

LEXSEE 19 FPC 704

CAROLINA ALUMINUM COMPANY, PROJECT NO. 2197; CAROLINA
POWER & LIGHT COMPANY, PROJECT NO. 2206

FEDERAL POWER COMMISSION
PRESIDING EXAMINER

19 F.P.C. 704; 1958 FPC LEXIS 356

February 11, 1958

[*1]

DECISION UPON APPLICATIONS FOR LICENSE UNDER THE
PROVISIONS OF THE FEDERAL POWER ACT

OPINIONBY: LAW

OPINION:

LAW, *Presiding Examiner*: These consolidated proceedings are based upon an application filed February 6, 1956, by Carolina Aluminum Company (Aluminum) for license under Section 4 (e) of the Federal Power Act for Project No. 2197 to consist of the constructed or existing High Rock, Narrows, and Falls developments and the proposed Tuckertown development, situated on the lower Yadkin stretch of the Yadkin-Pee Dee River in North Carolina; and upon an application filed May 29, 1956 and supplemented March 11, 1957 by Carolina Power & Light Company (Power & Light) which seeks a similar license for its existing Blewett Falls and Tillery developments (Project No. 2206) located on the Yadkin-Pee Dee River in North Carolina and immediately downstream from the developments of Aluminum for which a license is sought in Project No. 2197. The application of Power & Light seeks, in addition to authority for the ownership and continued operation of the two existing developments, authority to expand the Tillery development by the addition of a turbine rated at 31,100 horsepower direct-connected [*2] to a generator of 22,000 kilowatts, with all the facilities necessary to electric production thereby. Provision for the future addition of this unit was made at the time of the initial construction of Tillery, and no additional dam construction is required.

In the Aluminum case, Project No. 2197, the Commission (without hearing) issued an order on April 3, 1957, granting a license for Project No. 2197, which said order terminated an investigation of the existing developments (as occupancy by Aluminum of a portion of the Yadkin River) instituted December 15, 1937 in Docket No. IT-5499, and provided that the license should be effective for a period of fifty years from January 1, 1947 insofar as it authorized continued operation and maintenance of the existing High Rock, Narrows and Falls developments and for a period of fifty years from April 1, 1957 insofar as it authorized construction and operation of the proposed Tuckertown development. The license issued April 3, 1957, was not accepted by Aluminum and on April 25, 1957 that Applicant filed a petition for rehearing, requesting opportunity for oral argument and the presentation of evidence concerning the matters involved, including [*3] particularly the term of the license period for Aluminum's three existing developments.

Power & Light has consistently taken a position, since the filing of its application for license for Project No. 2206 on May 29, 1956, that it should receive a project license for fifty years from the date of issuance thereof because the additional construction at Tillery makes this a new and enlarged project and its filing of the application for license is a purely voluntary action. While there was an investigation authorized, in Docket No. IT-5498, on December 15, 1937 of the occupancy of that portion of the Yadkin River including

the Blewett Falls and Tillery developments, the investigation was never pressed and no entries appear in the records of the Commission in Docket No. IT-5498 subsequent to the proof of service of notice upon Power & Light and upon the North Carolina Commission, of the authorization of the said investigation.

Because of the similarity of the issue of the length of the license period involved in these two proceedings and the fact that a considerable degree of coordination in the operation of the two projects appeared to be desirable and probably inevitable, the application [*4] of Power & Light was consolidated for hearing with that of Aluminum which had already been set for hearing by order of July 20, 1957, and the new order issued August 21, 1957, provided that the consolidated hearing should commence October 15, 1957 at Washington, D.C. On October 4, 1957, Miss Eliza J. Doby, of Albemarle, North Carolina, was authorized to intervene in the proceeding on Project No. 2197. On October 9, 1957, the State of North Carolina filed a petition to intervene in both proceedings. Such intervention was permitted by the Presiding Examiner at the hearing, and on October 31, 1957, the Commission issued an order confirming the Presiding Examiner's action by formally admitting the State of North Carolina as an intervener.

Hearing sessions continued from October 15 through October 19, 1957. Evidence was presented by both applicants and by the Commission's Staff Counsel. The State of North Carolina supported both applications, but presented no evidence. Miss Eliza J. Doby opposed the granting of the license to Aluminum, but did not raise any question as to the period of the license, if it were granted. Supporting briefs were filed by the two applicants [*5] and by the State of North Carolina, reply briefs by the Commission Staff and Miss Doby and a final reply brief by Aluminum.

The Yadkin River rises on the eastern slope of the Blue Ridge Mountains of western North Carolina and flows northeasterly, easterly, and southeasterly about 202 miles to the mouth of Uwharrie River near Badin, North Carolina. At that point the Yadkin and Uwharrie rivers unite to form the Pee Dee River (sometimes called the Great Pee Dee River). It continues approximately 233 miles to enter the Atlantic Ocean through Winyah Bay near Georgetown, South Carolina. In some documents the short portion of the river between the mouth of the Uwharrie and the South Carolina state line is considered as still being the Yadkin River. n1 For convenience, the whole river is sometimes referred to as the Yadkin-Pee Dee River.

n1 Some elements of confusion, due to the varying designations of the point where the Yadkin ends and the Pee Dee begins, appear in the evidence because of the fact that both the Blewett Falls and Tillery dams are in the disputed portion of the stream, the junction of the Uwharrie with the Yadkin being within the boundaries of the Tillery Reservoir of Power & Light and about one mile downstream from the foot of Aluminum's Falls dam. [*6]

The first hydroelectric development constructed in the portion of the Yadkin-Pee Dee here under consideration was the Blewett Falls development, placed in operation by a predecessor of Power & Light on June 1, 1912. The Blewett Falls development is located at mile 191 on the Yadkin-Pee Dee and some 15.3 miles above the North Carolina-South Carolina state line and consists of 1,700 feet of earth embankment, 1,468 feet of concrete spillway structure with a height of 50 feet above river bed and 300 feet of powerhouse intake section, with a normal operating elevation of 178.1 feet above mean sea level and an effective storage of 32,000 acre-feet with a drawdown of 17 feet. The present installation has six horizontal-shaft turbines, three of which are rated at 5,350 horsepower each and three at 6,400 horsepower each, or a total of 35,250 horsepower, attached to three 3200 kilowatt and three 5000 kilowatt generators or a total of 24,600 kilowatts for the development, with transformer banks, switching structures, a fishway, and appurtenant hydraulic, electrical and mechanical facilities.

Tillery was placed in operation by a predecessor of Power & Light during the spring of 1928. The dam [*7] is located at approximately mile 219 on the Pee Dee, consists of 1,200 feet of earth dam and 1553 feet of concrete structures forming the spillway, powerhouse intake and left abutment sections with a

maximum height of 89 feet above river bed. The reservoir extends about 15 miles to the bottom of the Falls development, having a normal operating elevation of 278.2 feet above mean sea level and an effective storage of 88,000 acre-feet, with a draw-down of 22 feet. The powerhouse has an installation of three turbines, two of which are rated at 31,100 horsepower each and one rated at 25,600 horsepower, or a total of 87,800 horsepower. Each turbine is directly connected to a generator, two of which are rated at 22,000 kilowatts each and one at 18,000 kilowatts, or a total of 62,000 kilowatts. Tillery also has transformer banks, switching structures and appurtenant hydraulic, electrical, and mechanical facilities.

Power & Light proposes in its application in the present proceedings in Project No. 2206 to add, at Tillery, an additional turbine of 31,100 horsepower, direct-connected to a 22,000 kilowatt generator. At the time of the initial construction of Tillery provision [*8] was made for the additional unit by installation of a Moody-type draft tube, designed for a discharge of 4,540 cubic feet per second, which limits the extent of the proposed installation for all practical purposes.

The Tillery and Blewett Falls developments do not utilize all that part of the Yadkin-Pee Dee within their compass, there being a fall of about 30 feet undeveloped between the two projects. At the present time the development of this 30 feet is not being sought and is not considered by the Staff witness Price as being economically feasible. It is, however, possible that the development of this section of the river may be desirable if and when certain proposed headwater reservoirs, suggested in an Army Engineers' study of the Yadkin-Pee Dee basin, are constructed either by the United States or by someone else.

