ENVIRONMENTAL ASSESSMENT 1/
DIVISION OF ENVIRONMENTAL ANALYSIS, OFFICE OF HYDROPOWER LICENSING
FEDERAL ENERGY REGULATORY COMMISSION

Date: 8 April 1986

Project Name: Comtu Falls FERC No. 7888 - 001

A. APPLICATION
1. Application Type: Minor License Date Filed: 2 / 7 /84

2. Applicant: Comtu Falls Corporation and Comtu Associates

3. Water Body: Black River River Basin: Connecticut

4. Nearest city or town: Springfield

5. County: Windsor State: Vermont

6. Federal Lands Affected (If yes, specify land management agency.)
X No ___ Yes: _____ (agency); acreage = _____

B. RESOURCE DEVELOPMENT
1. Purpose: The purpose of the proposed project is to develop further the hydroelectric potential of the existing Comtu Falls Dam.

2. Need for power: The project would provide a small portion of the resource requirements projected for the New England Power Pool (NEPOOL) area. The staff's economic analyses show a need for the project. From the time the project becomes operational until it is needed to meet increased regional power needs, the proposed project would be available to lessen the use of existing fossil-fueled electric generating plants located in the NEPOOL area, thus conserving nonrenewable resources and reducing the emission of noxious byproducts of combustion.

C. PROPOSED PROJECT AND ALTERNATIVES
1. Description of the proposed action: The run-of-river project would consist of: (1) the existing 4-foot-high and 128-foot-long Comtu Falls Dam, owned by the applicant; (2) 2-foot-high flashboards; (3) an intake structure at the west side of the dam; (4) a 6-foot-wide, 6-foot-high, and 65-foot-long reinforced concrete penstock; (5) a powerhouse with an existing 250-kilowatt (kW) turbine-generator unit and a new 150-kW turbine-generator unit; (6) a 30-foot-long, 4-kilovolt transmission line; and (7) appurtenances.

1/ Figures and attachments referenced in the text are omitted from this document due to reproduction requirements.

2. Applicant's Proposed Mitigative Measures

a. Construction: None are proposed

b. Operation: The applicant proposes to pass 0.5 inch of water [4 cubic feet per second (cfs)] continuously over the spillway and to pass all flows over the spillway when the inflow falls below the 44 cfs required for turbine operation.

3. Section 4(e) Conditions

___ Pursuant to Section 4(e) of the Federal Power Act, the Federal land management agency has provided terms and conditions by letter dated: ___/___/___ (Attachment _____).

Remarks: _____

4. Alternatives to the Proposed Action

a. X No other reasonable action alternatives have been found.

___ Action alternative: _____

b. Alternative of no action: No action would constitute a denial of license.

D. AFFECTED ENVIRONMENT

1. Brief descriptions of the resources are given below.

a. Geology and Soils

Significant features include: Area bedrock consists of quartz and muscovite schist of the Gile Mountain formation. Bedrock is exposed in areas along both sides of the river.

b. Streamflow

low flow: 16 cfs; flow parameter: summer, single occurence
high flow: 900 cfs; flow parameter: spring, single occurence
average flow: 345 cfs; Remarks: Summer low flows are controlled by the North Springfield Flood Control Dam, upstream, which is operated by the U.S. Army, Corps of Engineers.

c. Water Quality

The existing water quality conditions are: falls and rapids between Comtu Dam and the upstream Gillman Dam create high dissolved oxygen (DO) levels in the river at the project site. D.O. levels upstream and downstream of Comtu Dam exceed the state standard of 6 milligrams per liter.

d. Fisheries

Anadromous: X None ___ Species include:

Resident: ___ None X Species include: brown trout, smallmouth bass, rock bass, white sucker, common shiner, brown bullhead, and creek chub.

