



Phone/Conference Call Record

Project/Plant: Lee Nuclear Station

Date/time: June 6, 2011

Time: 8:15 PDT

Attendees:

Name	Title	Agency/Organization
Bob Bryce	Hydrology	PNNL
Randall Thompson		SC DHEC

Call title/subject: Minimum Flows at Ninety Nine Islands Dam on the Broad River

Purpose of call: Clarification DHEC position on minimum flows at the dam and how that relates to water withdrawal by the Lee Nuclear Station.

Call notes:

On May 26, 2011 I called Larry Turner (803.898.4005) at DHEC at Sarah Lopas's suggestion to find out DHEC's view of how minimum flows described in the FERC license for Ninety Nine Islands Dam were viewed by the State. Larry said he would look into it and give me a call back. Today (May 27, 2011) Randy Thompson (803 898 4314) called me in response to my call to Larry. Randy said that Duke had told them that operation of the Lee Nuclear Station would not be effected by the minimum flows set in the FERC permit for Ninety Nine Islands Dam - that they would need to get FERC approval for non project use in the project area and they expected to be influenced by the minimum flow of 483 cfs but not the higher flows for the months of December through June.

I mentioned that one of our interests was to understand what the driver was behind setting higher minimum flows for the months of December through June – and if those higher minimums were not met, what the impact would be (biotic, economic, etc). Randy said that he thought protection of biotic species in the river was the driver. He subsequently sent me two letters from state agencies which include the agency concern about the effect of reduced flow below the dam on aquatic species. Those memos are attached and include:

South Carolina Water Resources Commission (SCWRC) 1993. Letter from Steven J. de Kozlowski, SCWRC to Thomas W. Yocum, Duke Power Company, Re: Ninety-Nine Islands Hydroelectric Project Letter dated May 13, 1993.

South Carolina Wildlife & Marine Resources Department (SCWMRD) 1993. Letter from James A. Timmerman, Jr., SCWMRD to G.A. Gallaher, Duke Power Company, Subject: Ninety-Nine Islands Hydroelectric Project FERC Number 2331. Letter dated October 25, 1991.

Mr. Thompson also sent me a copy of the FERC license (issued June 17, 1996) and a copy of a letter in which Duke responds to comments on the FERC license for Ninety Nine Islands Dam and a document called "Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters of the United States, Form L-3 , Federal Energy Regulatory Commission (October 1975)". These items are also attached. The reference for the letter is:

Duke Power Company, 1994. Letter from S.R. Gaffney, Duke Power to Commissioner South Carolina Department of Health and Environmental Control. Re: Applicant's Response to Agencies 10j Comments Gaston Shoals Project No. 2332-003 Ninety-Nine Islands Project No. 2331-002 File Nos: GAH-0404, IS-29, MP-3-A. Letter dated September 26, 1994.

Randy said that the "Terms and Conditions" document described the terms "non project use in a project area" and would give some insight into what that would mean for the Lee project.

I asked Randy if he knew of a contact at FERC that we could talk to about the FERC license for Ninety Nine Islands Dam. He said he did not know who the appropriate person to contact would be.



South Carolina Water Resources Commission

1201 Main Street, Suite 1100 ☐ Columbia, S.C. 29201 ☐ Telephone (803) 737-0800

Alfred H. Vang
Executive Director

May 13, 1993

Mr. Thomas W. Yocum
Generation Services Department
Duke Power Company
P.O. Box 1006
Charlotte, NC 28201-1006

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MAY 17 1993
DIVERS

Re: Ninety-Nine Islands Hydroelectric Project
FERC Project No. 2331

Dear Mr. Yocum:

The Water Resources Commission staff have reviewed the proposed flow monitoring strategy for the above-referenced project and provide the following comments.

Streamflow Gage: The monitoring of streamflow below the project once per day is unacceptable because it would not accurately monitor river conditions and ensure project compliance with minimum flow requirements. Duke proposes to operate this facility as a modified peaking project which would cause downstream flows to fluctuate considerably during each day. The Water Resources Commission disagrees with the proposed modified peaking operation and has recommended that the project operate strictly in a run-of-river mode. Regardless of FERC's final decision regarding project operation, a single measurement of flow each day would not provide sufficient information about flow conditions during the day. We recommend that a continuous monitoring system be installed as suggested by the U.S. Geological Survey which provides real-time flow measurements that are accessible by the Survey's computer network.

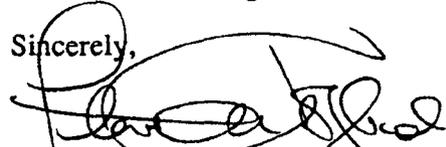
Lake Level Gage: The monitoring of lake levels on a daily basis is also unacceptable. Because the lake is relatively small compared to inflow, considerable fluctuation can be expected during the course of each day. Based on lake volume and inflow data from the State Water Assessment, average inflow is about twice the volume of the lake. Consequently, a continuous monitoring system is needed similar to that suggested by the U.S. Geological Survey. Such a monitoring gage could be part of an automated control system that regulates project operation based on inflow by maintaining a constant lake level. Duke needs to further evaluate the feasibility of a lake level monitoring system as part of an automated control system.

The Water Resources Commission jointly funds numerous gages throughout the state with the U.S. Geological Survey, so is sensitive to the cost of monitoring efforts. However, the use of public resources by both public and private entities obligates the user to accurately monitor impacts of use on the resource. While the cost of monitoring slightly increases the total cost of the project, it also provides valuable information to the operator and can greatly improve project operation. Daily measurements may be less expensive to conduct; however, they do not provide sufficient information to accurately assess impacts of the project on this important public resource.

Mr. Thomas Yocum
May 13, 1993
Page 2

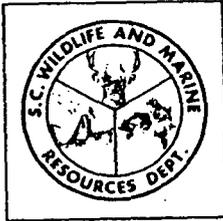
We appreciate the opportunity to comment on the monitoring plan. If you have any questions regarding our comments, please do not hesitate to contact us again.

Sincerely,

A handwritten signature in black ink, appearing to read "Steven J. de Kozlowski". The signature is fluid and cursive, with a large initial "S" and "J".

Steven J. de Kozlowski
Environmental Quality Manager

cc: Gerrit Jobsis, SCWMRD
David Graves, SCDHEC
Steve Gilbert, USFWS



Equal Opportunity Agency

*South Carolina
Wildlife & Marine
Resources Department*

James A. Timmerman, Jr., Ph.D.
Executive Director
W. Brock Conrad, Jr.
Director of
Wildlife and Freshwater Fisheries

October 25, 1991

Mr. G. A. Galleher
Duke Power Company
422 South Church Street
Charlotte, N.C. 28242

Subject: Ninety-Nine Islands Hydroelectric Project
FERC Number 2331

Dear Mr. Galleher:

The South Carolina Wildlife and Marine Resources Department (Department) has reviewed the Ninety-Nine Islands Hydroelectric Project Draft Application for License prepared by Duke Power Company (Duke). Our copy of this document contained Exhibits A, E, F, G and H. The Department has been actively involved in the relicensing process since the 1989 spring. The purpose of this letter is to comment on the above document, recommend actions to be taken prior to submittal of the final license application, and make recommendations for provisions to be included in the new license for this project.

The project, located in Cherokee County, consists of 6 turbine units, and a dam 1567 feet long and 88 feet high which impounds 433 acres of the Broad River. There is no tailrace canal or river reach bypassed by the project. The total flow requirement with all units generating at full capacity is 3992 cfs. Capacity for each unit was not found in the draft application. The average annual flow at the dam is reported to be 2415 cfs.

Exhibit A: Project Description and Operation

In previous correspondence and first stage of consultation meetings, Ninety-Nine Islands operation was defined as run-of-the-river. However, the draft application defined operation as modified-peaking. A modified-peaking operation concerns the Department because it implies periods without continuous instream flow downstream of the project.

In our May 11, 1989 letter, we requested operation data to determine if extended periods without generation (modified peaking) existed during recent years. Duke decided not to supply this information stating the compilation of such a database was excessively burdensome. Instead of focusing on past operation,

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DIVISION OF
WATER QUALITY

Mr. G. A. Galleher
October 25, 1991
Page 2

Duke recommended we work toward operational guidelines agreeable to all parties. In that vein, we strongly recommend operation in a run-of-the-river mode. The Department may recommend site-specific, instream-flow studies downstream of the project if promotion of a modified-peaking operation is continued. We believe such a recommendation would be justified at this point in the licensing process because the mode of operation in the draft application differs from that previously stated during the first stage of consultation.

The Department is concerned that water fluctuations in the reservoir result in poor spawning habitat for resident fish populations. Under normal operation water surface elevations fluctuate from less than one to two feet. We recommend a maximum drawdown of one foot during March, April and May to protect fish spawning habitat. For the remainder of the year we recommend a maximum drawdown of two feet. We encourage including these water elevation rules in the new license.

The draft application proposed a low-flow operating procedure. Hydroelectric units were said to be operable at as low as one-third full capacity; however, the flow required for generation at one-third capacity was not found. Based on the Department's instream-flow policy, generation at one-third capacity may not satisfy the instream-flow needs of fishery resources downstream of the project.

The Department believes that continuous flows are needed downstream of the project during all times to protect downstream fisheries. We propose the following operation rules.

1. Based on the Department's instream flow policy, minimum flows for a Piedmont stream with a mean annual daily average flow (MADF) of 2415 cfs would be:

January-April	996 cfs	(40% MADF)
May, June & December	725 cfs	(30% MADF)
July-November	483 cfs	(20% MADF)

2. At least one unit will be operated to provide the appropriate minimum flow for that period when inflow is equal to or greater than that flow.

3. If inflow is less than that required to provide 40% or 30% MADF, then one or more units would be operated to provide 20% MADF.

4. If inflow is less than 20% MADF, operation will be shut down when the pond elevation has dropped to the appropriate minimum (one foot below full pool during March, April and

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Mr. G. A. Galleher
October 25, 1991
Page 3

May; two feet below full pool for June through February).
On the hour, a unit will be operated at its minimum load for
an adequate time to release the accumulated inflow from the
previous hour.