About 1915, Aluminum or an affiliate acquired the facilities of a Frenchowned company which had begun construction of an aluminum smelting plant at Badin, North Carolina, and proceeded to complete construction of a plant. Aluminum (which was known as Tallassee Power Company from its incorporation in 1905 until October 1931) had, at about the same time, started the [*9] construction of its existing Narrows development, which was placed in operation in 1917, at approximately mile 236.5 from the mouth of the Yadkin-Pee Dee River. The Narrows development consists of a concrete gravity-type dam about 1,140 feet long with an intake section, a non-overflow section, a gate-controlled spillway about 640 feet long and a by-pass spillway separate from the main dam, a reservoir extending upstream about 7 1/2 miles to the site of the Tuckertown development, with a normal full-pool elevation of 509.7 feet above mean sea level, a useful storage of 128,937 acre-feet at a draw-down of 31.1 feet, four steel penstocks, a powerhouse about 340 feet downstream from the dam, with an installation of four turbines each rated at 27,000 horsepower or a total of 108,000 horsepower, operating at an average net head of 174.5 feet, direct-connected to four generators with a total installation of 81,200 kilowatts. Units 1 and 2 are each rated at 17,100 kilowatts. Unit 3 is rated at 25,000 kilowatts and Unit 4 is rated at 22,000 kilowatts. The development also includes a step-up substation, transmission circuits connecting with the Badin substation, and appurtenant hydraulic, [*10] electrical and mechanical facilities. Units 1, 2 and 3 were installed in 1917 and Unit 4 was installed in 1924 and rebuilt in 1946. Units 1 and 2 generate 36 cycle energy and Units 3 and 4 generate 60 cycle energy.

The existing Falls development was completed between 1919 and 1922 by Aluminum. It is located at approximately mile 234 on the Yadkin River (about three miles from Badin), and consists of a concrete dam about 750 feet long with a non-overflow section, a two-tainter-gate section and a gate-controlled spillway about 455 feet long, a reservoir extending about two miles to the Narrows development, with a normal full-pool elevation of 332.6 feet above mean sea level and a useful storage of about 1,824 acre-feet at a draw-down of 10 feet. It has a powerhouse, integral with the dam, with an installation of three turbines each rated at 9,660 horsepower, a total of 28,980 horsepower, operating at an average net head of 53.4 feet, direct-connected to generators having a total capacity of 20,300 kilowatts. Unit 1 is rated at 7,000 kilowatts and

produces 60 cycle energy. Units 2 and 3 are each rated at 6,650 kilowatts and produce 36 cycle energy. The development includes a step-up [*11] substation and appurtenant hydraulic, electrical, and mechanical facilities.

The existing High Rock development is located at approximately mile 253 on the Yadkin River and consists of a concrete dam about 936 feet long with two non-overflow sections and a gated spillway section, a reservoir about 19 miles long with a normal full pool elevation of 623.6 feet above mean sea level, a useful storage of 234,866 acre-feet at a maximum draw-down of 30 feet, a powerhouse, integral with the dam, with an installation of three turbines each rated at 14,700 horsepower or a total of 44,100 horsepower operating at an average net head of 54.2 feet, direct-connected to three generators, each rated at 11,000 kilowatts or a total of 33,000 kilowatts, a step-up substation, an operators' village, and appurtenant hydraulic, electrical and mechanical facilities. High Rock was constructed by Aluminum in 1926-27 and all three units were installed in 1927. As now operating and proposed to be operated, High Rock will be the primary reservoir, the other reservoirs of Aluminum being utilized for hourly and daily storage.

The proposed Tuckertown development is to be located approximately at river [*12] mile 244.3 on the Yadkin River, and will consist of a dam about 1,255 feet long, with a concrete non-overflow section, an earth and rock-fill non-overflow abutment section, and a gate-controlled spillway about 481 feet long, a reservoir to extend upstream about nine miles to the High Rock development with a normal pool elevation of 564.6 above mean sea level and a useful storage of 6,897 acre-feet at a maximum draw-down of three feet, a powerhouse, integral with the dam with a proposed installation of three turbines each rated at 18,300 horsepower or a total of 54,900 horsepower at 55-foot net head, direct-connected to three generators each rated at 13,333 kilowatts or a total of 40,000 kilowatts, a step-up substation, 2 short tap lines to the High Rock-Badin transmission line, a small operators' village, and appurtenant hydraulic, electrical and mechanical facilities.

Construction of Tuckertown will complete the utilization by Aluminum of the entire available head of the Yadkin between the upstream end of the High Rock reservoir at mile 272 and the Falls dam at mile 234 on the river. The applicant (Aluminum) has studied the possibility of installing additional generating units at [*13] the existing Falls and Narrows developments. Under present river conditions, the benefits of such additional units are not sufficient to make their construction economically feasible or hydraulically desirable. Some additional capacity at the existing plants, as well as at Tuckertown, may become desirable and economically feasible, if and when the upstream reservoirs, which are the subject of the studies by the Army Engineers Corps referred to above in connection with Project No. 2206 are constructed by the United States or by a project licensee.

On June 6, 1937, Aluminum filed a declaration of intention to construct a hydroelectric development at Tuckertown which they then proposed to operate on a somewhat different basis than proposed for the present development. The 1937 proposal (DI-135), was to utilize Tuckertown as a second storage reservoir comparable in many respects to High Rock and to be operated at a draw-down which would fluctuate a water surface some 15 feet from elevation 569.1 above sea level to elevation 554.1 above sea level. The proposed storage at Tuckertown amounted to 23,000 acre-feet within the draw-down limits.

Hearing on the declaration in DI-135 was held [*14] on July 23, 1937 and September 13, 1937 before a hearing examiner of this Commission. Subsequently the Commission found the Tuckertown reservoir and powerhouse as then proposed would affect the navigable capacity of the Pee Dee River which the Commission found to be navigable from its mouth to at least as far as Cheraw, South Carolina at approximately mile 167 or about 24 miles below the Blewett Falls dam, the farthest downstream of the five constructed developments in that part of the river.

Jurisdiction

The Federal Power Act requires a license for any hydroelectric development which has been or is proposed to be constructed in navigable waters of the United States or which is capable of affecting the navigable capacity of any navigable waters of the United States or when lands of the United States or of a ward or wards thereof (such as Indian tribes) are occupied by any part of the development.

The Pee Dee or Yadkin-Pee Dee River was found to be a navigable water of the United States from its mouth to Cheraw, South Carolina (at least) in the matter of Carolina Aluminum Company (Docket No. DI-135), determined in November 16, 1937 and reported in Federal Power Commission [*15] Reports, Volume 1, at page 495. This finding was based upon the record, which included a showing of the considerable sums of money expended by the state of North Carolina and the Federal Government between the years 1784 and 1929. While it was alleged by Aluminum and by the state of North Carolina that the Pee Dee River was not navigable above Jeffreys Creek, some 78 miles downstream from Cheraw and at approximately mile 89 from the mouth of the river, the Commission then found that, while there had been a recommendation in 1931 by the Chief of Army Engineers that the existing navigation between Cheraw and Jeffreys Creek be abandoned, no action was taken upon the recommendation and at the time of the hearing a 3.5 foot channel was authorized by Congress up to Cheraw, South Carolina.

In the present proceedings, we have been asked to take official notice of certain reports of the chief of Engineers, United States Army, which show the continuing status of the Pee Dee as a navigable water of the United States with a nine-foot channel to Smith's Mills and at least a theoretical 3.5 foot channel to Cheraw at all stages of water. This showing was uncontradicted by any testimony introduced [*16] in the present record. Steamboats formerly operated on the river as far upstream as Cheraw. The present absence of steamboat navigation from the stretch of the river downstream from Cheraw is apparently due to inability to compete economically with available railroad and highway transportation facilities. A report dated May 23, 1944, which is part of one of the above-mentioned reports of the Chief of Engineers, United States Army, states:

Local interests between Georgetown, S.C., and Lilesville, N.C., generally desire further navigation improvement of the Pee Dee River to Cheraw, S.C., to provide a depth of from 8 to 9 feet, while some desire to have the improvement extended to Lilesville, 20 miles above Cheraw. n2

n2 House Document No. 652, 78th Congress, 2nd session at page 7.

Testimony and exhibits were presented by the Staff witness Marlatt which show that at times the operation of the existing developments, for which license is here sought by Aluminum and Power & Light, have affected the volume of water reaching Cheraw. In fact, a study of the gage records placed in evidence as exhibits Nos. 38 and 39 in these consolidated proceedings indicated the combined operation [*17] of the two Applicants here have produced extensive variations on a daily basis at Cheraw and week-end variations, at least, near Peedee, South Carolina, at mile 102.8 on the river or approximately 64.2 miles downstream from Cheraw.

The uncontradicted evidence of a witness presented by the Staff shows that each of the developments here under consideration (if operating separately or without any other development in the river) could affect the navigable capacity of the river for a considerable distance below Cheraw. The High Rock reservoir is capable of withholding the estimated average inflow of the reservoir for approximately 25.3 days, the proposed Tuckertown reservoir is capable of withholding the average inflow for .72 days, the Narrows reservoir can withhold such inflow for 13.2 days, and the Falls reservoir for .19 days. Tillery is capable of withholding the average flow of the river for about 8.2 days and Blewett Falls for about 2.16 days. In low water periods, the possible length of time during which the entire flow of the river *could* be withheld is considerably greater. For instance, in case of Falls (where the pondage is smallest) it

would take 1.5 days to [*18] fill the pool when the inflow is 600 cubic feet per second.