Significant features include: upstream fish passage is blocked by Lovejoy Dam, which is downstream from Comtu Dam. The Black River is part of the Connecticut River Fish Passage Action Plan, which may seek to restore anadromous fish passage within the next 15 years.

e. Vegetation

Cover Type	Dominant Species
urban-scrub	staghorn sumac, elm, honeysuckle, and grasses

Significant features include:

f. Wildlife

Species inhabiting the project area include: kingfisher, pigeon, house sparrow, starling, muskrat, and white-footed mouse.

Significant features include:

g. Archeological

X There are no known prehistoric sites in the project impact areas.
___ Known sites occur within the project impact areas. Description:

Remarks:

h. Historical

___ There are no sites of historical significance in the project impact areas.
X The areas contain sites of historical significance. Description: The project is within the Springfield Historic District.

The structures described above are: X listed on the National Register.
___ eligible for listing.
___ not listed on the National Register.

Remarks:

i. Visual Quality

The significant visual features of the area include: the Springfield Historic District and water falling over the series of small dams on the Black River as it flows through downtown Springfield.

j. Recreation

The existing recreational use(s) of the area include: limited fishing.

k. Land Use

Land use in the project area includes: urban development. The site is within downtown Springfield, Vermont.

l. Socioeconomics

The economic and social well-being of the area is influenced by: industry and small retail businesses.

m. Ambient noise quality is: fair, the project is located in an urban setting.

n. Ambient air quality is: fair, small industries and automobile traffic are sources of pollution in the immediate area.

o. Other resources include:

E CONSULTATION AND COMPLIANCE

1. Fish and Wildlife Consultation (Fish & Wildlife Coordination Act)
   (a) Fish & Wildlife Service (FWS): X Yes ___ No (b) State(s): X Yes ___ No
   (c) National Marine Fisheries Service (NMFS): X Yes ___ No
   (d) Remarks:

2. Terms and Conditions for Exemptions from Licensing [18 CFR §4.106(b) or 4.94(b)]
   ___ The agencies listed below have provided terms and conditions for the proposed project (Attachment ____).
   X Not applicable

Agency	Date of Letter
	/ /
	/ /
	/ /
	/ /

3. Section 7 Consultation (Endangered Species Act)
   (a) X Listed Species: None
   (b) X Not required. ___ Required; completed (date): / /
   (c) Remarks: U.S. Fish and Wildlife Service states (letter from Gordon E. Beckett, Acting Area Manager, New England Area Office, Concord, New Hampshire, September 10 1981) that except for transients, no federally listed or proposed threatened or endangered species occur in the project area.

4. Section 401 Certification (Clean Water Act)
   ___ Not Required X Received ___ Waived ___ Requested: 10 / 04 /83 (date of letter)

5. Cultural Resource Consultation (Historic Preservation Act)
   (a) Register Status: ___ None ___ Potentially Eligible X Eligible or Listed
   (b) State Historic Preservation Officer (SHPO): X Yes ___ No
   (c) National Park Service (NPS): X Yes ___ No
   (d) Council: X Not required ___ Completed (date): / /
   (e) Further consultation requirements: ___ Yes X Not required
   (f) Remarks: the Vermont State Historic Preservation Officer (SHPO) states that the project would not affect any eligible or listed properties within the Springfield Historic District (letter from Eric Gilbertson, Director/Deputy SHPO, Division of Historic Preservation, September 7, 1983).

6. Recreation Consultation (Federal Power Act, §10(a))
   (a) U.S. Owners ___ Yes X No (b) NPS: X Yes ___ No
   (c) State(s): X Yes ___ No (d) Remarks:

7. Wild and Scenic Rivers (Wild and Scenic Rivers Act)
   (a) Status: X None. ___ Listed. Determination completed: / /
   Administering Agency:
   (b) Remarks:

F. COMMENTS

1. The following entities provided comments on the application in response to the public notice dated 11 / 28 / 84 .

	Commenting Entity	Date of Letter
	State of Vermont Agency of Environmental Conservation	1 / 7 / 85
	State of Vermont Agency of Environmental Conservation	1 / 15 / 85
	National Marine Fisheries Service	1 / 28 / 85
	Army Corps of Engineers	1 / 27 / 85
	Environmental Protection Agency	1 / 11 / 85
	Department of the Interior	2 / 5 / 85
	Department of the Interior	4 / 10 / 85
*	Town of Springfield, Vermont	1 / 17 / 85
*	State of Vermont	1 / 4 / 85