Item 4 will need to be reworded if the flow required for
generation at one-third capacity is less than 20% MADF.

Exhibit E: Environmental Report

Water quality was generally adequate to support a healthy fish
population. Previous concerns expressed by the Department about
sulfide concentrations have been adequately explained by Duke and
are no longer thought to be deleterious to aquatic resources.
Fish and macroinvertebrate collections did not indicate aquatic
resources were negatively affected by project operation.

Section E.3.1.5 Entrainment Studies

The study as conducted is acceptable to the Department. We agree
that, as stated on page E-19-15, some intrusion probably occurred
and that there is "no consistent, objective method available,
however, to adjust the net catches for intrusion of these
fishes." Hydroacoustic data were statistically correlated to net
catches for paired samples. However, the two methods resulted in
different entrainment totals. The net data was intended to
"calibrate and validate" the hydroacoustic data (see Fish
Entrainment Sampling Program for Four South Carolina Hydros);
however, analysis in the draft application document did not
include this step. Therefore, we recommend calibrating
hydroacoustic data to netting data after adjustment for netting
efficiency. Hydroacoustic entrainment data will be acceptable to
determine entrainment rates after this calibration adjustment has
been made.

Total entrainment was based on generation data for 1990. We
believe total entrainment should be based on generation rates
expected during an average water year. The objective of this
study is to determine average entrainment over a 30-year period,
not that of a single year. Generation for an average year should
be somewhat less than those of 1990 because the 1990 autumn was
unusually wet. We recommend the final license application
provide assessment of total entrainment for an average water year
based on expected monthly generation rates.

Mr. G. A. Galleher
October 25, 1991
Page 4

Total entrainment for 1990 ranged from 205,585 fish for hydroacoustic samples and 238,447 fish for net samples. The Department finds either rate of entrainment to be significant. In our May 11, 1989 letter, we recommended identification of reasonable changes in project design and operation that can be made to prevent the fish entrainment and associated mortality. The draft application did not provide this information. We recommend the final license application contain an evaluation of methods to avoid or minimize fish entrainment, associated mortalities, and their impact on the fish of the Broad River. If, after exploring all possibilities, no reasonable changes can be found to prevent fish entrainment and mortality, then Duke should develop an appropriate mitigation plan for Department approval.

Assessment of immediate and delayed fish mortality associated with entrainment was discussed in detail at our June 28 and 29, 1989 meeting. Duke and the agencies agreed that 100% mortality would be assumed in lieu of conducting mortality assessment studies. This agreement was not mentioned in the draft application and considerable space was used to discount entrainment mortality. If the 100% mortality assumption is no longer acceptable, then we recommend Duke conduct a site-specific entrainment mortality study at this project.

Section E.2.1.8.4.5 Proposed (Recreational) Facilities

Duke proposed to 1) install a concrete boat ramp at the existing ramp downstream of the dam, 2) provide bank angler trails at the Pick Hill Access Area and the left side of the tailrace, 3) maintain existing Pick Hill boat ramp and canoe portage area, and 4) complete improvements within one year of receiving a new license. The Department agrees with this proposal. Additionally, we recommend creation of a handicapped-accessible fishing platform for the tailrace and a suitable parking area.

The final license application should also include plans for Duke to provide routine maintenance of these facilities. We recommend, at a minimum, scheduling the following items in that plan: collection of litter and trash, clearing of brush and undergrowth, and maintenance of signs, handicapped facilities and parking areas.

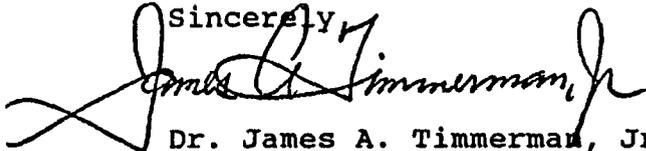
Exhibit H Supporting Information

The Department does not have the technical expertise to evaluate Duke's assessment of costs associated with instream flow regimens. We defer to the FERC for thorough evaluation of the reasonableness of these costs.

Mr. G. A. Galleher
October 25, 1991
Page 5

We believe the first stage of the consultation process for this project has had many positive results. However, there is still ample work left to complete before we are through. The Department looks forward to continued close communication during the duration of this relicensing process.

Sincerely,

A handwritten signature in cursive script, appearing to read "James A. Timmerman, Jr.", written over the word "Sincerely,".

Dr. James A. Timmerman, Jr.
Executive Director

cc: E. Duncan - SCWMRD
G. Jöbsis - SCWMRD
S. de Kozlowski - SCWRC
N. Ferguson - SCDHEC
S. Gilbert - USFWS
L. Cashell - FERC

Duke Power Company
Electric Center
P.O. Box 1906
Charlotte, NC 28201-1906



DUKE POWER

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SEP 29 1994

S. C. Dept. of Health & Environmental
Control - Industrial - Agriculture
Wastewater Division

September 26, 1994

Commissioner
South Carolina Department of Health
and Environmental Control
2600 Bull Street
Columbia, SC 29201

Re: Applicant's Response to Agencies 10j Comments
Gaston Shoals Project No. 2332-003
Ninety-Nine Islands Project No. 2331-002
File Nos: GAH-0404, IS-29, MP-3-A

Dear Sir:

As part of the Federal Energy Regulatory Commission process for relicensing the above projects, the applicant has submitted the attached response to the South Carolina Department of Natural Resources and U.S. Fish and Wildlife Service recommended license provisions made in the agencies' 10j comments.

If you have any questions, please call me at 704/382-5415.

Very truly yours,

A handwritten signature in black ink that reads 'S. R. Gaffney'.

S. R. Gaffney, Engineer
Environmental Division
Electric System Support Department

SRG/sh:srg35

Attachment

cc w/attach: Central Records
cc w/o attach: K. P. Mack

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Duke Power Company) Project Nos. 2331 and 2332
(Ninety-Nine Islands and Gaston Shoals)

DUKE POWER COMPANY'S
REPLY COMMENTS TO AGENCY COMMENT LETTERS
ON THE APPLICATIONS FOR NEW LICENSES FOR THE
NINETY-NINE ISLANDS AND GASTON SHOALS HYDROELECTRIC PROJECTS

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Attorneys for Duke Power Company

DATED: September 16, 1994

TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION.....	2
II. DISCUSSION.....	6
A. The Instream Flows Below The Projects Stipulated In The Settlement Agreement Between Duke And The Agencies Are In The Public Interest.....	6
B. The Requested Instream Flow In The Bypassed Reach At Gaston Shoals Is Unnecessary And Inappropriate And Is Not In The Public Interest.....	8
C. The Agencies' Request That Duke Be Required To Provide Monetary Compensation For Turbine-Induced Fish Mortality Is Neither Authorized By The Federal Power Act Nor Appropriate.....	15
1. The Commission Has No Authority To Assess Damages.....	16
2. Providing Compensation For Turbine-Induced Fish Mortality Is Inappropriate In This Case Where No Fishery "Value" Would Be Lost And Where The Majority Of The Fish Would Not Be Replaced.....	18
3. The Commission Has Never Required Compensation For Fish Entrainment.....	21
D. The Agencies' Request For Continuous Monitoring Devices Is Unreasonable And Unnecessary.....	21
E. The Recreational Amenities Proposed For Both Projects Are In the Public Interest.....	24
F. An Equitable Balancing of Power And Environmental Values At The Projects Requires The Rejection Of The Agencies' Recommendations.....	26
III. CONCLUSION.....	32

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Duke Power Company)	Project Nos. 2332-003 and
)	2331-002 (Gaston Shoals and
)	Ninety-Nine Islands)

**DUKE POWER COMPANY'S REPLY COMMENTS
TO AGENCY COMMENT LETTERS ON THE
APPLICATIONS FOR NEW LICENSES FOR THE GASTON
SHOALS AND NINETY-NINE ISLANDS HYDROELECTRIC PROJECTS**

Duke Power Company ("Duke"), licensee of the Gaston Shoals Hydroelectric Project (FERC No. 2332-003) and the Ninety-Nine Islands Hydroelectric Project (FERC No. 2331-002), hereby submits its reply comments to the agency comment letters filed on Duke's applications for new licenses for the projects.

These reply comments respond to issues raised in the following agency comment letters:

- July 25, 1994, letter from the Department of the Interior ("DOI") providing DOI's comments on the applications for new licenses and submitting fish and wildlife recommendations for the projects pursuant to §10(j) of the Federal Power Act ("FPA"), 16 U.S.C. §803(j).
- July 29, 1994, letter from the South Carolina Department of Natural Resources ("SCDNR") commenting on the applications and submitting §10(j) recommendations.¹

¹ On July 1, 1994, the South Carolina Wildlife and Marine Resources Department ("SCWMRD"), South Carolina Water Resources Commission ("SCWRC"), and two other state agencies merged to form the SCDNR.

(continued...)

I. INTRODUCTION

The Gaston Shoals and Ninety-Nine Islands Projects are both located on the Broad River in Cherokee County, South Carolina. Portions of the Gaston Shoals Project are also located in Cleveland County, North Carolina. The Broad River originates in the central western part of North Carolina and flows generally southeasterly through South Carolina. The Ninety-Nine Islands Project is located approximately 11 miles downstream from Gaston Shoals. Both Projects were originally licensed effective April 1, 1962. Duke also owns and operates several other hydroelectric projects in the Broad River drainage basin upstream of Gaston Shoals.

The Gaston Shoals reservoir has a shoreline length of approximately 10 miles and an estimated surface area of 300 acres. It also has a 1.05-mile-long bypassed reach which receives any spilled water as well as leakage flow.² Construction of the dam and the portion of the powerhouse and intake structure containing units one through five was completed in 1908.³ A sixth unit was installed in 1923. The installed capacity of the four existing units (three through six) is 6,820 KW.

The Ninety-Nine Islands reservoir has a shoreline length of approximately 14 miles with an estimated surface area of 433 acres. There is no bypassed reach. Completed in

¹(...continued)

Trout Unlimited also filed comments dated July 6, 1994. However, its comments are too general to permit Duke to respond in a meaningful fashion, and consequently, are not specifically addressed.