In determining the jurisdiction of this Commission based upon the downstream effect of any hydroelectric development on navigable capacity, such jurisdiction does not depend upon the manner in which a hydroelectric development has been operated in the past or is proposed to be operated in the future but upon the effect which such hydroelectric development is capable of having upon navigable capacity at points downstream. Moreover, each hydroelectric development may, for the purpose of determining the question of jurisdiction arising from downstream effect, be considered and treated as if no other hydroelectric development were located within the stream either above or below the development, which is the subject of the jurisdictional inquiry. Upon these bases it is easily apparent (and without contradiction in this record), that each of the existing developments, as now constructed, as well as the Tillery development as proposed to be modified and the Tuckertown development as proposed to be constructed, is subject of the jurisdiction of this Commission and requires a license for continued maintenance and operation in the [*19] river or for the further additional construction and operation proposed.

Aluminum in its brief argues that the present Tuckertown proposal can be distinguished from the standpoint of jurisdiction from that proposed to the Commission in 1937 and passed upon in the Commission's opinion in the declaration of intention case (Docket No. DI-135). While it is true that, under the new proposal, Tuckertown is not normally intended to be operated with a drawdown of more than 3 feet as opposed to a much greater drawdown proposed in 1937, it will still be possible to operate the said Tuckertown development in a manner which could and would affect the downstream navigable capacity of the Pee Dee River at Cheraw and in all probability as far downstream as the Pee Dee gage at mile 102.8 near Mars Bluff, S.C. Federal jurisdiction in the interest of navigation cannot await the overt act of interruption of flow and reduction of capacity, but must attach to each and every hydroelectric development which can and may at some time hereafter interrupt the flow of the navigable stream and reduce its navigable capacity, at any point where such navigable capacity normally exists during all or an appreciable [*20] part of each navigation year. Appropriate findings as to jurisdiction appear hereinafter in this decision.

Justification of the Projects.

The only opposition to licensing voiced by any party to these proceedings was that of Miss Eliza Doby. Miss Doby and a sister, who did not seek the right of intervention, are owners of property, a part of which will lie within the boundaries of the Tuckertown development if the license is issued for Project No. 2197 as requested and when the said Tuckertown portion of the project is constructed. The Doby opposition is apparently partly sentimental, but does raise some questions as to the effect of the proposed new construction (Tuckertown) upon the means of access to properties near the reservoir area. The evidence indicates however that movement by highway across the Yadkin will not be seriously hampered by the Tuckertown reservoir. While there has apparently been abandonment of some highways and at least one bridge over the Yadkin in the period since hydraulic development by Aluminum began about 1916, such abandonment appears to have been by local authorities and there is no showing that it was directly due to the construction [*21] of Aluminum's three present plants or the acquisition by that applicant of lands for the Tuckertown development.

The highways which were abandoned or permitted to fall into disrepair appear to have furnished transportation which has in some cases been superseded by utilization of more adequate and modern highways. In other cases, the abandoned highways had ceased to be useful because of changing traffic arrangements. In the case of the railway line serving some of the area around the reservoirs, there is evidence that the facilities for such service will actually be improved as a result of construction of a new siding and shipping facilities which can be utilized by some of the neighbors of the proposed Tuckertown development. The State of North Carolina fully supports Aluminum's application.

The proposed Tuckertown development has been shown to constitute an adequate utilization of the water resources of the reach of the Yadkin which it will occupy. The proposed construction is economically feasible and the Applicant has the requisite financial ability to construct. The public interest will be well served by the construction and operation of Tuckertown and by the continued maintenance [*22] and operation of the three other developments for which a license is sought as Project No. 2197. Findings to this effect, supported by testimony of witnesses for Aluminum and for the Staff of this Commission are hereinafter set out, in which it is found that, subject to certain conditions, a license should be issued for the said Project.

Since the Eliza Doby intervention related only to Project No. 2197, there was no stated opposition to the issuance of a license to Power & Light for its proposed Project No. 2206. The record shows that the proposed additional construction at Tillery will be economically feasible and will produce energy more cheaply than it can be made available from alternate sources. It is also shown that Power & Light is financially able to construct the said additional facilities.

It is also shown by the testimony of Power & Light's witnesses and by those of this Commission's Staff that the public interest will be served by the construction and operation of the additional unit at Tillery and by the continued maintenance and operation of the existing facilities of Power & Light at both the Tillery and Blewett Falls developments. Formal findings, which point [*23] out the factual basis for issuance of a license for Project No. 2206 and the conditions which should be attached to and made a part of the license are hereinafter set forth.

Length of the License Period

The smelting facilities at the Badin plant of Aluminum are quite old and should be replaced if economical operation is to be maintained in the future. Part of this is due to the fact that major improvements at Badin have not been made since 1937 due to uncertainty as to the status of the power supply. A study of the existing smelting facilities at Badin made by Aluminum in 1956 resulted in a decision that improvement could not be further delayed without serious impairment of the said smelting facilities.

The group studying replacement problems in 1956 came to the conclusion that if the investment necessary to modernize the Badin smelting plant were to be made, Aluminum must be assured of an adequate power supply for a long enough period of years to justify the investment. The witness Harper, who is general manager of the smelting division of Aluminum Company of America, commonly known as ALCOA, n3 testified that modernization of the Badin properties of Aluminum would [*24] result in an anticipated overall expenditure of \$37 million, of which approximately \$15 million would be expended for construction of Tuckertown and the balance of about \$22 million for modernization of the smelter at Badin. By these expenditures, the capacity of the Badin plant would be increased about 46 million pounds or about 68 percent to a productive capacity of 114 million pounds. Further expansion at Badin is not feasible because no additional large blocks of power are available at rates permitting economic use in smelting aluminum.

n3 Carolina Aluminum Company is a wholly-owned subsidiary of Aluminum Company of America and as such its smelting operations are a part of Mr. Harper's responsibility.

Production capacity is based upon the median water year. Because of the variation of power supply with the weather conditions, the utilization of smelting capacity at Badin will be only about 86 percent. Because of this limited utilization of capacity and other factors affecting costs, the investment at Badin would be about 80 cents per additional pound of capacity as against 50 cents per pound of capacity, if the same amount of added production were to be obtained by construction [*25] of additional facilities for smelting the same amount of aluminum at one of the new plants being powered by fuel, where utilization of the smelting facilities would be 100 percent.

In determining to locate new facilities at Badin, it is realized that certain existing facilities for both power and smelting can continue to be used over a period of years in the future. The present estimated combined book value of the power facilities now in use by Aluminum and of the existing smelting facilities at Badin is \$11 million. When this is combined with the \$37 million of new investment required and the total is applied to the total volumes of metal to be produced at Badin, the capital cost of production is reduced to 42 cents per pound as against the 50 cent capital cost of new facilities for equal production elsewhere.

It is estimated that operating costs would be somewhat higher at Badin than for equal production at a new and larger plant elsewhere, utilizing electric energy produced by a steam-producing fuel such as coal, lignite or gas. The two factors of capital cost and the operating cost are believed to be sufficiently offsetting that the total production cost for Badin, with a 50-year [*26] license period, would be reasonably close to the production cost of the same volume of aluminum pig or ingots elsewhere.

Badin is one of the smallest plants in the aluminum industry in America today. n4 The witness Harper stated that ALCOA believes that the trend is toward larger plants, but realizes the adverse effect upon the Badin area if the plant were to be discontinued and feels some responsibility toward the people of the community. The company had 977 employees upon the payroll at Badin at the beginning of 1957. As of October 1, 1957, 212 of these employees had 25 or more years of continuous service with the company. Turnover is considerably less than 100 employees per year.

n4 There is testimony in this record that the only smaller plant in the United States is a plant at Tacoma, Washington, with 77 million pounds capacity, which was purchased by the present owner at less than one-half of the original cost and where there is no investment in generating facilities.

The economic life of smelting facilities is estimated at approximately 25 years or one half of the desired license period. This would permit one replacement of such facilities during the period [*27] of the license, if a fifty-year license is granted to Aluminum. Since a period of close to three years may be required to complete construction of Tuckertown, the effective period of a 40-year license would be reduced to approximately 37 years and the replacement facilities at Badin could only be utilized for half of their normal life. This is doubly true because even the Tuckertown facilities would serve no practical purposes (after expiration of license for the three existing developments) in guaranteeing an energy supply to Aluminum, because they could only be operated to supply firm power to Badin, if and when Tuckertown is operated in conjunction with the energy-producing facilities at High Rock, Narrows and Falls.