* Indicates an Intervention

2. The Applicant responded to the comments by letter dated 3 / 26 / 85 .

G. DISCUSSION OF ENVIRONMENTAL ISSUES

Mitigative measures recommended by Staff are in addition to those proposed by the applicant, Section C(2), and those conditions identified in Sections C(3) and E(2), as appropriate. There are 2 issues addressed below.

1. Issue: Minimum flow requirement for the protection of aquatic resources.

Comments: The Department of the Interior (Interior) and the State of Vermont Agency of Environmental Conservation (AEC) request an instantaneous minimum flow of 0.5 inch of water (4 cfs) to be passed over the crest of the spillway or inflow to the project, and to pass all flows over the spillway when inflow falls below 44 cfs.

Applicant's Response: The applicant concurs.

Conclusions and Recommendations: The minimum flow regime recommended by Interior and AEC would provide for adequate protection of aquatic resources below the project dam and should be implemented.

2. Issue: Protection of any archeological and historical sites encountered during construction or affected by new project construction.

Comments: The Vermont State Historic Preservation Officer indicates that the project is within the Springfield Downtown Historic District, which is listed on the National Register of Historic Places, but the proposed project would have no affect on those properties. The Department of the Interior requests a license article be included to ensure the protection of cultural resources.

Applicant's Response: No response.

Conclusions and Recommendations: Any sites encountered during construction or located in areas affected by any new construction could be eligible for listing on the National Register of Historic Places. Such eligible sites could be adversely affected by construction activities. The licensee should have construction personnel monitor ground-disturbing activities to determine whether a potential exists for affecting sites. Before resuming construction in the vicinity of any archeological or historic sites encountered during construction or the undertaking of any new construction outside of the project area, the SHPO should be consulted concerning any needed studies and measures for avoidance or mitigation.

3. Issue:

Comments:

Applicant's Response:

Conclusions and Recommendations:

MMARY OF ENVIRONMENTAL IMPACTS

1. Assessment of adverse and beneficial impacts expected from the project as proposed by the Applicant (P); the proposed project with Staff's recommended mitigation (Ps) [Section G]; and any other alternative considered (A). *

Resource	Impact P	Ps	A	Remarks
a. Geology/Soils	0			
b. Streamflow	0			
c. Water quality: Temperature	0			(c) The State of Vermont (letter from Stephen B. Sease, Director of Planning, Agency of Environmental Conservation, January 15, 1985) states that the addition of a second turbine is unlikely to reduce dissolved oxygen to substandard levels. Installation of a new turbine and desilting processes would temporarily increase stream turbidity.
Dissolved oxygen	0			
Turbidity and sedimentation	1AS			
Other:				
d. Fisheries: Anadromous	0			(d) Fish mortality would increase to a minor degree due to the addition of a second turbine and operation at lower flows.
Resident	1AL			
e. Vegetation	0			
f. Wildlife	0			
g. Archeological	0			
h. Historical	0			
i. Visual quality	0			
j. Recreation	0			
k. Land use	0			
l. Socioeconomics	0			
m. Noise quality	1AS			(m,n) Installation of the new turbine would result in a minor, temporary increase in exaust emissions, dust, and noise.
n. Air quality	1AS			

* For licenses, the assessment reflects the adoption of any Federal land management agency 4(e) conditions, in addition to the Applicant's proposed mitigation. For exemptions, the assessments reflect any terms and conditions set by the agencies, in addition to the Applicant's proposed mitigation. Assessment symbols indicate the following impact levels:

O = No impact; 1 = Minor impact; 2 = Substantial impact; 3 = Major impact;
A = Adverse; B = Beneficial; L = Long-term impact; S = Short-term impact.