² Leakage flow has been measured to be a minimum of 15-20 cfs.

³ Units 1 and 2 were subsequently removed from service.

1910, the powerhouse lies downstream and adjacent to the intake structure and contains six turbine/generator units with a total installed capacity of 18,000 KW.

Duke has entered into an agreement with the DOI and SCDNR to provide continuous minimum instream flows of 20/30/40% of mean annual daily flow ("MADF") downstream of both projects and to follow certain reservoir drawdown limits. These measures are expected to maintain and protect the fisheries in the reservoirs and below the projects. Duke has also proposed a method for documenting continuous compliance with these flow requirements and drawdown limits in a cost-effective manner. Further, Duke has agreed to provide all of the recreational enhancements proposed by the agencies for both projects. Collectively these flow and other measures will cost Duke a total of \$7,928,000 (present worth revenue required "PWRR" over 40-year period) to implement.

Duke believes that it has made a substantial effort to either satisfy the agencies' requests or propose a reasonable compromise. The commenting agencies, however, are not completely satisfied with the measures offered by Duke. DOI and SCDNR have recommended excessively generous minimum flows for the bypassed reach at Gaston Shoals. These two agencies also want Duke to pay SCDNR monetary compensation for turbine-induced fish mortality and, apparently, for mere fish entrainment. The agencies also request that Duke be required to install expensive gages to continuously monitor reservoir drawdowns and project outflows even though the more cost-effective plan proposed by Duke will provide for conclusive evidence of compliance with all minimum flow and drawdown requirements. As discussed herein, implementation of these additional agency-requested measures will cost Duke and its customers millions of dollars over and above the costs

associated with the measures Duke has already proposed for the projects.

Neither the agencies' §10(j) letters nor the record that has been developed in these proceedings contain any evidence -- let alone the substantial evidence required by §313(b) of the FPA, 16 U.S.C. §8251(b) -- to support the agencies' recommended license conditions. Indeed, review of the record shows that the agencies' recommendations concerning minimum flows in the Gaston Shoals bypassed reach, compensation for fish entrainment and mortality, and other resource matters, in most cases, are based on presumed adverse impacts that have not been demonstrated. Adopting the agencies' recommendations would require the Commission presumptively to favor environmental values over power values. However, as the D.C. Circuit has stated, environmental values do not have preemptive force in the Commission's balancing process. See U.S. Department of the Interior v. FERC, 952 F.2d 538, 545 (D.C. Cir. 1992) ("Ohio River").

The absence of supportive data for the agencies' §10(j) recommendations is clearly insufficient under the FPA. Accordingly, the significant cost associated with the implementation of their recommendations is not justified. As the Commission made clear in promulgating regulations implementing §10(j) of the FPA, §10(j) recommendations are not exempt from §313(b)'s substantial evidence requirement. See, e.g., Order No. 533, III FERC Stats. & Regs. Preambles ¶30,921 (1991), where the Commission, in rejecting the contention that it could not dismiss a §10(j) recommendation because of a lack of substantial evidence in the record to support the recommendation, stated (at p. 30,157):

Contrary to the claims of some commenters, [the Electric Consumers Protection Act did not establish] a presumption of validity for any fish and wildlife recommendation, regardless of its lack of evidentiary support.

Further, the courts have specifically affirmed the Commission on this point. See Ohio River, supra, 952 F.2d at 545 (the substantial evidence requirement of §313(b) of the FPA is not abrogated simply because the Commission decides a §10(j) "environmental" fact instead of a power fact); National Wildlife Federation v. FERC, 912 F.2d 1471, 1481 (D.C. Cir. 1990) (applying substantial evidence test to the Commission's rejection of a §10(j) recommendation). In addition, as the court in Ohio River noted (952 F.2d at 544), §10(j) recommendations are submitted pursuant to the Fish and Wildlife Coordination Act ("FWCA"), and the FWCA specifies that recommendations under the FWCA are to be based on surveys and investigations conducted by the U.S. Fish and Wildlife Service and the state fish and wildlife agencies. For these reasons, the Commission has specified in 18 C.F.R. §4.34(b)(2) that a fish and wildlife agency submitting §10(j) recommendations "must discuss . . . the evidentiary basis for the recommended terms and conditions" (emphasis added). The agencies have the burden of demonstrating that their recommended flows and other measures are necessary, and they have not carried that burden in this case.

As will be discussed herein, the agencies' recommendations are costly, and any potential benefits are greatly outweighed by the cost of implementing them. Also, Duke has already proposed or made changes for Gaston Shoals and Ninety-Nine Islands which reflect many of the agencies' recommendations raised during the consultation process, such as the agreements to provide a 20/30/40% MADF minimum flow below the projects and all recreational enhancements.

Duke has made a proposal for the continued operation of both the Gaston Shoals and Ninety-Nine Islands Projects which it believes is reasonable and strikes an equitable balance

between the power and environmental values as required by §§4(e) and 10(a)(1) of the FPA, 16 U.S.C. §797(e), 803(a)(1). Duke also believes that the Commission will find the agencies' recommendations unsupported and unnecessary once it reviews the agencies' recommendations in light of the substantial evidence test of §313(b) and equitably balances the competing uses of the Gaston Shoals and Ninety-Nine Islands Projects.

II. DISCUSSION

A. The Instream Flows Below The Projects Stipulated In The Settlement Agreement Between Duke And The Agencies Are In The Public Interest.

Duke, SCDNR, and DOI entered into minimum flow agreements dated July 25, 1994, which provide that Duke will release the following continuous minimum flows at the projects:

GASTON SHOALS

868 cfs	January through April
651 cfs	May, June, and December
434 cfs	July through November

NINETY-NINE ISLANDS

966 cfs	January through April
725 cfs	May, June, and December
483 cfs	July through November

The agreements provide for certain deviations from these flows during low-flow periods and emergencies.⁴ The agreements also provide for seasonal maximum reservoir drawdown limits of one and two feet. These flows are expected to maintain and protect the aquatic

⁴ These agreements were filed with the Commission by letter dated August 8, 1994, from the DOI and are attached hereto as Attachment 1.

resources in the reservoir and below the projects. Duke urges the Commission to adopt these flows as part of the licenses for each project.

However, the §10(j) recommendations proposed by DOI and SCDNR contain additional language that is not included in the flow agreements and which is unnecessary for these two projects. DOI and SCDNR have included in their recommended license article regarding flows below the project the following language: "In the event of a major change in project operation (i.e., automated generation v. once-a-day settings), the licensee will reinitiate consultation with the agencies relative to adjustments in continuous minimum flow needs to protect fishery resources below the project."⁵ The agencies' recommendations appear to be based on a misconception as to how these projects are operated. Both the Gaston Shoals and Ninety-Nine Islands Projects are staffed during the day and are not operated in a "once-a-day setting" mode. Therefore, the recommended consultation requirement is unnecessary and should be rejected by the Commission. In any event, if some serious compliance problem were to develop as a result of an operational change, the agencies could petition the Commission pursuant to standard reopener provisions.⁶

⁵ See DOI letter, at pp. 7-8; SCDNR letter, at p. 8.

⁶ Duke also takes issue with SCDNR's inclusion in its recommended license article of language stating that navigation is the basis of the minimum flows. See SCDNR letter, at pp. 7-8. The minimum flow agreements make no mention of navigation. Further, as SCDNR and the Commission are aware, Duke has long contested the SCWRC's authority to establish navigation flows for Commission-licensed hydroelectric projects.

UNITED STATES OF AMERICA 75 FERC ¶61,307
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Elizabeth Anne Moler, Chair;
Vicky A. Bailey, James J. Hoecker,
William L. Massey, and Donald F. Santa, Jr.

Duke Power Company) Project No. 2331-002

ORDER ISSUING NEW LICENSE

(Issued June 17, 1996)

Duke Power Company (Duke) filed an application pursuant to Sections 4(e) and 15 of the Federal Power Act (FPA) 1/ for a new license authorizing the continued operation and maintenance of the 18-megawatt (MW) Ninety-Nine Islands Project No. 2331, located on the Broad River 2/ in Cherokee County, South Carolina. Duke proposes no new capacity and no new construction.

The Commission issued the original license for the Ninety-Nine Islands Project in 1964. 3/ It expired in 1993. An annual license was issued on January 7, 1994, and since then project operations have continued pursuant to annual licenses pending the disposition of Duke's application for a new license. For the reasons discussed below, we will issue a new license to Duke.

I. BACKGROUND

Notice of the application was published. Timely motions to intervene were filed by the U.S. Department of the Interior (Interior), and by the South Carolina Wildlife & Marine Resources Department and the South Carolina Water Resources Commission 4/

1/16 U.S.C. §§ 797 and 807.

2/The Ninety-Nine Islands Project No. 2331 is on a segment of the Broad River which was determined navigable by the Commission. See Duke Power Company, 32 FPC 119, 120 (1964), citing South Carolina Electric & Gas Company, 30 FPC 1346 (1963).

3/32 FPC 119.

4/On July 1, 1994, the South Carolina Wildlife & Marine Resources Department, the South Carolina Water Resources Commission, the South Carolina Land Resources Conservation Commission, and the South Carolina Geodetic and Geological Survey merged to form the South Carolina Department of Natural Resources (South Carolina DNR).

Comments were filed by Trout Unlimited, Interior, and South Carolina DNR.

A Draft Multiple Environmental Assessment (Draft MEA) was issued on April 11, 1995. The Draft MEA addressed the application for new license in this proceeding and applications for new licenses for two other projects on the Broad River, Duke's Gaston Shoals Project No. 2332 and South Carolina Electric and Gas Company's Neal Shoals Project No. 2315.

Comments on the Draft MEA were filed by South Carolina DNR, the South Carolina Department of Health and Environmental Control (South Carolina DHEC), the South Carolina Advisory Council on Historic Preservation, Interior, the U.S. Environmental Protection Agency, the U.S. Department of Agriculture, South Carolina Electric and Gas Company, and Duke. These concerns were considered in preparing the Final MEA, which was issued on January 2, 1996. A Safety and Design Assessment was also prepared and is available in the Commission's public file associated with this project.

