of discussion on the two permits was as follows:

Belews Creek Permit

- 1. Serial 001, Condenser Cooling Water - was accepted as we proposed.
- 2. Serial 002, Low-Volume Wastes - was moved to Part III.
- 3. Serial 003, Metal Cleaning Wastes - They were receptive to our recommendations and were of the opinion that monitoring should be performed at the end of the holdup/settling basin. However, they agreed to include our option of performing an ash basin equivalency demonstration.

Rather than monitoring one time per batch for copper and iron, they will require us to take a composite sample over the period of each cleaning or rinse.

- 4. Serial 004, Ash Pond Discharge Through June 30, 1977 - They were not receptive to our monitoring recommendations. They will consider granting relief from the temperature, dissolved oxygen, and settleable matter if we furnish appropriate data. This may be historical data provided the wastes which will be routed to the ash pond under the permit have been going into the ash pond during the historical period.

The flow requirements in North Carolina's monitoring regulations require continuous sampling for Serial 004. Bob Carter will attempt to remove this requirement after talking to Page Benton; but if he is unsuccessful, we will be required to monitor and submit a request for a waiver.

The 96-hour TLM requirements were dropped from the permit.

- 5. Serial 004, Ash Basin Discharge July 1, 1977 to Expiration - Settleable matter, temperature, and dissolved oxygen monitoring will stay in, including

the limitation of 0.1 ml per l settleable solids. Again, we can request waiver of these limitations at a later date.

It was agreed that CCW intake could be used as the downstream monitoring point for ash basin discharges, and the CCW discharge could serve as upstream monitoring point for certain requirements.

Our recommended paragraph concerning net/gross credit was taken under advisement pending approval by EPA.

6. Serial 005, Sewage Treatment Plant - They could not change these requirements due to N. C. Reg. 2-71. They agreed to review this regulation and possibly give us relief on flow measurement requirements. As a note, ammonium nitrogen is now required on all monitoring in lieu of Kjeldahl.
7. Serial 006, Material Storage Runoff - was moved to Part III.
8. They accepted our recommended schedule of compliance including the revised reporting dates.
9. We will be allowed 45 days to prepare all monitoring reports.
10. Part III, Section H - Our recommendation on reporting of biocides was accepted.
11. Part III, Section I - The paragraph concerning limits of heat discharge from Belews Lake will be changed to reflect the exact wording of our variance for Belews Lake.
12. We were advised by DNER that no comments were received on Belews Creek during the Public Notice period.

#### McGuire Permit

1. We were advised that no comments were received from the public on either the 401 or the 402. The inquiry from N. C. Wildlife was adequately handled in a meeting with Duke Power, and Wildlife subsequently withdrew their comment. In addition, we were advised by Bill Mills that he plans to issue the 402 (NPDES permit) on or about July 15. The 401 is planned for issuance as soon as bookkeeping, including payment to The Charlotte Observer for the advertisement is completed. Bill Mills expects this to be in about ten days. From DNER's comments throughout the meeting, it appears that C. S. Kaplan is still acting as principal advisor on the McGuire permit.
2. Serial 001, CCW Discharge - We are advised that the state could not extend the July 1, 1981 deadline for cooling tower construction if required since

the law provides no relief from this date. However, North Carolina is flexible concerning timing of the 316 demonstration provided reasonable time is allowed for construction of cooling towers prior to July 1, 1981. Mills pointed out that EPA suggests we do a 316a demonstration based on our NRC Environmental Report and then validate this with operational experience. It was not clear whether DNER was in agreement with this, but they said they would not grant a "no strings attached" 316 that is not based on actual operational field data. It appears that any option Duke takes will involve an initial predictive 316 and a validation under operating conditions before we will be in the clear. In any event, due to the projected unit startup schedule, a final determination cannot be made in time to allow reasonable time for cooling tower construction prior to the July 1, 1981 deadline.

DNER plans to define further the daily and monthly average temperatures as used on Serial 001. They will also point out that the Cowans Ford tailrace is not inside the assigned mixing zone. In addition, our recommendations for deleting dissolved oxygen was accepted although settleable matter will have to remain due to N. C. Reg. 2-71. Monitoring for pH will not be required.

3. Serial 002, Conventional Waste Water System, and 003, Waste Water Collection Basin - Will have to be monitored separately rather than combined as we proposed. The rationale for this apparently came from Kaplan since DNER was concerned with dilution of one stream with another.
4. Serial 004, Domestic Waste Water Treatment Plant - Monitoring requirements for flow BOD, TSS and fecal coliform will be required; however, all others will be eliminated since 004 discharges into another water body prior to entering the river.
5. Serial 005, Metal Cleaning Wastes - Our recommendations were accepted with the exception of TSS and Oil and Grease, which they contend their monitoring plan requires.
6. Bill Mills advised us that a permit page concerning construction runoff will be added. He also stated that Kaplan had requested Duke to supply him with any information we have concerning construction runoff measurements.
7. Part III will be revised to add a section concerning PCB's, biocide usage, and deletion of certain monitoring after six months' data is collected.