(e.g., 1BL = Minor, beneficial, long-term impact)

2. Impacts of the No-action Alternative
No action would result in the continuance of existing environmental conditions. Electrical power that would be generated by the proposed project would have to be produced by coal, gas, oil, or nuclear fueled generating facilities.

3. Recommended Alternative (including proposed, required, and recommended mitigative measures): X Proposed Project ___ Alternative action ___ No action

4. Reason(s) for the Selection of the Preferred Alternative
The proposed project would generate electricity from a renewable resource without creating significant environmental impacts.

I. SUMMARY OF UNAVOIDABLE ADVERSE ENVIRONMENTAL IMPACTS AND BENEFICIAL IMPACTS
The proposed addition of a second turbine-generator to operate at low flows would increase turbine related fish mortality to a minor degree. The installation of the new turbine would create minor, short-term increases in stream turbidity and noise.

J. CONCLUSION

X Finding of No Significant Impact. Approval of the recommended alternative [H(3)] would not constitute a major Federal action significantly affecting the quality of the human environment; therefore, an Environmental Impact Statement (EIS) will not be prepared.

___ Intent to Prepare an EIS. Approval of the recommended alternative [H(3)] would constitute a major Federal action significantly affecting the quality of the human environment; therefore, an Environmental Impact Statement will be prepared.

K. LIST OF PREPARERS

Name	Position Title
James J. Keany	Ecologist (Coordinator)
Robert A. Crowley	Engineer
Robert Grieve	Fisheries Biologist

Attachment A

Cumulative Impact Analysis for FERC Project No. 7888

A. Black River Watershed

The Black River watershed is located in southeastern Vermont and forms a portion of the much larger Connecticut River Basin (Figure 1). The watershed is about 22 miles long, with a maximum width of 12 miles and encompasses a drainage area of about 195 square miles. The Black River originates in the town of Plymouth, Vermont and flows for some 39 miles through largely-forested lands to its confluence with the Connecticut River near Springfield, Vermont.

A large number of existing dams on the Connecticut River and its tributaries are being retrofitted or reactivated for hydropower production. As such, there is concern that multiple hydropower development within the Connecticut River Basin will potentially cause cumulative adverse impacts on important environmental resources identified for the basin. Thus, staff has analyzed the potential for the Comtu Falls Project, located on the Black River, to contribute to cumulative adverse impacts in the Connecticut River Basin.

B. Existing and Proposed Hydropower Development

At present, there is one existing licensed project, Cavendish Station (FERC No. 2489), and one project exempted from licensing, Slack Dam (FERC No. 8014), located on the Black River (Figure 1). Proposed projects, other than the Comtu Falls Project, include Lovejoy Dam (FERC No. 9649), Fellows Dam (FERC No. 9648), Gilman Dam (FERC No. 9650), all located at existing dams in the Town of Springfield, Vermont, and Tolles Hill Dam (FERC No. 7932), located 3 miles upstream of the Corps of Engineers' North Springfield flood control dam (Figure 1).

C. Target Resources

A target resource is defined as an important resource that could be adversely affected by two or more proposed hydroelectric projects. Atlantic salmon were identified by staff as the target resource for the Connecticut River Basin and potentially for the project area. The identification of the target resource was developed from a review of: (1) data obtained from existing hydropower projects constructed in the Connecticut River Basin and their related resources; (2) anadromous fish restoration plans for the Connecticut River; and (3) comments received by federal and state natural resource agencies and the public concerning proposed projects within the basin. A discussion of the importance of the target resource follows.

In recent years, the coordinated state-federal-private efforts of stocking hatchery-reared Atlantic salmon into the Connecticut River Basin to restore historic runs have begun to show signs of success. The Atlantic salmon restoration plan (Stolte, 1982), which outlines the restoration program, has identified stream reaches within the basin suitable for wild smolt production and stream reaches that could be utilize as rearing habitat for introduced fry. The plan also identifies obstructions where fish passage facilities will be needed in the near future and those where passage facilities would be deferred until such time as they are warranted, depending on the success of the restoration effort. The Black River is one such tributary where, according to the restoration plan, fish passage facilities are deferred for the present.