All comments received from interested agencies and individuals have been fully considered in determining whether, and under what conditions, to issue this license.

II. PROJECT DESCRIPTION

The existing project consists of an 88-foot high, 1,567-foot long concrete dam; a reservoir with a surface area of 433 acres at a normal water surface elevation of 511 feet mean sea level (msl); a 94-foot high, 197-foot-long concrete intake structure; a riprap covered earthfill diversion dike located upstream of the powerhouse intake structure; a powerhouse containing six turbine-generator units with a total rated capacity of 18 MW, a tailrace channel; and other appurtenant structures.

III. APPLICANT'S PLANS AND CAPABILITIES

In accordance with Sections 10(a)(2)(C) and 15(a) of the FPA, 5/ we have evaluated Duke's record as a licensee with respect to the following: (1) consumption improvement program; (2) compliance history and ability to comply with the requirements imposed in the new license; (3) safe management, operation, and maintenance of the project; (4) ability to provide efficient and reliable electric service; (5) need for power;

4/(...continued)

Survey merged to form the South Carolina Department of Natural Resources (South Carolina DNR).

5/ 16 U.S.C. §§ 803(a)(2)(C) and 808(a).

- (6) transmission services; (7) cost effectiveness of plans; and
(8) actions affecting the public.

1. Consumption Improvement Program

Duke has implemented many customer assistance conservation plans, including programs directed toward: (1) senior citizens; (2) low income groups; (3) customer service activities related to energy management; and (4) demand-side management projects in the residential, commercial, and industrial sectors of their service area. Duke has filed with the Public Service Commission of South Carolina a least cost integrated resources plan which includes conservation measures. From our review of the plan, we believe that Duke is making a good faith effort to conserve electricity and promote energy conservation by its customers.

2. Compliance History and Ability to Comply with the New License

We have reviewed Duke's compliance with the terms and conditions of the existing license. Duke's overall record of making timely filings and of compliance with its license is satisfactory. Therefore, we believe Duke can satisfy the conditions of a new license.

3. Safe Management, Operation, and Maintenance of the Project

Historically, Duke has operated the Ninety-Nine Islands Project in a safe manner. An Emergency Action Plan (EAP) has been prepared and filed with the Commission, and no changes are now proposed that would affect the EAP, which is reviewed and updated annually. The EAP is posted in the control room for the operators' use, should the need arise.

Duke has installed devices to monitor seepage and measure and record any movement in structures. Duke retains an independent consultant to make a complete inspection of the project facilities, including a check on the monitoring devices, every five years, in accordance with Part 12 of the Commission's regulations.

We conclude that the Ninety-Nine Islands Project is safe for continued use and operation.

4. Ability to Provide Efficient and Reliable Electric Service

To evaluate Duke's ability to provide efficient and reliable service, we reviewed (1) Duke's operating plan, (2) its coordination with upstream and downstream projects, and (3) its program to upgrade the operation and maintenance of the project.

Currently, Duke operates the project manually. With a normal reservoir drawdown of about two feet, the plant is operated during the peak load period using inflow and the available storage.

Because the project has little storage capability, Duke does not need to coordinate its operation with any upstream or downstream water resource projects.

The project's operation and maintenance record discloses that, in recent years, Duke has made numerous repairs and some replacements (two new turbines and runners) to keep its equipment in good condition.

We conclude that Duke is operating the Ninety-Nine Islands Project in an efficient and reliable manner.

5. Need for Power

To assess the need for power we looked at Duke's system together with a review of the Southeastern Electric Reliability Council's (Southeastern Council) operating region in which the project is located.

In looking at Duke's system, we considered Duke's short- and long-term need for the power, and the cost of alternative power if Duke doesn't receive a new license for the project.

Duke uses the entire project output to serve local loads. The project helps lower system deficits and reduce cost to ratepayers. Duke's total system requirement is about 75,904 Gigawatthours (GWh). Duke projects an average summer peak growth of 2.1 percent over the forecast period. Its strategy for meeting present and future power needs is composed of three components: (1) supply-side resources (existing and new power plants), (2) demand-side resources (conservation measures), and (3) purchased power resources (purchase of power from alternative sources).

To help meet its projected need, Duke has recently completed and put on line a 16-unit combustion turbine facility with a total generating capacity of 1,184 MW.

The power from the project will also be useful in meeting part of the need for power projected by the Southeastern Council. In their April 1994 Report, the Southeastern Council projects a 2.3 percent summer peak demand growth rate and shows capacity additions that begin in 1993 and continue throughout the forecast period.

We conclude that Duke has a need for power in both the short and long term, and that the Ninety-Nine Islands Project helps to

meet part of this need. The power from the project would be useful in meeting part of the need for power projected by both Duke and the Southeastern Council. The project displaces some fossil-fueled electric power generation, and thereby conserves nonrenewable fossil fuels and reduces the emission of noxious byproducts caused by the combustion of fossil fuels.

6. Transmission Service

Duke proposes no new power development at the project but desires the continued use of the project's energy on Duke's system. The electrical system is designed to function so that no significant operational or circuit loading impacts will occur when the project is out-of-service. The project's principal advantage to Duke is its proximity to the load it serves. It minimizes electrical losses and improves area system efficiency. We conclude that the existing transmission system is sufficient and no changes are necessary.

7. Cost Effectiveness of Plans

Duke does not propose any additional capacity or project modifications other than environmental enhancements. We conclude that the project, as presently constructed and as Duke proposes to operate it in conjunction with minimum flow releases, fully develops and uses the economical hydropower potential of the site.

8. Actions Affecting the Public

Construction of additional recreation facilities by clearing or widening paths to improve access to bank fishing areas, and providing a boat ramp and a barrier-free fishing platform at the existing canoe portage put-in area, will increase recreation opportunities and therefore benefit the public.

IV. WATER QUALITY CERTIFICATION

Under Section 401(a)(1) of the Clean Water Act, 33 U.S.C. § 1341(a)(1), the Commission may not issue a license for a hydroelectric project unless the state certifying agency has either issued a water quality certification for the project or has waived certification by failing to act on a request for certification within a reasonable period of time, not to exceed one year. 6/

6/ Section 401(a)(1) requires an applicant for a federal license or permit to conduct any activity which may result in any discharge into navigable waters to obtain from the state in which the discharge originates certification that
(continued...)

The South Carolina DHEC timely issued its water quality certification for the Gaston Shoals Project on February 25, 1992. The certification contains conditions requiring: (1) protection of water quality through compliance with local and state sediment control/stormwater ordinances; (2) development of a spill prevention plan; (3) notice to South Carolina DHEC and downstream industrial water supply users of use of herbicides or impoundment of water in the reservoir for more than 24 hours; and (4) notice to the South Carolina DHEC of project fish kills and licensee methods to prevent fish kills. 7/ These conditions are within the scope of Section 401 of the CWA and will be included in the license.

V. FISH PASSAGE

Section 18 of the FPA 8/ states that the Commission shall require construction, maintenance, and operation by a licensee of such fishways as may be prescribed by the Secretary of Commerce or of the Interior. Interior has not, to date, submitted fishway prescriptions to the Commission for this project, but requests that Duke be required to provide fishways at the Ninety-Nine Islands Project when prescribed by the Secretary of the Interior under Section 18 of the FPA. We recognize that future fish passage needs and management objectives may not be ascertainable before a license is issued. Therefore, Article 405 of the new license reserves the Commission's authority to require fishways that the Secretary of the Interior may prescribe in the future.

VI. RECOMMENDATIONS OF FEDERAL AND STATE FISH AND WILDLIFE AGENCIES

Section 10(j)(1) of the FPA 9/ requires the Commission, when issuing a license, to include license conditions, based on recommendations of federal and state fish and wildlife agencies

6/ (...continued)

any such discharge will comply with applicable water quality standards.

7/ In its certification, the state also noted that it was reserving the right to add conditions later. However, this amounts to a "reopener" provision, which would give the state unilateral authority to alter its certification, inconsistent with Section 401. Therefore, this condition will not become part of the license. See Tunbridge Mill Corporation, 68 FERC ¶ 61,078 at p. 61,389 (1994), reh'g denied, 75 FERC ¶ 61,175 (1996).

8/ 16 U.S.C. § 811.

9/ 16 U.S.C. § 803(j)(1).

submitted pursuant to the Fish and Wildlife Coordination Act, to "adequately and equitably protect, mitigate damages to, and enhance, fish and wildlife (including related spawning grounds and habitat)" affected by the project.

If the Commission believes that any such recommendation may be inconsistent with the purposes and requirements of Part I of the FPA or other applicable law, Section 10(j)(2) requires the Commission and the agencies to attempt to resolve any such inconsistency, giving due weight to the recommendations, expertise, and statutory responsibilities of such agencies. If the Commission then does not adopt a recommendation, it must explain how the recommendation is inconsistent with applicable law and how the conditions selected by the Commission adequately and equitably protect, mitigate damages to, and enhance fish and wildlife.

The license contains conditions consistent with Interior's and South Carolina DNR's recommendations that Duke: (1) limit reservoir drawdowns to one foot below full pool during March, April, and May, and to two feet below full pool from June through February of each year (Article 401); (2) provide a minimum flow below the project of 966 cfs (January through April), 725 cfs (May, June, and December), and 483 cfs (July through November) with certain exceptions (Article 402); 10/ and (3) develop and implement a plan to continuously monitor minimum streamflow releases and reservoir levels (Article 403). 11/

Interior and the South Carolina DNR also recommended development of a plan for compensatory mitigation for unavoidable fish entrainment mortality caused by the project and a schedule for implementing the plan. They recommended that the plan include, but not be limited to:

10/ During December through June when inflow is less than the above minimum flows, the project will release a minimum flow of 483 cfs. When inflow is less than 483 cfs during any period, the project will be allowed to store and release the inflow on an hourly basis provided there is no violation of the reservoir fluctuation limitations.