After discussing the material covered in our meeting with DNER, I called Bill Mills yesterday to request until next Tuesday to give him additional comments

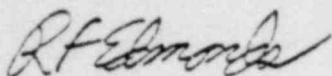
Memo to File F-29

July 1, 1976

Page Four

by phone so that Buddy Davis and Charles Carter will have an opportunity to review these permits. Mills agreed to this request.

L. C. Dail, Chief Engineer  
Civil-Environmental Division



By: R. F. Edmonds  
Asst. Design Engineer

RFE:sd

cc: C. A. Dewey, Jr.  
D. W. Anderson  
R. S. Crowell  
W. A. Haller, Attn: B. E. Davis, R. H. Teeter  
L. C. Dail  
C. S. Carter

McGUIRE - NPDES  
RE: COOLING TOWERS

Duke's Preferred Compliance Schedule

FOR INCLUSION AS PART OF COMMENTS TO NCDNER ON  
DRAFT PERMIT

<u>DATE</u>	<u>EVENT</u>
5-1-78	Unit 1 Start Up
5-1-79	Unit 2 " "
5-1-79	Start 316(a) for 12 months
11-1-80	Submit 316(a) document (18 months) 12 months data + 6 months analyses & preparation of document
11-1-80	Issue C/T Specifications
2-1-81	316(a) Decision - Upon failure to Obtain 316(a):
3-1-81	Award C/T Contract
7-1-81	Start C/T Construction
1-1-84	Finish C/T's *

\* To include 12/81

LCD  
CAD

6/14/76



March 24, 1976

Mr. L. C. Dail  
Mr. C. A. Dewey  
Dr. W. A. Haller  
Mr. W. S. Lee

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MAR 25 1976  
DUKE POWER COMPANY  
CIVIL/ENV. DIVISION

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Re: McGuire Nuclear Station NPDES Permit

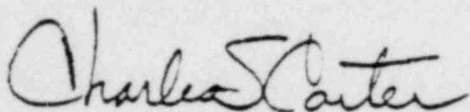
At the Environmental Breakfast on March 22, Charlie Dewey gave a brief report on his conversations with Page Benton of NCDNER during the previous week. With respect to the McGuire permit, Charlie indicated that Page's position was that a 316(a) demonstration will probably be required. His position is based on the regulations governing effluent limitations for steam electric power plants set forth in 40 CFR Part 423. Specifically, Section 423.13(1) specifies that "there shall be no discharge of heat from the main condensers" for units which are placed into operation after January 1, 1974. The regulation does provide for six exceptions to this no discharge rule. Five of those exceptions are not in any way applicable to McGuire. The sixth allows the discharge of heat from a cooling pond or lake which was in service or under construction as of the effective date of the regulation, which was November 7, 1974.

During discussions with Page in December in Raleigh, suggested that this exception should be applicable to McGuire based on the fact that Lake Norman was in use as a cooling lake

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in November, 1974 by Marshall. Apparently, Page did not agree with this formulation. I expect that EPA also would not be amenable to accepting this position, particularly since they stated at the Marshall hearing in July that they do not consider Lake Norman to be a cooling lake within the scope of the definition set forth in the regulations. However, we may want to raise this issue again after we receive a draft permit from the State.

One other point to consider is that our agreement to do a 316(a) may be necessary for Zeller to reject Kaplan's interpretation of Permit No. 1977 issued by the State for McGuire. We should be able to get a better feel for this once we have a draft in hand and can enter into more detailed discussions with the State.



Charles S. Carter  
Legal Department

CSC/fhb

cc: Mr. William L. Porter



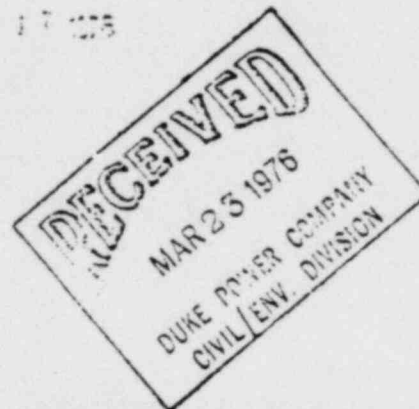
UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

McGuire #20

Docket Nos. 50-369  
and 50-370

FEB 17 1976

Mr. Lewis R. Martin, Director  
Division of Environmental  
Management  
State of North Carolina  
P. O. Box 27687  
Raleigh, North Carolina 27611