D. Cumulative Impacts to Target Resources

Currently, Atlantic salmon do not have access to the Black River. There are no plans to construct fish passage facilities at any dam on the Black River or to utilize the river for rearing of fry or smolt at this time. Of 34 tributaries in the Connecticut River Basin given consideration for restoration, the Black River is not a high priority river in the restoration program (Letter from Mr. Stephen B. Sease, Director of Planning, Vermont Agency of Environmental Conservation, Montpelier, Vermont, February 5, 1986). Numerous dams and high summer water temperature reduce the restoration potential for the Black River.

The Atlantic salmon restoration plan for the Connecticut River states that there is the possibility that stream reaches not considered critical to the restoration program may never receive restoration consideration. The possibility remains, however, that the restoration efforts could change depending on the future success. Thus, the Black River could be targeted for Atlantic salmon restoration efforts and fish passage facilities might be required at project dams. The installation of fish passage facilities would need to be determined on a case by case basis as mutually agreed upon by the resource agencies implementing the program and should not be precluded by the proposed project. Therefore, any license issued for the Comtu Falls Project should be conditioned to provide for upstream fish passage facilities as determined by resource agencies, to provide measures to prevent entrainment and impingement of downstream migrants, and for changes in project operation or facilities to protect out-migrating Atlantic salmon when needed. Commission orders issuing such licenses contain adequate authority to require such fish protection measures.

Based on the information provided above, staff concludes that the Comtu Falls Project would have no potential for causing cumulative adverse impacts to Atlantic salmon in the project area nor for the Connecticut River Basin.

LITERATURE CITED

Stolte, L.W. 1982. A strategic plan for the restoration of Atlantic salmon to the Connecticut River Basin (revised September, 1982). U.S. Fish and Wildlife Service, Laconia, New Hampshire.

Form L-15
(October, 1975)

FEDERAL POWER COMMISSION

TERMS AND CONDITIONS OF LICENSE FOR UNCONSTRUCTED MINOR PROJECT AFFECTING THE INTERESTS OF INTERSTATE OR FOREIGN COMMERCE

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 works shall be constructed 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.

Upon the completion of the project, or at such other time as the Commission may direct, the Licensee shall submit to the Commission for approval revised exhibits insofar as necessary to show any divergence from or variations in the project area and project boundary as finally located or in the project works as actually constructed when compared with the area and boundary shown and the works described in the license or in the exhibits approved by the Commission, together with a statement in writing setting forth the reasons which in the opinion of the Licensee necessitated or justified variation in or divergence from the approved exhibits. Such revised exhibits shall, if and when approved by the Commission, be made a part of the license under the provisions of Article 2 hereof.

Article 4. The construction, operation, and maintenance of the project and any work incidental to additions or alterations shall be subject to the inspection and supervision of the Regional Engineer, Federal Power 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 a detailed program of inspection by the Licensee that will provide for an adequate and qualified inspection force for construction of the project and for any subsequent alterations to the project. Construction of the project works or any feature or alteration thereof shall not be initiated until the program of inspection for the project works or any such feature thereof has been approved by said representative. The Licensee shall also furnish to said representative such further information as he may require concerning the construction, operation, and maintenance of the project, and of any alteration thereof, and shall notify him of the date upon which work 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 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. 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 be 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 7. 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 8. 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 9. 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 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 Commission may prescribe for the purposes hereinbefore mentioned.

Article 10. 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 11. 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 12. 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 13. 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 14. 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 15. The Licensee shall consult with the appropriate State and Federal agencies and, within one year of the date of issuance of this license, shall submit for Commission approval a plan for clearing the reservoir area. Further, 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. Upon approval of the clearing plan 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 16. 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 17. 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 18. 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.