The generating facilities of Aluminum at High Rock, Narrows, and Falls have been operated to maintain the maximum firm supply to the smelting pot-lines at Badin. The nature of the smelting operations is such as to emphasize the importance of steady operation of pot lines, because interruption of operation is time-consuming and expensive. The practice is to maintain certain pot-lines in year round operation and to have a fixed time schedule (insofar as water conditions [*28] permit) for the annual starting and ending of operations of each of the other pot lines. The fixed schedule is based on experience and the water supply records of past years. In order to obtain maximum utilization of the smelting facilities, Aluminum has worked out arrangements with Power & Light and with Duke Power Company (Duke) by means of which arrangements (covered by contract) Aluminum furnishes peaking power from its hydroelectric plants to the two utilities to enable them to meet daily peaks and receives in return electric energy supplied by Power & Light and Duke at periods which are off-peak from the utilities' standpoint. Such off-peak energy is usually supplied on the basis of two units to Aluminum in return for each unit of peaking energy supplied by Aluminum to the utilities.

The operations of the Badin plant of Aluminum are a useful contribution to the industrial life of the Yadkin Valley and their continuation is greatly in

the public interest. It is apparent that assurance of this continuation depends upon the ability of Aluminum to obtain a fifty-year license for the entire Yadkin Project (Project No. 2197). The facilities have been operated heretofore in a [*29] manner which appears to have produced a maximum beneficial effect. The public convenience and necessity require a continuation of this type of operation if possible. Moreover, the operations of the four developments must, of necessity, be coordinated. This means that if and when (if ever) these developments are taken over by the United States for operation by itself or a new licensee (whether Aluminum or another) under the provisions of Sections 14 and 15 of the Federal Power Act, they should be taken over as a unit, in order to ensure continued coordinated operations thereafter. For these reasons it is hereafter found that a license should be issued to Aluminum for a fifty-year term covering not only Tuckertown, but also the existing developments at High Rock, Narrows and Falls.

Power & Light is a public utility which supplies electric service at retail in 198 communities of 500 population or more in the states of North Carolina and South Carolina. Wholesale electric service is rendered by Power & Light to 24 municipalities and also to a number of rural electric cooperatives. This company also has approximately 19,500 miles of rural lines which make electric service available [*30] to rural customers at the same basic rates offered to urban customers, except for higher monthly minimum bills, accounted for on the basis of the lower customer density. The estimated total population of the area served by Power & Light is in excess of two million persons with approximately four hundred thousand customers presently connected and approximately twelve thousand new electric customers being connected each year.

Power & Light owns 709,000 kilowatts name plate capacity of steam-electric plants with a 156,000 kilowatt unit under construction. It also owns and operates 205,100 kilowatts name plate capacity of hydroelectric generating facilities. 10,500 kilowatts of the hydroelectric capacity is run-of-river generation and the remaining 194,600 kilowatts is peak load capacity. In addition to its own generation, Power & Light purchases 150,000 kilowatts of capacity and had 61,000 kilowatts available under exchange agreements. The transmission system of Power & Light is interconnected with those of Appalachian Electric Power Company, Tennessee Valley Authority (T.V.A.), Virginia Electric and Power Company, South Carolina Public Service Authority, South Carolina [*31] Electric & Gas Company and Duke, as well as with the transmission facilities of Aluminum.

The facilities under consideration in Project No. 2206 consist of the present Tillery and Blewett Falls developments, with 62,000 kilowatts and 24,600 kilowatts of installed capacity, as well as a proposed additional 22,000 kilowatt unit at Tillery. It is possible to obtain the 22,000 kilowatt additional capacity much more cheaply at Tillery than by development of the undeveloped portion of the river between Tillery and Blewett Falls or construction of steam-electric facilities elsewhere.

Power & Light points out that, if the license for the existing facilities was made effective as of January 1, 1947, the company would be obliged to make retroactive payments of \$95,000 to the United States although no substantial regulatory expense has been incurred by the United States. Although there is some evidence of an investigation authorized by this Commission by an order dated December 15, 1937, n5 the only evidence of any action of an investigative nature prior to the filing of the license application for Project No. 2206 is an exchange of letters between the Commission and Power & Light in 1943 [*32] and 1944, in which the filing of an application was suggested by the Commission's Secretary and the Applicant Power & Light (by its Vice President and General Counsel) rejected the proposal and stated its belief that the provisions of the Federal Power Act with respect to licensing were not applicable to its Tillery and Blewett Falls plants.

n5 Docket No. IT-5498.

In addition to the problem posed as to equities in regard to back payments which may, insofar as the record shows, be unjustified by any considerable

expenditures for regulation either prior to or during the period since January 1, 1947, consideration may well be given to the desirability of coordinated operation and control of the facilities of the two Applicants included within Projects Nos. 2197 and 2206, if or when the two projects are taken over by the United States under the provisions of Sections 14 and 15 of the Federal Power Act and either operated by the United States or by some licensee or licensees other than the respective Applicants for the two projects. It is obvious from the record that there has been rather close coordination of the operations of the two Applicants at their existing plants on the Yadkin-Pee [*33] Dee. For a considerable period, this was specifically provided for by contract. We shall hereafter set out certain requirements to ensure that Aluminum's plants shall not be so operated as to prevent Power & Light's compliance with certain conditions in its license.

It is impossible now to determine what the pattern of electric energy use in the area, which is or can be served by the plants on the Yadkin or Yadkin-Pee Dee which are here under consideration, will be in 1997 A.D., when a license for fifty years from January 1, 1947, will expire or in the year 2008 A.D., when a fifty-year license dating from the issuance of the license here sought will expire. Possible improvements in generation of steam-electric energy, of nuclear energy (either directly or through electric generation), of solar energy, of tidal energy or of other forms of energy, presently unknown or at least undeveloped, may result in a complete change of energy bases. In the same manner, industrial improvements and the addition of labor saving, comfort giving, and entertaining devices in the home, the office, the store, or the farm, may result in a complete change of the load pattern of the area. We [*34] do, however, know that all six of the developments here under consideration depend upon the waters of the same stream and are practically contiguous to each other upon that stream. For this reason alone, if no other considerations existed (as suggested by Power & Light), it is hereafter found to be in the public interest that the two project licenses should be so timed as to expire at the same time, in order that the future use of the project facilities after expiration may be considered together by both the United States and any prospective licensee (including the original licensees) in the light of the then prevailing pattern both of electric generation and of load distribution.

Special Conditions

Certain special conditions, over and beyond the conditions usually attached to licenses for new construction appear necessary in each of the present proceedings. The last "Article" in each license is simply a statement of the computed annual charges to be paid by the respective Licensees. Article 14 is modified in each case to limit its effect to the portions of the project facilities constructed after the license becomes effective. A new Article 19 in each license provides for the [*35] determination of the actual legitimate original cost of those parts of each project completed prior to the effective date of the license. Provisions are also made for the time of commencing and completing of construction in each case and for filing by Aluminum of Exhibits F and K relating to project lands. These special conditions are not controversial and are self-explanatory as they appear in the licenses tendered by the orders hereinafter stated and incorporated herewith as parts of this decision.

In the case of the new Tuckertown reservoir, provision is made for clearing of the reservoir site. This is a provision similar to those imposed by the Commission in other licenses for new projects where the nature of the vegetation in the reservoir area requires such conditions and is also uncontroversial.

Provision also has been made for such reasonable modifications of project structures and operations in the interest of fish and wildlife resources as may hereafter be prescribed by the Commission upon recommendations of the North Carolina Wildlife Commission and the Secretary of the Interior, after notice and opportunity for hearing and upon a finding, or findings, based on substantial [*36] evidence of their necessity, desirability and compliance with the Federal Power Act. In order that the licensees may have a determination of such changes, if any are required, at an early date hereafter, it is provided that no modification may be required unless recommendations therefor are made within

nine months from the date of issuance of the licenses. This is consistent with Commission practice in licenses heretofore issued.

The State of North Carolina having stated, through its Assistant Attorney General, its general support of the projects and the absence of any objections by reason of highways or oxygen content of reservoir water, no conditions as to these matters are attached. It appears that several communities are now receiving adequate supplies of potable water from various reservoirs included in the two projects.