11/ South Carolina also made a number of recommendations for recreational facilities (a barrier-free fishing platform, a parking area, a concrete boat ramp, bank angler trails, and a schedule for maintenance of the recreational facilities) at the project which are outside the scope of Section 10(j). We have examined these recommendations pursuant to Section 10(a) and conclude that such facilities are warranted. See discussion in Final MEA, Section VII.B. The recommendations are included in Article 409 of the license.

(1) developing, in coordination with Interior and South Carolina DNR, resource enhancement plans and implementation schedules to mitigate for turbine-induced impacts on fish at the project; and

(2) setting aside annual compensation to finance these measures, based on entrainment and mortality estimates developed in accordance with the licensee's response to Item 5(c) of an Additional Information Request issued May 28, 1992. 12/

Although the development of a resource enhancement plan to mitigate for turbine-induced impacts would be within the purview of Section 10(j), the set-aside of money for the development of a resource enhancement plan is not a recommendation pursuant to Section 10(j), since it is not a specific measure to protect or enhance fish and wildlife. We have, however, considered this latter recommendation pursuant to our authority under Section 10(a)(1) of the FPA and, for the reasons discussed below, have adopted it.

While prevention or reduction of adverse impacts is the preferred alternative, where, as in this instance, the project's unmitigable adverse impacts to fishery resources do not warrant denying the license and direct mitigation measures such as fish screens would entail costs both prohibitive and significantly disproportionate to the replacement cost of the lost fish, it is appropriate to consider the use of compensatory mitigation and the licensee's funding thereof. 13/

In the case of the Ninety-Nine Islands Project, studies conducted by Duke indicated that maximum entrainment at the project is 134,335 fish per year. Duke has estimated that it would cost \$20 million to install fish screens to prevent entrainment at the project, and that the replacement value of fish lost annually at the project from entrainment would be about \$57,000, of which staff believes 66 percent represents replacement value for nongame fish. 14/ License Article 404 therefore requires that Duke provide for compensatory mitigation consistent with the recommendations of Interior and South Carolina DNR. Furthermore, if in the future the project is found to have unanticipated impacts on the fishery resources that

12/ The licensee's response to Item 5(c) developed replacement values which were calculated based on the American Fisheries Society's A Handbook of Monetary Values of Fishes and Fish Kill Counting Guidelines (1992).

13/ See Ohio Power Company, 71 FERC ¶ 61,092 (1995).

14/ See Section V.C.1. of the Final MEA.

require examination, Article 404 reserves the Commission's authority to reopen the license to determine if additional mitigation measures are warranted, after notice and opportunity for comment. 15/

VII. COMPREHENSIVE PLANS

Section 10(a)(2)(A) of the FPA, 16 U.S.C. 803(a)(2)(A), requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving waterways affected by the project. Under Section 10(a)(2)(A), federal and state agencies filed 15 comprehensive plans that address various resources in South Carolina. Of these, the Commission staff identified five plans relevant to the Ninety-Nine Islands Project. 16/ No inconsistencies were found.

VIII. COMPREHENSIVE DEVELOPMENT

Sections 4(e) and 10(a)(1) of the FPA, §§ 16 U.S.C. 797(e) and 803(a)(1), require the Commission, in acting on applications for license, to give equal consideration to the power development purposes and to the purposes of energy conservation, the protection, mitigation of damage to, and enhancement of fish and wildlife, the protection of recreational opportunities, and the preservation of other aspects of environmental quality. Any license issued shall be such as in the Commission's judgment will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. The decision to license this project, and the terms and conditions included herein, reflect such consideration.

The Draft MEA analyzed the effects associated with the issuance of a new license for the Ninety-Nine Islands Project, and the Final MEA recommends a variety of measures to protect and

15/ See City of New Martinsville, West Virginia, 73 FERC ¶ 61,041 (1995).

16/ (1) Fisheries USA: the recreational fisheries policy of the U.S. Fish and Wildlife Service, undated, Fish and Wildlife Service, Washington, D.C.; (2) Water Classifications and Standards, and Classified Waters, 1985, South Carolina Department of Health and Environmental Control, Columbia, South Carolina; (3) South Carolina's Comprehensive Outdoor Recreation Plan, 1985, South Carolina Department of Parks, Recreation, and Tourism, Columbia, South Carolina; (4) South Carolina Rivers Assessment, 1988, South Carolina Water Resources Commission, Columbia, South Carolina; and (5) North American Waterfowl Management Plan, 1986, Canadian Wildlife Service.

enhance the environmental resources which, as discussed above, we adopt. We conclude that issuance of a new license for the Ninety-Nine Islands Project will not constitute a major federal action significantly affecting the quality of the human environment.

In determining whether a proposed project will be best adapted to a comprehensive plan for developing a waterway for beneficial public purposes, pursuant to Section 10(a)(1) of the FPA, the Commission considers a number of public interest factors, including the economic benefits of project power.

Under the Commission's new approach to evaluating the economics of hydropower projects, as articulated in Mead Corporation, Publishing Paper Division, 17/ the Commission employs an analysis that uses current costs to compare the costs of the project and likely alternative power with no forecasts concerning potential future inflation, escalation, or deflation beyond the license issuance date. The basic purpose of the Commission's economic analysis is to provide a general estimate of the potential power benefits and the costs of a project, and reasonable alternatives to project power. The estimate helps to support an informed decision concerning what is in the public interest with respect to a proposed license.

In addition, certain economic factors related to project decommissioning impinge on the decision to issue a new license that are not present in the licensing of new projects. If an existing project is not issued a new license, or if the licensee declines to accept the new license, the project probably will have to be retired in one form or another. This could range from simply removing the generator at the project to major environmental restoration varying from minor measures to dam removal.

Based on current economic conditions, without future escalation or inflation, the Ninety-Nine Islands Project, if licensed as Duke proposes, would provide a firm capacity of 9,550 kW and produce an average of about 65.7 GWh of energy, at an annual cost of about \$1.743 million (26.5 mills/kWh) or about \$482,000 (about 7.4 mills/kWh) less than the current cost of an equivalent amount of capacity and energy using alternative power sources. If licensed in accordance with our additional enhancement measures, the annual cost of the project would be about \$1.755 million (26.7 mills/kWh), or about \$467,000 (about 7.2 mills/kWh) less than the current cost of alternative power sources.

17/ 72 FERC ¶ 61,027 (1995).

Based on our review of the agency and public comments filed on this project, our review of staff's evaluation of the environmental and economic effects of the proposed project and its alternatives, and our analysis pursuant to Sections 4(e) and 10(a)(1), we find that the Ninety-Nine Islands Project, with our mitigative and enhancement measures, will be best adapted to the comprehensive development of the Broad River for beneficial public uses.

IX. LICENSE TERM

Section 15(e) of the FPA 18/ specifies that any license issued shall be for a term that the Commission determines to be in the public interest, but not less than 30 years nor more than 50 years from the date on which the license is issued. Commission policy establishes 30-year terms for projects with little or no redevelopment, new construction, new capacity, or environmental mitigative or enhancement measures; 40-year terms for projects with a moderate amount of proposed redevelopment, new construction, new capacity or mitigative and enhancement measures; and 50-year terms for projects with proposed extensive redevelopment, new construction, new capacity, or mitigative and enhancement measures. Accordingly, because this new license authorizes moderate mitigative and enhancement measures, 19/ we are providing a license term of 40 years for the Ninety-Nine Islands Project.

X. SUMMARY

Background information, analysis of impacts, support for related license articles, and the basis for a finding of no significant impact on the environment, are contained in the MEA.

The design of this project is consistent with the engineering standards governing dam safety. The project will be safe if operated and maintained in accordance with the requirements of this license. Analysis of related issues is provided in the Safety and Design Assessment.

18/ 16 U.S.C. § 808(e).

19/ The license contains articles prescribing mitigation and enhancement measures by limiting reservoir drawdowns (Article 401), maintaining seasonal minimum flows (Article 402), funding mitigation for turbine-induced impacts on fish (Article 404), reserving authority to the Commission to require fishways (Article 405), the implementation of plans for sediment release (Article 406), , wildlife protection (Articles 407 and 408), recreation enhancement (Article 409), and cultural resources management (Articles 410 and 411).

The Commission orders:

(A) This license is issued to Duke Power Company (licensee), for a period of 40 years, effective the first day of the month in which this order is issued, to operate and maintain the Ninety-Nine Islands Project. This license is subject to the terms and conditions of the Federal Power Act (FPA), which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

(1) All lands, to the extent of the licensee's interests in those lands, enclosed by the project boundary shown by Exhibit G:

<u>Exhibit G</u>	<u>FERC No. 2331-</u>	<u>Showing</u>
1	103	Project Boundary Map

(2) Project works consisting of: (1) a concrete dam that is about 88 feet high (maximum) and 1,567 feet long; (2) a concrete intake structure that is about 94 feet high (maximum) and 197 feet long; (3) a reservoir with a surface area of 433 acres at a normal water surface elevation of 511 feet msl; (4) a riprap covered earthfill diversion dike located upstream of the powerhouse intake structure; (5) a powerhouse containing six turbine-generator units with a total rated capacity of 18 MW; (6) a tailrace channel; and (7) other appurtenant structures

The project works generally described above are more specifically shown and described by the following exhibits that also form a part of the application for license and that are designed and described as:

The following parts of Exhibit A and the Exhibit F drawings conform to the Commission's rules and regulations, and are approved and made a part of the license:

Exhibit A: Project Description

<u>Section</u>	<u>Title</u>
A.3	Equipment Description, page A-7
A.5	Additional Equipment, page A-9

<u>Exhibit F:</u>	<u>FERC No. 2331-</u>	<u>Showing</u>
F-1	101	Plan and Profile
F-2	102	Sections and Details

(3) All of the structures, fixtures, equipment or facilities used to operate or maintain the project and located within the project boundary, all portable property that may be employed in connection with the project, and all riparian or other rights that are necessary or appropriate in the operation or maintenance of the project.

(C) Exhibits A, F, and G as designated in ordering paragraph (B) above are approved and made part of the license.