Dear Mr. Martin:

On March 4, 1971, the State of North Carolina Department of Water and Air Resources forwarded to Duke Power Company, Permit No. 1977, for the construction and operation of a 2.84 B.G.D. cooling water system for the William B. McGuire Nuclear Station, Units 1 and 2. In Permit No. 1977 the following condition was placed on the McGuire facility:

"The facilities shall be effectively maintained and operated at all times so as to meet the temperature standards of 5°F increase above natural water temperature and a maximum of 90°F, measured as a daily average one foot below the water surface except within a mixing zone containing an area of not more than 3,500 acres and lying south of a line originating on the west bank of N. C. Coordinates E-1, 416, 900 and N-633, 600 and extending south 70° -00' east intersecting the point of land on the eastern shore, but at no time shall the heated waste discharge increase the temperature of the waters at any point within the Lake in excess of 95°F, as a monthly average."

As a comment on our Draft Environmental Statement (DES) related to the operation of William B. McGuire Nuclear Station, Units 1 and 2, the U. S. Environmental Protection Agency (EPA), Region IV, indicated their interpretation of Permit No. 1977 is that "... although the mixing zone allocated in the permit allowed for operation during extreme climatic conditions (which have a very low probability of occurrence), the applicant was limited by the terms of the permit to operation which would assure monthly average discharge temperatures of no greater than 90.0°F during normal climatic conditions. A copy of these comments is enclosed for your information.

The EPA bases their position on the fact the permit states that the permit is granted "in accordance with the application dated October 9, 1970, and in conformity with the plans specifications and supporting data, all of which are filed with the Department of Water and Air Resources and all considered a part of this Permit," and as a part of the supporting data for the permit, an Engineering Report submitted by the applicant, indicating this proposed operating scheme and the thermal discharge temperature and mixing zone requirements. The applicant's scheme provided for maintaining the monthly average discharge temperature no higher than 90.0°F during normal climatic conditions, and under extreme conditions, for maintaining the monthly average discharge temperature no higher than 95.0°F.

In our DES, the NRC staff indicated that the permit limitation is set at 5°F above natural water temperature with a maximum of 90°F, measured as a daily average, and that the permit also established the thermal mixing zone to be a maximum of 3,500 surface acres in which the water temperature at any point shall not be made to exceed 95°F as a result of the heated plant effluent, measured as a monthly average.

In order for the NRC staff to accurately reflect the actual conditions of Permit No. 1977, it is essential that the true limitations, their meaning and intent, be determined.

The Department of Natural and Economic Resources is the agency within the State of North Carolina which is authorized to issue such permits. It is thus logical for the department to be the appropriate body to interpret permit conditions. Accordingly, you are requested to advise us of your interpretation of the permit conditions regarding the above, especially the consideration of normal vs. extreme climatic conditions indicated by the Environmental Protection Agency.

Your response would be appreciated by February 25, 1976 in order that we may include the appropriate limitations in our Final Environmental Statement on the McGuire facility.

If you have any questions on this matter, please contact Mr. Oliver D. T. Lynch, Jr., Environmental Project Manager, by telephone on (301) 443-6990.

Sincerely,



Mr. H. Regan, Jr., Chief  
Environmental Projects Branch 3  
Division of Site Safety and  
Environmental Analysis

Enclosures:  
EPA Comments

cc: (see attached list)

cc: ✓ Mr. William L. Porter  
Duke Power Company  
422 South Church Street  
Charlotte, North Carolina 28242

Mr. Troy B. Conner, Jr.  
Conner, Hadlock & Knotts  
1747 Pennsylvania Ave., N. W.  
Suite 1050  
Washington, D. C. 20036

Jesse L. Riley, President  
The Carolina Environmental Study  
Group  
854 Henley Place  
Charlotte, North Carolina 28207

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of )  
)

DUKE POWER COMPANY )

(Perkins Nuclear Station, )  
Units 1, 2 and 3) )

Docket Nos. STN 50-488  
50-489  
50-490

CERTIFICATE OF SERVICE

I hereby certify that copies of "Applicant's Response and Objections to Intervenor's Request for Production of Documents, Interrogatories, and Request to Admit," dated January 16, 1979 in the captioned matter, have been served upon the following by deposit in the United States mail this 16th day of January, 1979:

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U. S. Nuclear Regulatory  
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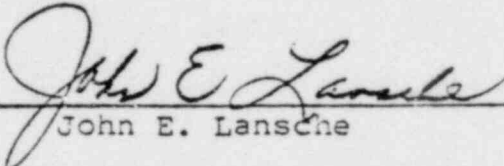
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Mr. Chase R. Stephens  
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\_\_\_\_\_  
John E. Lansche