Provisions are also made for coordination of operation of the two projects to the maximum extent possible and for the coordination of both projects with the operations of Duke and other public utilities in the area. The right is reserved to require the submission of reports and the filing of agreements, contracts and other papers relating to such [*37] coordination and to order such further coordination of operations or changes therein as may be found, after opportunity for hearing, to be economically feasible and in the public interest. Because of the possibility that certain upstream reservoirs, heretofore proposed by the Chief of Engineers, may be constructed in the future and that such construction may increase the hydroelectric potentialities of the stretches of the Yadkin or Yadkin-Pee Dee occupied by Projects Nos. 2197 and 2206, the right is also reserved to direct the installation of additional generating units in each project, to the extent that such construction is found to be economically feasible, after notice and opportunity for hearing. In the case of the Yadkin-Pee Dee project of Power & Light, this reservation includes the right to require the development of the unused thirty feet of head between the Tillery and Blewett Falls developments, when such development becomes economically feasible and in the public interest by reason of upstream improvements.

A provision is made in the license of Project No. 2206 for circumstances under which it may become necessary to release increased volumes of water from Blewett Falls [*38] to maintain the quality of water required by the North Carolina Stream Sanitation Committee for waters such as the Yadkin-Pee Dee below the said Blewett Falls development. Such additional releases may be ordered in volumes up to the minimum daily flow before construction of Blewett Falls, and may only be prescribed after notice and opportunity for hearing. A provision is also inserted in the license for Project No. 2197 which requires that the said project of Aluminum shall not be operated in such a manner as to prevent Power & Light from complying with any such minimum flow requirements hereafter established for Blewett Falls.

In order to assure the maximum feasible recreational use of Tuckertown, while permitting the operations proposed by Aluminum and necessary to the proper use of the energy produced therefrom for smelting purposes, it is provided that the Tuckertown drawdown be limited to three feet, except under emergency conditions. Requests have been made informally (by letter or telegram) to the Commission by various individuals, companies and agencies that the water in the High Rock Reservoir of Aluminum be maintained at high levels at all times for recreational purposes. [*39] Such a limitation would largely defeat the purpose of Aluminum in constructing the reservoir and would greatly reduce the benefits to downstream plants resulting from the operation as it has been conducted in the past. A study by the witness Price, a Commission employee and presented by the Staff, shows that if the drawdown at High Rock were limited to a maximum of ten feet instead of the existing thirty-foot drawdown, the estimated power loss would be approximately \$150,000 per year. No evidence was presented by the proponents of the limitation as to its feasibility or as to the recreational benefits which might be obtained thereby. The proposal is therefore rejected. A provision is inserted which requires the maintenance of the highest level at High Rock from June 1 to September 1 of each year which is practicable and consistent with the reservoir's primary purpose of providing firm energy for the smelting operations at Badin.

A proposal by the Department of the Interior which would lessen somewhat the rights of Aluminum in controlling access to project lands is also rejected. It

appears that the standard provisions contained in Article 7 of each license are adequate [*40] to protect the recreational rights and privileges of the public.

A provision suggested by the Staff in its brief and supported by a witness in the record would require that within one year after licensing, Aluminum shall apply for an amendment to include within the license the transmission line (or lines) which may be constructed from the junction of the Tuckertown tap lines to Badin. No objection to this provision is made in the final brief of Aluminum and the Staff's proposal is adopted with a slight change which leaves to the future judgment of the Applicant the number of lines or circuits to be constructed between the points in question.

The Staff also proposed a condition in the license for Project No. 2206, by which the Commission expressly reserves the right to determine at a later date what transmission lines and appurtenances, if any, shall be included within the license. In its main brief, the applicant Power & Light objected to the inclusion of transmission lines within the project and based its objection upon the effect of such inclusion on the public utility operations of Power & Light. There is some evidence in the record that, while the extent to which transmission [*41] facilities should be included within the license cannot yet be determined, some such facilities and at least those transmission facilities connecting the parts of Project No. 2206 to the Badin smelting facilities of Aluminum should, if and when Sections 14 and 15 of the Federal Power Act become applicable, be a part of Project No. 2206. This is especially true, if the two projects (Nos. 2197 and 2206) are to be operated by the United States or by a single licensee after 2008 A.D. It does not appear, however, that the record is sufficiently complete to justify any Commission action to include such transmission facilities within the license without further hearing. The recommendation of the Staff is therefore modified and it is provided that a determination as to inclusion of transmission lines may be made by the Commission, but only after an opportunity has been afforded for further Hearing.

FURTHER FINDINGS AND CONCLUSIONS

Upon the facts in evidence, together with the pleadings and the briefs and arguments of counsel, it is further found and concluded that:

Project No. 2197

(1) Application was filed February 6, 1956, by Carolina Aluminum Company (Applicant), of Badin, North [*42] Carolina, for a license under Section 4 (e) of the Federal Power Act (hereinafter referred to as the Act) for Project No. 2197, consisting of the constructed High Rock, Narrows, and Falls developments, and the proposed Tuckertown development (all designated as the Yadkin Project), situated on the lower Yadkin stretch of the Yadkin-Pee Dee River, in Stanly, Montgomery, Davidson, and Rowan Counties, North Carolina, and in the vicinity of Badin, High Rock, and Salisbury, North Carolina.

(2) The Applicant is a corporation organized and existing under the laws of the State of North Carolina and has submitted satisfactory evidence of compliance with the requirements of all applicable State laws insofar as necessary to effect the purposes of a license for the project.

(3) The Yadkin-Pee Dee River is in North and South Carolina. the Yadkin River rises on the eastern slope of the Blue Ridge Mountains of western North Carolina, flows northeasterly, easterly, and southeasterly about 202 miles to the mouth of the Uwharrie River near Badin, North Carolina, where its name changes to Pee Dee or Great Pee Dee River; thence it continues southeasterly about 233 miles to enter the Atlantic [*43] Ocean through Winyah Bay near Georgetown, South Carolina.

(4) In its natural condition, at ordinary stages of water, the Yadkin-Pee Dee River had a 9-foot channel from its mouth to Smith's Mills, a 3 1/2-foot channel at low water to Little Bluff, and a 3 1/2-foot channel at high water to Cheraw, South Carolina.

(5) In 1880 Congress authorized improvement of the Yadkin-Pee Dee River to provide for a thoroughly cleared, 9-foot channel to Smith's Mills and a 3 1/2-foot minimum navigation channel to Cheraw at all stages of water.

(6) The Yadkin-Pee Dee River is a navigable water of the United States at least up to Cheraw, South Carolina.

(7) The High Rock, Narrows, and Falls developments have been and may be operated by Applicant so as to affect the navigable capacity of the Yadkin-Pee Dee River downstream from Cheraw, South Carolina.

(8) The proposed Tuckertown development will be capable of operating separately in such a manner as to affect the navigable capacity of the Yadkin-Pee Dee River downstream from Cheraw.

(9) The High Rock, Narrows, and Falls developments have been and are operated as a unit, and although the proposed Tuckertown development is capable of being operated separately [*44] from the existing High Rock, Narrows, and Falls developments, when constructed the Tuckertown development will be operated as a unit with the High Rock, narrows and Falls developments for power generation.

(10) The High Rock reservoir of the Applicant is operated primarily for the purpose of providing a large reservoir which may be drawn down as necessary to maintain continuity of operation of the Badin smelter works of the Applicant at the highest possible minimum level.

(11) The Secretary of the Army and the Chief of Engineers have approved the plans of the existing and proposed project structures insofar as the interests of navigation are concerned.

(12) All interested State and Federal agencies have reported on the application without objection to the issuance of a license, subject to conditions substantially as hereinafter provided.

(13) No conflicting application is before the Commission. Public notice of the application has been given as required by the Federal Power Act.

(14) The Applicant has submitted satisfactory evidence of its financial ability to construct the Tuckertown development and to operate the project.

(15) The project does not affect any Government dam, nor [*45] will the issuance of a license for the project as hereinafter provided affect the development of any water resources for public purposes which should be undertaken by the United States.

(16) Subject to the terms and conditions hereinafter specified, the project is best adapted to a comprehensive plan for improving and developing a waterway or waterways for the use or benefit of interstate or foreign commerce, for the improvement and utilization of water-power development, and for other beneficial public uses, including recreational purposes.

(17) The existing High Rock, Narrows, and Falls developments, and the proposed Tuckertown development, and the transmission facilities to be constructed from the junction of the Tuckertown lines to Badin, together with the transmission facilities included and described in the application for license are parts of the project herein authorized within the meaning of Section 3 (11) of the Federal Power Act.

(18) Exhibit J (Drawing F.P.C. No. 2197-1), Exhibit L (Drawings F.P.C. Nos. 2197-2 to 7 inclusive) and Exhibit M (a nine-page typewritten "General Description of Equipment", filed February 6, 1956) conform substantially with the Commission's [*46] rules and regulations and should be approved as part of the license for the project, while Exhibits F and K should be filed as hereinafter provided.