(D) This license is subject to the articles set forth in Form L-3 (October 1975), entitled "Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters of the U.S.," and the following additional articles:

Article 201. The licensee shall pay the United States an annual charge, effective as of the first day of the month in which this license is issued, for the purpose of reimbursing the United States for the costs of administering Part I of the Federal Power Act, a reasonable amount as determined in accordance with the provisions of the Commission's regulations in effect from time to time. The authorized installed capacity for that purpose is 18,000 kilowatts.

Article 202. Within six months from the date of issuance of this order, the licensee shall file for Commission approval a revised Exhibit G to include within the project boundary the lands needed permanently for construction, use, and maintenance of the recreational facilities described in Article 409.

Article 203. If the licensee's project was directly benefitted by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement during the term of the original license (including extensions of that term by annual licenses), and if those headwater benefits were not previously assessed and reimbursed to the owner of the headwater improvement, the licensee shall reimburse the owner of the headwater improvement for those benefits, at such time as they are assessed, in the same manner as for benefits received during the term of this new license.

Article 204. Pursuant to Section 10(d) of the Federal Power Act, a specified reasonable rate of return upon the net investment in the project shall be used for determining surplus earnings of the project for the establishment and maintenance of amortization reserves. The licensee shall set aside in a project amortization reserve account at the end of each fiscal year one half of the project surplus earnings, if any, in excess of the specified rate of return per annum on the net investment. To the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year, the

amortization reserves. The licensee shall set aside in a project amortization reserve account at the end of each fiscal year one half of the project surplus earnings, if any, in excess of the specified rate of return per annum on the net investment. To the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year, the licensee shall deduct the amount of that deficiency from the amount of any surplus earnings subsequently accumulated, until absorbed. The licensee shall set aside one-half of the remaining surplus earnings, if any, cumulatively computed, in the project amortization reserve account. The licensee shall maintain the amounts established in the project amortization reserved account until further order of the Commission.

The specified reasonable rate of return used in computing amortization reserves shall be calculated annually based on current capital ratios developed from an average of 13 monthly balances of amounts properly includible in the licensee's long-term debt and proprietary capital accounts as listed in the Commission's Uniform System of Accounts. The cost rate for such ratios shall be the weighted average cost of long-term debt and preferred stock for the year, and the cost of common equity shall be the interest rate on ten-year government bonds (reported as the Treasury Department's ten-year constant maturity series) computed on the monthly average for the year in question plus four percentage points (400 basis points).

Article 401. Within 60 days from the date the Commission approves the gaging plan required in Article 403, the licensee shall limit the maximum reservoir drawdown to one foot below full pool during March, April, and May, and two feet below full pool June through February. These drawdowns may be temporarily modified if required by operating emergencies beyond the control of the licensee, and for short periods upon agreement between the licensee, the South Carolina Department of Natural Resources, and the U.S. Fish and Wildlife Service. If the drawdowns are so modified, the licensee shall notify the Commission as soon as possible, but no later than ten days after each such incident.

Article 402. Within 60 days from the date the Commission approves the gaging plan required in Article 403, the licensee shall release from the Ninety-Nine Islands Project into the Broad River a minimum flow of 966 cubic feet per second (cfs) (January through April), 725 cfs (May, June, and December), and 483 cfs (July through November) as measured below the project, or inflow, whichever is less, for the protection of fish resources below the project in the Broad River. During the December through June period, when inflow is less than the above required minimum flows, a continuous flow of 483 cfs shall be released as a drought contingency flow. If inflow is less than 483 cfs during any period, the licensee shall shut down all units when the pond elevation drops to the seasonal maximum drawdown limit required

by Article 401 and shall operate one unit at its minimum hydraulic output for that portion of every hour which is necessary to discharge the approximate accumulated inflow. Alternatively, during low flow periods, the licensee may elect to open the trash gate or, otherwise spill water to release inflow.

These minimum flow requirements may be temporarily modified if required by operation emergencies beyond the control of the licensee, and for short periods upon agreement between the licensee, the South Carolina Department of Natural Resources, and the U.S. Fish and Wildlife Service. If the flow is so modified, the licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident.

Article 403. Within six months from the date of issuance of this license, the licensee shall file for Commission approval a plan to install, operate, and maintain continuously recording streamflow gages necessary to monitor the minimum flow releases required in Article 402, and a gage to monitor the maximum reservoir drawdown required in Article 401.

The plan shall include but not be limited to:

- (1) the method of collecting and recording the flow and maximum drawdown data;
- (2) a schedule for installing the required equipment;
- (3) the proposed location, design, and calibration of the monitoring equipment; and
- (4) a provision for providing recorded data to the consulted agencies within 30 days from the date of an agency's request for the data.

The licensee shall prepare the plan after consultation with the U.S. Geological Survey, U.S. Fish and Wildlife Service, and the South Carolina Department of Natural Resources. The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 404. The licensee, after consulting with the South

the licensee shall file a fisheries resource plan and implementation schedule for Commission approval. The plan shall describe specific activities to be undertaken and contain provisions to monitor the success of these measures. The plan shall include any comments received from the consulted agencies on the proposed plan, and a description of how the agency comments are accommodated by the developed plan. The Commission reserves the right to modify the proposed plan and schedule. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

By January 1 of each year following the issuance of this license, the licensee shall provide up to \$57,000 in 1991 dollars, adjusted annually by the previous year's consumer price index (CPI), to finance fisheries resource plans.

The Commission reserves the right to: (1) require the licensee to assess the applicability of new technology regarding cost-effective measures for reducing turbine-induced mortality or injury at the Ninety-Nine Islands Project; (2) require installation of fish protection at the Ninety-Nine Islands Project in lieu of other proposed measures, should fish protection be feasible; and (3) after notice and opportunity for comment, modify or eliminate the compensatory measures and their funding, should it be necessary or appropriate.

Article 405. Authority is reserved to the Commission to require the licensee to construct, operate, and maintain, or provide for the construction, operation, and maintenance of, such fishways as may be prescribed by the Secretary of Interior.

Article 406. Within six months from the date of issuance of this license, the licensee shall file for Commission approval a sediment release plan to protect aquatic resources downstream of the project. The plan shall include a provision requiring the licensee to consult with the South Carolina Department of Health and Environmental Control before releasing sediments.

The licensee shall prepare the plan after consultation with the South Carolina Department of Natural Resources, the South Carolina Department of Health and Environmental Control, and the U.S. Fish and Wildlife Service.

The licensee shall include with the plan, documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall

include the licensee's reasons, based on project specific information.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 407. The licensee shall implement its Wildlife Resources Plan, filed on April 30, 1994, for lands within the project boundary, that would: (1) avoid all land development and disturbance, except activities essential to operate and maintain the project; (2) restrict all timber harvesting on project lands and allow for the timber resources to attain mature and old growth characteristics, thereby creating valuable late successional habitats and species; (3) retain natural tree snags and dens that provide wildlife habitat; (4) conserve all mature trees for potential bald eagles; and (5) avoid removal of mast-producing hardwoods for wildlife.

Article 408. Within six months of the date of this license, the licensee shall file a plan to construct, maintain, and monitor 20 wood duck and 20 eastern bluebird nest boxes. This plan shall include: (1) bird box design specifications; (2) assurance of predatory guards on each box; (3) map(s) showing location, placement, and positioning of the boxes to optimize their use by the respective bird species; (4) an implementation schedule; (5) procedures for annual monitoring and reporting; and (6) provisions for modifying the numbers and locations of the boxes if nesting is unsuccessful.

The licensee shall prepare the plan after consultation with the U.S. Fish and Wildlife Service and SCDNR. The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the nest box plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 409. Within six months from the date of issuance of this license, the licensee shall file with the Commission, for approval, a recreation enhancement plan for providing canoeing and fishing access at the Ninety-Nine Islands Project.

The plan shall include, at a minimum, a description and a map or drawing of the following facilities:

- (1) a canoe portage facility around the project dam;
- (2) Pick Hill access area, including enhanced bank fishing opportunities by clearing a wider path along the existing angler trail adjacent to the river;
- (3) a concrete boat ramp, a barrier-free fishing platform, and a parking area at the existing canoe portage put-in area; and
- (4) enhanced bank fishing opportunities along the tailrace by clearing a path along the left (downriver) side of the tailrace.

The fishing platform must be designed so that the platform location is as close as possible to the water, with no more than 4 horizontal feet of shoreline between the platform railing and the water when all units are running.

The licensee shall include in the plan: (1) appropriate measures to prevent erosion and sedimentation during construction of each facility; and (2) a maintenance schedule for each facility that addresses, at a minimum, collection of litter and trash, clearing of brush and undergrowth, and maintenance of signs, parking areas, and facilities.

The licensee shall prepare the plan after consulting with the South Carolina Department of Natural Resources (SCDNR). The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the SCDNR, and specific descriptions of how the SCDNR's comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the SCDNR to comment and make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project specific information.

The Commission reserves the right to require changes to the plan. No construction activities associated with the recreation plan shall begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission. The facilities shall be constructed within one year of Commission approval of the final plans.

Article 410. The licensee shall, prior to initiating any proposed changes that may have an effect on the historical integrity of the project dam and powerhouse: (1) evaluate the

eligibility of the project dam and powerhouse for inclusion in the National Register of Historic Places; (2) assess the effects of the proposed changes on historical integrity; (3) prepare a cultural resources management plan to avoid or mitigate effects; (4) base (1) through (3) on the recommendations of the South Carolina State Historic Preservation Officer (SHPO) and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation; and (5) file a report on (1) through (3) for Commission approval, together with comment letters from the SHPO documenting consultation and the adequacy of the report and the work upon which it is based.

The Commission may require revisions to the report based on the filing. The licensee shall not implement the cultural resources management plan until informed by the Commission that the requirements of this article have been fulfilled.

Article 411. The licensee shall instruct project personnel of the possibility of finding archeological sites during construction or other ground-disturbing activity at the project, including erosion along the project pool margin and elsewhere in the project area. If archeological sites are found, the licensee shall: (1) consult with the South Carolina State Historic Preservation Officer (SHPO); (2) prepare a cultural resources management plan and a schedule to evaluate the significance of the sites and to avoid or mitigate any impacts to Register eligible sites; (3) base the plan on recommendations of the SHPO and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation; (4) file the plan for Commission approval, together with the written comments of the SHPO documenting consultation and the adequacy of the plan; and (5) take the necessary steps to protect the discovered archeological sites from further impact until notified by the Commission that all of these requirements have been satisfied.