(19) The operation and maintenance by Applicant of any and all of the project works of Project No. 2197 on the Yadkin-Pee Dee River will affect the interests of interstate or foreign commerce.

(20) The Applicant Carolina Aluminum Company proposes to reconstruct its smelting plant at Badin to increase both its maximum capacity and its firm or continuous smelting capacity in order to increase the usefulness and efficiency of the said smelting plant, and such proposed reconstruction is expected to afford continued employment to more than 900 persons in the Badin area.

(21) The normal usefulness of aluminum smelting facilities is approximately twenty-five years and such facilities at Badin can be reconstructed, with a reasonable expectation of full utilization thereof, twice during the period covered by a fifty-year license for the hydroelectric facilities in Project No. 2197.

(22) The economic feasibility of the proposed reconstructions by the Applicant of its smelting facilities at Badin depends upon the obtaining by the Applicant of a [*47] license for fifty years, from the present time, for Project No. 2197.

(23) The public interest requires that, when a license for Project No. 2197 is issued, the said license be effective for a period of fifty years from the date of issuance.

(24) The public interest requires that the Commission reserve to itself the right to order the Applicant to install additional generating units to the extent that such installation is economically feasible, if and when an upstream reservoir or reservoirs are constructed by the United States or by a licensee, and after opportunity for hearing.

(25) The installed horsepower capacity of the project hereinafter authorized, for the purpose of computing the capacity component of the administrative annual charge, is 232,700 horsepower (High Rock 44,000; Narrows 108,300; Falls 27,100; and Tuckertown 53,300).

(26) The amount of annual charge to be paid under the license for the purpose of reimbursing the United States for the costs of administration of Part I of the Federal Power Act is reasonable as hereinafter fixed and specified.

(27) In view of the issuance of the license for Project No. 2197 as hereinafter provided, it is appropriate to terminate the [*48] investigatory proceeding in Docket No. IT-5499.

Project No. 2206

(1) Application was filed May 29, 1956, and later supplemented, by Carolina Power & Light Company, of Raleigh, North Carolina (Applicant), for a license under Section 4 (e) of the Federal Power Act (hereinafter referred to as the Act) for its existing Tillery and Blewett Falls hydroelectric developments, and for a fourth generating unit in the Tillery development (all designated as Project No. 2206 and also as the Yadkin-Pee Dee River Project of the Applicant) located on the Yadkin-Pee Dee River in Anson, Richmond, Montgomery and Stanly Counties, North Carolina.

(2) The Applicant is a corporation organized and existing under the laws of the State of North Carolina and has submitted satisfactory evidence of compliance with the requirements of all applicable State laws insofar as necessary to effect the purposes of a license for the project.

(3) The Yadkin-Pee Dee River is in North and South Carolina. The Yadkin River rises on the eastern slope of the Blue Ridge Mountains of western North Carolina, flows northeasterly, easterly, and southeasterly about 202 miles to the mouth of the Uwharrie River near Badin, [*49] North Carolina, where its name changes to Pee Dee or Great Pee Dee River; thence it continues southeasterly about 233 miles to enter the Atlantic Ocean through Winyah Bay near Georgetown, South Carolina.

(4) In its natural condition, at ordinary stages of water, the Yadkin-Pee Dee River had a 9-foot channel from its mouth to Smith's Mills, a 3 1/2-foot channel at low water to Little Bluff, and a 3 1/2-foot channel at high water to Cheraw, South Carolina.

(5) In 1880 Congress authorized improvement of the Yadkin-Pee Dee River to provide for a thoroughly cleared, 9-foot channel to Smith's Mills and a 3 1/2-foot minimum navigation channel to Cheraw at all stages of water.

(6) The Yadkin-Pee Dee River is a navigable water of the United States at least up to Cheraw, South Carolina.

(7) The Tillery and Blewett Falls developments have been and may be operated by the Applicant so as to affect the navigable capacity of the Yadkin-Pee Dee River downstream from Cheraw, South Carolina.

(8) The Tillery and Blewett Falls developments have been and are operated as a unit, and the additional generator, when installed at Tillery, will be operated as a unit with the Tillery and Blewett Falls developments [*50] for power generation.

(9) The Secretary of the Army and the Chief of Engineers have approved the plans of the project structures insofar as the interests of navigation are concerned.

(10) All interested State and Federal agencies have reported on the application without objection to the issuance of a license, subject to conditions substantially as hereinafter provided.

(11) No conflicting application is before the Commission. Public notice of the application has been given as required by the Federal Power Act.

(12) The Applicant has submitted satisfactory evidence of its financial ability to construct the fourth unit at Tillery and to operate the project.

(13) The project does not affect any Government dam, nor will the issuance of a license for the project as hereinafter provided affect the development of any water resources for public purposes which should be undertaken by the United States.

(14) Subject to the terms and conditions hereinafter specified, the project is best adapted to a comprehensive plan for improving and developing a waterway or waterways for the use or benefit of interstate or foreign commerce, for the improvement and utilization of water-power development, [*51] and for other beneficial public uses, including recreational purposes.

(15) The existing Tillery and Blewett Falls developments, together with the proposed additional generating unit at Tillery, described above are parts of the project herein authorized within the meaning of Section 3 (11) of the Federal Power Act.

(16) Exhibits J (Drawing F.P.C. 2206-1), K (Drawings F.P.C. 2206-2 through 18), L (Drawings F.P.C. 2206-20 through 25 and 27 through 29) and M (four-pages of description and specifications, filed May 29, 1956) conform substantially with the Commission's rules and regulations and should be approved as part of the license for the project.

(17) The operation and maintenance by Applicant of any and all of the project works of Project No. 2206 on the Yadkin-Pee Dee River will affect the interests of interstate or foreign commerce.

(18) The Yadkin-Pee Dee River Project No. 2206 of the Applicant is immediately downstream from the lowermost development of Carolina Aluminum Company, for which a license is sought as Project No. 2197.

(19) It is desirable and in the public interest that the operation of Projects Nos. 2197 and 2206 be coordinated to the greatest extent compatible [*52] with the several and distinct purposes for which the two projects are designed and operated; and it is further desirable that the two licenses expire at or about the same time, in order that proper consideration may then be given to the possibility of continued or increased coordination of the operation of the two projects thereafter.

(20) The public interest requires that, when a license for Project No. 2206 is issued, the said license be effective for a period of fifty years from the date of issuance.

(21) The public interest requires that the Commission reserve to itself the right to order the Applicant to develop the unused head of the portion of the Yadkin-Pee Dee River between its Tillery and Blewett Falls developments and to install additional generating units to the extent that such development and installation are economically feasible, if and when an upstream reservoir or reservoirs are constructed by the United States or by a licensee, and after opportunity for hearing.

(22) The installed horsepower capacity of the project hereinafter authorized, for the purpose of computing the capacity component of the administrative annual charge, is 145,000 horsepower.

(23) The amount [*53] of annual charge to be paid under the license for the purpose of reimbursing the United States for the costs of administration of Part I of the Federal Power Act is reasonable as hereinafter fixed and specified.

(24) In view of the issuance of the license for Project No. 2206 as hereinafter provided, it is appropriate to terminate the proceeding in Docket No. IT-5498.

ORDER

In the Matter of Carolina Aluminum Company, Project No. 2197

Wherefore, it is ordered, subject to review by the Commission as provided by its Rules of Practice and Procedure, that:

(A) This license is issued to Carolina Aluminum Company, (hereinafter referred to as the Licensee) under Section 4 (e) of the Federal Power Act for a period of 50 years, effective as of the date when this order becomes the act of the Commission, for the continued operation and maintenance of the constructed High Rock, Narrows and Falls developments, and for the construction, operation and maintenance of the proposed Tuckertown development (which developments for the purposes of this license shall be considered as units of one complete project designated in the records of the Commission as Project No. 2197) located on the Yadkin-Pee [*54] Dee River which is a navigable waterway of the United States, at least as far upstream as Cheraw, South Carolina, and affecting navigable waters of the United States and the interests of interstate or foreign commerce, subject to the terms and conditions of the Act which is incorporated herein by reference as a part of this license, and subject to such rules and regulations as the Commission has issued or prescribed under the provisions of the Act.

(B) This license shall also be subject to the following terms and conditions:

Article 1. The entire project, as described in the order of the Commission, shall be subject to all 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 amended, supplemental, or [*55] 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. Said 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, no substantial alteration or addition not in conformity with the approved plans

shall be made to any dam or other project works under the license without the prior approval of the Commission; and any emergency alteration or addition so made shall thereafter be subject to such modification and change as the Commission may direct. Minor changes in the project works or divergence from such approved exhibits may be made if such changes will not result in decrease in efficiency, in material increase in cost, or in impairment of the general scheme of development; but any of such minor changes made without the prior [*56] 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. The Licensee shall comply with such rules and regulations of general or special applicability as the Commission may from time to time prescribe for the protection of life, health, or property.

Article 4. The construction, operation, and maintenance of the project and any work incident 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 furnish to said representative such 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, and 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 [*57] one week, and of its resumption and completion. The Licensee shall allow him 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.

Article 5. 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 maps, plans, specifications, and statements 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 maps, plans, specifications, and statements approved by the Commission, together with a statement in writing setting forth the reasons which in the opinion of the Licensee necessitated or justified variations in or divergence from the approved maps, plans, specifications, and statements. Such revised maps, plans, specifications, and statements shall, if and when approved by the Commission, be made a part of the license [*58] under the provisions of Article 2 hereof.

Article 6. For the purpose of determining the stage and flow of the stream or streams from which water is to be diverted for the operation of the project works, the amount of water held in and withdrawn from storage, and the effective head on the turbines, the Licensee shall install and thereafter maintain such gages and stream-gaging stations as the Commission may deem necessary and best adapted to the requirements; and shall provide for the required readings of such gages and for the adequate rating of such stations. The Licensee shall also install and maintain standard meters adequate for the determination of the amount of electric energy generated by said 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 and may be altered from time to time if necessary to secure adequate determinations, but such alteration shall not be made except with the approval of the Commission or upon the specific direction of the Commission. The installation of gages, the ratings of said stream or streams, and the determination [*59] 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 said 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 record 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. 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 purpose of full public utilization of such lands and waters for navigation and recreational purposes, including fishing and hunting, and shall allow to a reasonable extent for such purposes the construction of access roads, wharves, landings, and other facilities on its lands the occupancy of which may in appropriate circumstances [*60] be subject to payment of rent to the Licensee in a reasonable amount: 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 and Provided further, that the Licensee's consent to the construction of access roads, wharves, landings, and other facilities shall not without its express agreement place upon the Licensee any obligation to construct or maintain such facilities.

Article 8. Insofar as any material is dredged or excavated in the prosecution of any work authorized under the license, or in the maintenance of the project, such material shall be removed and deposited so it will not interfere with navigation, and will be to the satisfaction of the District Engineer, Department of the Army, in charge of the locality.

Article 9. In the construction and 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 [*61] prior to its transmission lines and not owned by the Licensee, and shall also place and maintain suitable structures and device to reduce to a reasonable degree the liability of any structures or wires falling and obstructing traffic and endangering life on highways, streets, or railroads.

Article 10. 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 its rights-of-way and such right of passage through its dams or other structures, and permit such control of pools as may be required to complete and maintain such navigation facilities.

Article 11. The Licensee shall furnish free of cost to the United States power for the operation and maintenance of navigation facilities 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 12. 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 [*62] of the project works shall at all times be controlled by such reasonable rules and regulations in the interest of navigation, including the control of the level of the pool caused by such dam or diversion structures, as may be made from time to time by the Secretary of the Army. Such rules and regulations may include the construction, maintenance, and operation by the Licensee, at its own expense, of such lights and signals as may be directed by the Secretary of the Army.

Article 13. 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 [*63] 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 14. The actual legitimate original cost of the parts of the project to be completed after the effective date of license, and of any future addition to or betterment of the entire project, shall be determined by the Commission in accordance with the Federal Power Act and the rules and regulations of the Commission thereunder.

Article 15. After the first twenty (20) years of operation of the project under the license, six (6) percent per annum shall be the specified rate of return on the net investment in the project for determining surplus earnings of the project for the establishment and maintenance of amortization reserves, pursuant to Section 10 (d) of the Act; one-half of the project surplus earnings, if any, accumulated after the first twenty years of operation under the license, [*64] in excess of six (6) percent per annum on the net investment, shall be set aside in a project amortization reserve account as of the end of each fiscal year, provided that, if and to the extent that there is a deficiency of project earnings below six (6) percent per annum for any fiscal year or years after the first twenty years of operation under the license, the amount of such deficiency shall be deducted from the amount of any surplus earnings accumulated thereafter until absorbed, and one-half of the remaining surplus earnings, if any, thus cumulatively computed, shall be set aside in the project amortization reserve account; and the amounts thus established in the project amortization reserve account shall be maintained therein until further order of the Commission.

Article 16. No lease of the project or part thereof whereby the lessee is granted the exclusive occupancy, possession, or use of project works for purposes of generating, transmitting, or distributing power shall be made without the prior written approval of the Commission; and the Commission may, if in its judgment the situation warrants, require that all the conditions of the license, of the Act, and [*65] of the rules and regulations of the Commission shall be applicable to such lease and to such property so leased to the same extent as if the lessee were the Licensee: Provided, that the provisions of this article shall not apply to parts of the project or project works which may be used by another jointly with the Licensees under a contract or agreement whereby the Licensee retains the occupancy, possession, and control of the property so used and receives adequate consideration for such joint use, or to leases of land while not required for purposes of generating, transmitting, or distributing power, or to buildings or other property not built or used for said purposes, or to minor parts of the project or projects works, the leasing of which will not interfere with the usefulness or efficient operation of the project by the Licensee for such purposes.

Article 17. The Licensee, 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 [*66] such properties necessary or useful to the project and to the development, transmission, and distribution of power therefrom shall be voluntarily sold, transferred, abandoned, or otherwise disposed of without the approval of the Commission: Provided, that a mortgage or trust deed or judicial sales made thereunder, or tax sales, shall not be deemed voluntary transfers within the meaning of this article. 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 Act, or is transferred to a new licensee under the provisions of Section 15 of the Act, the Licensee, its successors and assigns will be responsible for and will make good any defect of title to or of right of user in any of such project property which is necessary or appropriate or valuable and serviceable in the maintenance and operation of the project, and will pay and discharge, or will assume responsibility for payment and discharge of, all liens or incumbrances 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 prevent [*67] 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, or 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 user in any of such project property than was necessary to acquire for its own purposes as Licensee.

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.

Article 19. The actual legitimate original cost, estimated where not known, and the accrued depreciation of the existing parts of the project completed prior to the effective date of the license shall be determined by the Commission as of such effective date, in accordance with the Federal Power Act and the rules and regulations of the Commission, and such cost less such accrued depreciation, so determined, shall be the net investment in the existing constructed parts of the project [*68] as of such effective date.

Article 20. The Licensee shall file within 3 years from date of issuance of license Exhibits F and K showing the lands within the project boundary and right of use of those lands for project purposes. Exhibits F and K shall be prepared in accordance with the Commission's rules and regulations under the Federal Power Act.

Article 21. The Licensee shall commence construction of the Tuckertown development within one year from the date of issuance of license and with due diligence prosecute and complete such construction within 4 years from date of issuance.

Article 22. The Licensee shall, prior to flooding, clear all lands in the bottom and margin of the Tuckertown reservoir up to high water level, and shall dispose of all temporary structures, unused timber, brush, refuse, or inflammable material resulting from the clearing of the lands or from the construction and maintenance of the project works. In addition, all tress along the margin of the reservoir which may die during the operation of the project shall be removed. The clearing of the lands and the disposal of the material shall be done with due diligence and to the satisfaction of the [*69] authorized representative of the Commission with the advice of other interested federal and state agencies.

Article 23. The Licensee shall cooperate with the North Carolina Wildlife Resources Commission and the U.S. Fish and Wildlife Service during the period of final planning, project construction, and operation of the proposed and constructed units of the project, and comply with such reasonable modifications of the project structures and such reasonable modifications of project operations in the interest of fish and wildlife resources, provided that such modifications shall be reasonably consistent with the primary purpose of the project, as may hereafter be prescribed by the Commission upon the recommendations of the North Carolina Wildlife Resources Commission and the Secretary of the Interior after notice and opportunity for hearing and upon a finding based on substantial evidence that such modifications are necessary and desirable and consistent with the provisions of the Federal Power Act: *Provided, however,* that no modifications of project structures shall be required unless recommendations are made by the North Carolina Wildlife Resources Commission or the Secretary [*70] of the Interior prior to 9 months from date of issuance of license.

Article 24. The Licensee shall, to the maximum extent feasible, coordinate the operation of the Yadkin project with the systems of Carolina Power & Light Company, Duke Power Company, and others with which it may be interconnected, taking into account existing and future situations as to: amount of regulated flow available at-site and upstream from High Rock development, generating capacity at hydroelectric and other power plants, and magnitudes and

characteristics of loads to be served not only by the Licensee but also by interconnected electric utilities; and, the Commission reserves the right, after opportunity for hearing, to order such coordination of operations or changes therein as it finds to be economically feasible and in the public interest, provided that such coordination of operations or changes therein shall not impair the Licensee's ability to supply the necessary power for operation of its Badin smelting facilities, and to require the submission of reports and the filing of agreements, contracts and other papers relating to the coordination of operations, whenever requested by the Commission or [*71] changes are made or accepted by the Licensee.