The Commission may require a cultural resources survey and changes to the cultural resources management plan based on the filings. The licensee shall not implement a cultural resources management plan or begin any land-clearing or land-disturbing activities in the vicinity of any discovered sites until informed by the Commission that the requirements of this article have been fulfilled.

Article 412. (a) In accordance with the provisions of this article, the licensee shall have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain types of use and occupancy, without prior Commission approval. The licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those

purposes, the licensee shall also have continuing responsibility to supervise and control the use and occupancies for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the licensee shall take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, canceling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

(b) The type of use and occupancy of project lands and water for which the licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 watercraft at a time and where said facility is intended to serve single-family type dwellings; (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline; and (4) food plots and other wildlife enhancement. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensee shall require multiple use and occupancy of facilities for access to project lands or waters. The licensee shall also ensure, to the satisfaction of the Commission's authorized representative, that the use and occupancies for which it grants permission are maintained in good repair and comply with applicable state and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the licensee shall: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of the reservoir shoreline. To implement this paragraph (b), the licensee may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters which may be subject to the payment of a reasonable fee to cover the licensee's costs of administering the permit program. The Commission reserves the right to require the licensee to file a description of its standards, guidelines, and procedures for implementing this paragraph (b) and to require modification of those standards, guidelines, or procedures.

(c) The licensee may convey easements or rights-of-way across, or leases of, project lands for: (1) replacement, expansion, realignment, or maintenance of bridges or roads where

all necessary state and federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69-kV or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project reservoir. No later than January 31 of each year, the licensee shall file three copies of a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed.

(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certification or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 watercraft at a time and are located at least one-half mile (measured over project waters) from any other private or public marina; (6) recreational development consistent with an approved Exhibit R or approved report on recreational resources of an Exhibit E; and (7) other uses, if: (i) the amount of land conveyed for a particular use is five acres or less; (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from project waters at normal surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year. At least 60 days before conveying any interest in project lands under this paragraph (d), the licensee must submit a letter to the Director, Office of Hydropower Licensing, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked Exhibit G or K map may be used), the nature of the proposed use, the identity of any federal or state agency official consulted, and any federal or state approvals required for the proposed use. Unless the Director, within 45 days from the filing date, requires the licensee to file an application for prior approval, the licensee may convey the intended interest at the end of that period.

(e) The following additional conditions apply to any intended conveyance under paragraph (c) or (d) of this article:

(1) Before conveying the interest, the licensee shall consult with federal and state fish and wildlife or recreation agencies, as appropriate, and the State Historic Preservation Officer.

(2) Before conveying the interest, the licensee shall determine that the proposed use of the lands to be conveyed is not inconsistent with any approved Exhibit R or approved report on recreational resources of an Exhibit E; or, if the project does not have an approved Exhibit R or approved report on recreational resources, that the lands to be conveyed do not have recreational value.

(3) The instrument of conveyance must include the following covenants running with the land: (i) the use of the lands conveyed shall not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; (ii) the grantee shall take all reasonable precautions to insure that the construction, operation, and maintenance of structures or facilities on the conveyed lands will occur in a manner that will protect the scenic, recreational, and environmental values of the project; and (iii) the grantee shall not unduly restrict public access to project waters.

(4) The Commission reserves the right to require the licensee to take reasonable remedial action to correct any violation of the terms and conditions of this article, for the protection and enhancement of the project's scenic, recreational, and other environmental values.

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundaries. The project boundaries may be changed to exclude land conveyed under this article only upon approval of revised Exhibit G or K drawings (project boundary maps) reflecting exclusion of that land. Lands conveyed under this article will be excluded from the project only upon a determination that the lands are not necessary for project purposes such as operation and maintenance, flowage, recreation, public access, protection of environmental resources, and shoreline control, including shoreline aesthetic values. Absent extraordinary circumstances, proposals to exclude lands conveyed under this article from the project shall be consolidated for consideration when revised Exhibit G or K drawings would be filed for approval for other purposes.

(g) The authority granted to the licensee under this article shall not apply to any part of the public lands and reservations of the United States included within the project boundary.

(E) The licensee shall serve copies of any Commission filing required by this order on any entity specified in this order to be consulted on matters related to that filing. Proof of service on these entities must accompany the filing with the Commission.

(F) This order is final unless a request for rehearing is filed within 30 days from the date of its issuance, as provided in Section 313(a) of the FPA. The filing of a request for rehearing does not operate as a stay of the effective date of this order or of any date specified in this order, except as specifically ordered by the Commission. The licensee's failure to file a request for rehearing shall constitute acceptance of this license.

By the Commission.

(S E A L)



Lois D. Cashell,
Secretary.

FEDERAL ENERGY REGULATORY COMMISSION

**TERMS AND CONDITIONS OF LICENSE FOR CONSTRUCTED
MAJOR PROJECT AFFECTING NAVIGABLE
WATERS OF THE UNITED STATES**

Article 1. The entire project, as described in this order of the Commission, shall be subject to all of the provisions, terms, and conditions of the license.

Article 2. No substantial change shall be made in the maps, plans, specifications, and statements described and designated as exhibits and approved by the Commission in its order as a part of the license until such change shall have been approved by the Commission: Provided, however, That if the Licensee or the Commission deems it necessary or desirable that said approved exhibits, or any of them, be changed, there shall be submitted to the Commission for approval a revised, or additional exhibit or exhibits covering the proposed changes which, upon approval by the Commission, shall become a part of the license and shall supersede, in whole or in part, such exhibit or exhibits theretofore made a part of the license as may be specified by the Commission.

Article 3. The project area and project works shall be in substantial conformity with the approved exhibits referred to in Article 2 herein or as changed in accordance with the provisions of said article. Except when emergency shall require for the protection of navigation, life, health, or property, there shall not be made without prior approval of the Commission any substantial alteration or addition not in conformity with the approved plans to any dam or other project works under the license or any substantial use of project lands and waters not authorized herein; and any emergency alteration, addition, or use so made shall thereafter be subject to such modification and change as the Commission may direct. Minor changes in project works, or in uses of project lands and waters, or divergence from such approved exhibits may be made if such changes will not result in a decrease in efficiency, in a material increase in cost, in an adverse environmental impact, or in impairment of the general scheme of development; but any of such minor changes made without the prior approval of the Commission, which in its judgment have produced or will produce any of such results, shall be subject to such alteration as the Commission may direct.

Article 4. The project, including its operation and maintenance and any work incidental to additions or alterations authorized by the Commission, whether or not conducted upon lands of the United States, shall be subject to the inspection and supervision of the Regional Engineer, Federal Energy Regulatory Commission, in the region wherein the project is located, or of such other officer or agent as the Commission may designate, who shall be the authorized representative of the Commission for such purposes. The Licensee shall cooperate fully with said representative and shall furnish him such information as he may require concerning the operation and maintenance of the project, and any such alterations thereto, and shall notify him of the date upon which work with respect to any alteration will begin, as far in advance thereof as said representative may reasonably specify, and shall notify him promptly in writing of any suspension of work for a period of more than one week, and of its resumption and completion. The Licensee shall submit to said representative a detailed program of inspection by the Licensee that will provide for an adequate and qualified inspection force for construction of any such alterations to the project. Construction of said alterations or any feature thereof shall not be initiated until the program of inspection for the alterations or any feature thereof has been approved by said representative. The Licensee shall allow said representative and other officers or employees of the United States, showing proper credentials, free and unrestricted access to, through, and across the project lands and project works in the performance of their official duties. The Licensee shall comply with such rules and regulations of general or special applicability as the Commission may prescribe from time to time for the protection of life, health, or property.

Article 5. The Licensee, within five years from the date of issuance of the license, shall acquire title in fee or the right to use in perpetuity all lands, other than lands of the United States, necessary or appropriate for the construction maintenance, and operation of the project. The Licensee or its successors and assigns shall, during the period of the license, retain the possession of all project property covered by the license as issued or as later amended, including the project area, the project works, and all franchises, easements, water rights, and rights of occupancy and use; and none of such properties shall be voluntarily sold, leased, transferred, abandoned, or otherwise disposed of without the prior written approval of the Commission, except that the Licensee may lease or otherwise dispose of interests in project lands or property without specific written approval of the Commission pursuant to the then current regulations of the Commission. The provisions of this article are not intended to prevent the abandonment or the retirement from service of structures, equipment, or other project works in connection with replacements thereof when they become obsolete, inadequate, or inefficient for further service due to wear and tear; and mortgage or trust deeds or judicial sales made thereunder, or tax sales, shall not be deemed voluntary transfers within the meaning of this article.

Article 6. In the event the project is taken over by the United States upon the termination of the license as provided in Section 14 of the Federal Power Act, or is transferred to a new licensee or to a nonpower licensee under the provisions of Section 15 of said Act, the Licensee, its successors and assigns shall be responsible for, and shall make good any defect of title to, or of right of occupancy and use in, any of such project property that is necessary or appropriate or valuable and serviceable in the maintenance and operation of the project, and shall pay and discharge, or shall assume responsibility for payment and discharge of, all liens or encumbrances upon the project or project property created by the Licensee or created or incurred after the issuance of the license: Provided, That the provisions of this article are not intended to require the Licensee, for the purpose of transferring the project to the United States or to a new licensee, to acquire any different title to, or right of occupancy and use in, any of such project property than was necessary to acquire for its own purposes as the Licensee.

Article 7. The actual legitimate original cost of the project, and of any addition thereto or betterment thereof, shall be determined by the Commission in accordance with the Federal Power Act and the Commission's Rules and Regulations thereunder.

Article 8. The Licensee shall install and thereafter maintain gages and stream-gaging stations for the purpose of determining the stage and flow of the stream or streams on which the project is located, the amount of water held in and withdrawn from storage, and the effective head on the turbines; shall provide for the required reading of such gages and for the adequate rating of such stations; and shall install and maintain standard meters adequate for the determination of the amount of electric energy generated by the project works. The number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, shall at all times be satisfactory to the Commission or its authorized representative. The Commission reserves the right, after notice and opportunity for hearing, to require such alterations in the number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, as are necessary to secure adequate determinations. The installation of gages, the rating of said stream or streams, and the determination of the flow thereof, shall be under the supervision of, or in cooperation with, the District Engineer of the United States Geological Survey having charge of stream-gaging operations in the region of the project, and the Licensee shall advance to the United States Geological Survey the amount of funds estimated to be necessary for such supervision, or cooperation for such periods as may mutually agreed upon. The Licensee shall keep accurate and sufficient records of the foregoing determinations to the satisfaction of the Commission, and shall make return of such records annually at such time and in such form as the Commission may prescribe.

Article 9. The Licensee shall, after notice and opportunity for hearing, install additional capacity or make other changes in the project as directed by the Commission, to the extent that it is economically sound and in the public interest to do so.

Article 10. The Licensee shall, after notice and opportunity for hearing, coordinate the operation of the project, electrically and hydraulically, with such other projects or power systems and in such manner as the Commission may direct in the interest of power and other beneficial public uses of water resources, and on such conditions concerning the equitable sharing of benefits by the Licensee as the Commission may order.

Article 11. Whenever the Licensee is directly benefited by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement, the Licensee shall reimburse the owner of the headwater improvement for such part of the annual charges for interest, maintenance, and depreciation thereof as the Commission shall determine to be equitable, and shall pay to the United States the cost of making such determination as fixed by the Commission. For benefits provided by a storage reservoir or other headwater improvement of the United States, the Licensee shall pay to the Commission the amounts for which it is billed from time to time for such headwater benefits and for the cost of making the determinations pursuant to the then current regulations of the Commission under the Federal Power Act.

Article 12. The United States specifically retains and safeguards the right to use water in such amount, to be determined by the Secretary of the Army, as may be necessary for the purposes of navigation on the navigable waterway affected; and the operations of the Licensee, so far as they affect the use, storage and discharge from storage of waters affected by the license, shall at all times be controlled by such reasonable rules and regulations as the Secretary of the Army may prescribe in the interest of navigation, and as the Commission may prescribe for the protection of life, health, and property, and in the interest of the fullest practicable conservation and utilization of such waters for power purposes and for other beneficial public uses, including recreational purposes, and the Licensee shall release water from the project reservoir at such rate in cubic feet per second, or such volume in acre-feet per specified period of time, as the Secretary of the Army may prescribe in the interest of navigation, or as the Commission may prescribe for the other purposes hereinbefore mentioned.

Article 13. On the application of any person, association, corporation, Federal agency, State or municipality, the Licensee shall permit such reasonable use of its reservoir or other project properties, including works, lands and water rights, or parts thereof, as may be ordered by the Commission, after notice and opportunity for hearing, in the interests of comprehensive development of the waterway or waterways involved

and the conservation and utilization of the water resources of the region for water supply or for the purposes of steam-electric, irrigation, industrial, municipal or similar uses. The Licensee shall receive reasonable compensation for use of its reservoir or other project properties or parts thereof for such purposes, to include at least full reimbursement for any damages or expenses which the joint use causes the Licensee to incur. Any such compensation shall be fixed by the Commission either by approval of an agreement between the Licensee and the party or parties benefiting or after notice and opportunity for hearing. Applications shall contain information in sufficient detail to afford a full understanding of the proposed use, including satisfactory evidence that the applicant possesses necessary water rights pursuant to applicable State law, or a showing of cause why such evidence cannot concurrently be submitted, and a statement as to the relationship of the proposed use to any State or municipal plans or orders which may have been adopted with respect to the use of such waters.

Article 14. In the construction or maintenance of the project works, the Licensee shall place and maintain suitable structures and devices to reduce to a reasonable degree the liability of contact between its transmission lines and telegraph, telephone and other signal wires or power transmission lines constructed prior to its transmission lines and not owned by the Licensee, and shall also place and maintain suitable structures and devices to reduce to a reasonable degree the liability of any structures or wires falling or obstructing traffic or endangering life. None of the provisions of this article are intended to relieve the Licensee from any responsibility or requirement which may be imposed by any other lawful authority for avoiding or eliminating inductive interference.

Article 15. The Licensee shall, for the conservation and development of fish and wildlife resources, construct, maintain, and operate, or arrange for the construction, maintenance, and operation of such reasonable facilities, and comply with such reasonable modifications of the project structures and operation, as may be ordered by the Commission upon its own motion or upon the recommendation of the Secretary of the Interior or the fish and wildlife agency or agencies of any State in which the project or a part thereof is located, after notice and opportunity for hearing.

Article 16. Whenever the United States shall desire, in connection with the project, to construct fish and wildlife facilities or to improve the existing fish and wildlife facilities at its own expense, the Licensee shall permit the United States or its designated agency to use, free of cost, such of the Licensee's lands and interests in lands, reservoirs, waterways and project works as may be reasonably required to complete such facilities or such improvements thereof. In addition, after notice and opportunity for hearing, the Licensee shall modify the project operation as may be reasonably prescribed by the Commission in order to permit the maintenance and operation of the fish and wildlife facilities constructed or improved by the United States under the provisions of this article.

This article shall not be interpreted to place any obligation on the United States to construct or improve fish and wildlife facilities or to relieve the Licensee of any obligation under this license.

Article 17. The Licensee shall construct, maintain, and operate, or shall arrange for the construction, maintenance, and operation of such reasonable recreational facilities, including modifications thereto, such as access roads, wharves, launching ramps, beaches, picnic and camping areas, sanitary facilities, and utilities, giving consideration to the needs of the physically handicapped, and shall comply with such reasonable modifications of the project, as may be prescribed hereafter by the Commission during the term of this license upon its own motion or upon the recommendation of the Secretary of the Interior or other interested Federal or State agencies, after notice and opportunity for hearing.

Article 18. So far as is consistent with proper operation of the project, the Licensee shall allow the public free access, to a reasonable extent, to project waters and adjacent project lands owned by the Licensee for the purpose of full public utilization of such lands and waters for navigation and for outdoor recreational purposes, including fishing and hunting: Provided, That the Licensee may reserve from public access such portions of the project waters, adjacent lands, and project facilities as may be necessary for the protection of life, health, and property.

Article 19. In the construction, maintenance, or operation of the project, the Licensee shall be responsible for, and shall take reasonable measures to prevent, soil erosion on lands adjacent to streams or other waters, stream sedimentation, and any form of water or air pollution. The Commission, upon request or upon its own motion, may order the Licensee to take such measures as the Commission finds to be necessary for these purposes, after notice and opportunity for hearing.

Article 20. The Licensee shall clear and keep clear to an adequate width lands along open conduits and shall dispose of all temporary structures, unused timber, brush, refuse, or other material unnecessary for the purposes of the project which results from the clearing of lands or from the maintenance or alteration of the project works. In addition, all trees along the periphery of project reservoirs which may die during operations of the project shall be removed. All clearing of the lands and disposal of the unnecessary material shall be done with due diligence and to the satisfaction of the authorized representative of the Commission and in accordance with appropriate Federal, State, and local statutes and regulations.

Article 21. Material may be dredged or excavated from, or placed as fill in, project lands and/or waters only in the prosecution of work specifically authorized under

the license; in the maintenance of the project; or after obtaining Commission approval, as appropriate. Any such material shall be removed and/or deposited in such manner as to reasonably preserve the environmental values of the project and so as not to interfere with traffic on land or water. Dredging and filling in a navigable water of the United States shall also be done to the satisfaction of the District Engineer, Department of the Army, in charge of the locality.

Article 22. Whenever the United States shall desire to construct, complete, or improve navigation facilities in connection with the project, the Licensee shall convey to the United States, free of cost, such of its lands and rights-of-way and such rights of passage through its dams or other structures, and shall permit such control of its pools, as may be required to complete and maintain such navigation facilities.

Article 23. The operation of any navigation facilities which may be constructed as a part of, or in connection with, any dam or diversion structure constituting a part of the project works shall at all times be controlled by such reasonable rules and regulations in the interest of navigation, including control of the level of the pool caused by such dam or diversion structure, as may be made from time to time by the Secretary of the Army.

Article 24. The Licensee shall furnish power free of cost to the United States for the operation and maintenance of navigation facilities in the vicinity of the project at the voltage and frequency required by such facilities and at a point adjacent thereto, whether said facilities are constructed by the Licensee or by the United States.

Article 25. The Licensee shall construct, maintain, and operate at its own expense such lights and other signals for the protection of navigation as may be directed by the Secretary of the Department in which the Coast Guard is operating.

Article 26. If the Licensee shall cause or suffer essential project property to be removed or destroyed or to become unfit for use, without adequate replacement, or shall abandon or discontinue good faith operation of the project or refuse or neglect to comply with the terms of the license and the lawful orders of the Commission mailed to the record address of the Licensee or its agent, the Commission will deem it to be the intent of the Licensee to surrender the license. The Commission, after notice and opportunity for hearing, may require the Licensee to remove any or all structures, equipment and power lines within the project boundary and to take any such other action necessary to restore the project waters, lands, and facilities remaining within the project boundary to a condition satisfactory to the United States agency having jurisdiction over its lands or the Commission's authorized representative, as appropriate, or to provide for the continued operation and maintenance of nonpower facilities and fulfill such other obligations under the license as the Commission may prescribe. In addition, the Commission in its

discretion, after notice and opportunity for hearing, may also agree to the surrender of the license when the Commission, for the reasons recited herein, deems it to be the intent of the Licensee to surrender the license.

Article 27. The right of the Licensee and of its successors and assigns to use or occupy waters over which the United States has jurisdiction, or lands of the United States under the license, for the purpose of maintaining the project works or otherwise, shall absolutely cease at the end of the license period, unless the Licensee has obtained a new license pursuant to the then existing laws and regulations, or an annual license under the terms and conditions of this license.

Article 28. The terms and conditions expressly set forth in the license shall not be construed as impairing any terms and conditions of the Federal Power Act which are not expressly set forth herein.