Article 25. The Licensee shall at such time as the Commission may direct and to the extent that it is economically feasible to do so, after notice and opportunity for hearing, install additional generating units in the project.

Article 26. The Licensee shall, except under emergency conditions or for maintenance, limit the drawdown of Tuckertown Reservoir to a maximum of three (3) feet below normal maximum pool elevation.

Article 27. The Licensee shall within one year from date of issuance of license make application to the Commission for amendment of license to include therein the transmission line or lines to be constructed from the junction of the Tuckertown tap lines to Badin.

Article 28. The Licensee shall, in order to secure maximum recreational benefits, make every reasonable effort to maintain the water surface of High Rock Reservoir at the highest level practicable from June 1 to September 1 of each year, as is consistent with the primary purpose of the reservoir to provide a large reservoir which may be drawn down as necessary to maintain continuity of operation of the Badin smelting works at the highest [*72] possible minimum level.

Article 29. The Licensee shall not operate Project No. 2197 in such a manner as to prevent the operation of Project No. 2206 of Carolina Power & Light Company in compliance with Article 21 of the license for that project respecting minimum flows immediately below the Blewett Falls development.

Article 30. The Licensee shall pay to the United States the following annual charge.

For the purpose of reimbursing the United States for the cost of administration of Part I of the Federal Power Act, (1) cent per horsepower on the authorized installed capacity (232,700 horsepower) plus two and one-half (2 1/2) cents per 1,000 kilowatt-hours of gross energy generated by the project during the calendar year for which the charge is made.

(C) The "J", "L", and "M" Exhibits referred to in the further findings and conclusions contained in the decision issued herewith and of which this order forms a part, conforms substantially with the Commission's rules and regulations and are approved as part of this license.

(D) The proceeding in Docket No. IT-5499 be and hereby is terminated.

ORDER

In the Matter of Carolina Power & Light Company, Project No. 2206

Wherefore, it [*73] is ordered, subject to review by the Commission, as provided by its Rules of Practice and Procedure, that:

(A) this license is issued to Carolina Power & Light Company (hereinafter referred to as the Licensee) under Section 4 (e) of the Federal Power Act for a period of 50 years, effective as of the date when this order becomes the act of the Commission, for the construction, operation and maintenance of the proposed new generating unit in the Tillery development and for the continued operation and maintenance of the presently constructed Tillery and Blewett Falls developments (which developments for the purposes of this license shall be considered as units of one complete project designated in the records of the Commission as Project No. 2206) located on the Yadkin-Pee Dee River which is a

navigable waterway of the United States, at least as far upstream as Cheraw, South Carolina, and affecting navigable waters of the United States and the interests of interstate or foreign commerce, subject to the terms and conditions of the Act which is incorporated herein by reference as a part of this license, and subject to such rules and regulations as the Commission has issued or prescribed [*74] under the provisions of the Act.

(B) This license shall be subject also to the following terms and conditions:

Article 1. The entire project, as described in the order of the Commission, shall be subject to all 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 amended, supplemental, 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. Said project works shall be constructed in substantial conformity with the approved exhibits referred to in Article 2 herein [*75] 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, no substantial alteration or addition not in conformity with the approved plans shall be made to any dam or other project works under the license without the prior approval of the Commission; and any emergency alteration or addition so made shall thereafter be subject to such modification and change as the Commission may direct. Minor changes in the project works or divergence from such approved exhibits may be made if such changes will not result in decrease in efficiency, in material increase in cost, 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. The Licensee shall comply with such rules and regulations of general or special applicability as the Commission may from time to time prescribe for the protection of life, health, or property.

Article 4. The construction, operation, and maintenance [*76] of the project and any work incident 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 furnish to said representative such 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, and 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 him 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.

Article 5. Upon the completion of the project, or at such other time as the Commission may direct, the Licensee shall submit [*77] to the Commission for approval revised maps, plans, specifications, and statements 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 maps, plans, specifications, and statements approved by the Commission, together with a statement in writing setting forth

the reasons which in the opinion of the Licensee necessitated or justified variations in or divergence from the approved maps, plans, specifications, and statements. Such revised maps, plans, specifications, and statements shall, if and when approved by the Commission, be made a part of the license under the provisions of Article 2 hereof.

Article 6. For the purpose of determining the stage and flow of the stream or streams from which water is to be diverted for the operation of the project works, the amount of water held in and withdrawn from storage, and the effective head on the turbines, the Licensee shall install and thereafter maintain such gages and stream-gaging stations as the Commission may deem [*78] necessary and best adapted to the requirements; and shall provide for the required reading of such gages and for the adequate rating of such stations. The Licensee shall also install and maintain standard meters adequate for the determination of the amount of electric energy generated by said 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 and may be altered from time to time if necessary to secure adequate determinations, but such alteration shall not be made except with the approval of the Commission or upon the specific direction of the Commission. The installation of gages, the ratings of said stream or streams, and the determination of the flow thereof, shall be under the supervision of, or in the cooperation with, the District Engineer of the United States Geological Survey having charge of stream-gaging operations in the region of said 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 [*79] upon. The Licensee shall keep accurate and sufficient record 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. 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 purpose of full public utilization of such lands and waters for navigation and recreational purposes, including fishing and hunting, and shall allow to a reasonable extent for such purposes the construction of access roads, wharves, landings, and other facilities on its lands and occupancy of which may in appropriate circumstances be subject to payment of rent to the Licensee in a reasonable amount: 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 and Provided further, that the Licensee's consent to the construction of access roads, wharves, landings, and other facilities shall [*80] not without its express agreement place upon the Licensee any obligation to construct or maintain such facilities.

Article 8. Insofar as any material is dredged or excavated in the prosecution of any work authorized under the license, or in the maintenance of the project, such material shall be removed and deposited so it will not interfere with navigation, and will be to the satisfaction of the District Engineer, Department of the Army, in charge of the locality.

Article 9. In the construction and 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 and obstructing traffic and endangering life on highways, streets, or railroads.

Article 10. Whenever the United States shall desire to construct, complete, or improve navigation [*81] facilities in connection with the project, the Licensee shall convey to the United States, free of cost, such of its lands and its rights-of-way and such right of passage through its dams or other

structures, and permit such control of pools as may be required to complete and maintain such navigation facilities.

Article 11. The Licensee shall furnish free of cost to the United States power for the operation and maintenance of navigation facilities 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 12. The operation of any navigation facilities which may be constructed as a part of or in the 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 the 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. Such rules and regulations may include the construction, maintenance, and operation by the Licensee, as its own expense, [*82] of such lights and signals as may be directed by the Secretary of the Army.

Article 13. 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 purpose hereinbefore mentioned.

Article 14. [*83] The actual legitimate original cost of the parts of the project to be completed after the effective date of the license, and of any future addition to or betterment of the project, shall be determined by the Commission in accordance with the Act and the rules and regulations of the Commission thereunder.

Article 15. After the first twenty (20) years of operation of the project under the license, six (6) percent per annum shall be the specified rate of return on the net investment in the project for determining surplus earnings of the project for the establishment and maintenance of amortization reserves, pursuant to Section 10 (d) of the Act; one-half of the project surplus earnings, if any, accumulated after the first twenty years of operation under the license, in excess of six (6) percent per annum on the net investment, shall be set aside in a project amortization reserve account as of the end of each fiscal year, provided that, if and to the extent that there is a deficiency of project earnings below six (6) percent per annum for any fiscal year or years after the first twenty years of operation under the license, the amount of such deficiency shall be deducted from the amount [*84] of any surplus earnings accumulated thereafter until absorbed, and one-half of the remaining surplus earnings, if any, thus cumulatively computed, shall be set aside in the project amortization reserve account; and the amounts thus established in the project amortization reserve account shall be maintained therein until further order of the Commission.

Article 16. No lease of the project or part thereof whereby the lessee is granted the exclusive occupancy, possession, or use of project works for purposes of generating, transmitting, or distributing power shall be made without the prior written approval of the Commission; and the Commission may, if in its judgment the situation warrants, require that all of the conditions of the license, of the Act, and of the rules and regulations of the Commission shall be applicable to such lease and to such property so leased to the same extent as if the lessee were the Licensee: Provided, that the provisions of this

article shall not apply to parts of the project or project or project works which may be used by another jointly with the Licensee under a contract or agreement whereby the Licensee retains the occupancy, possession, [*85] and control of the property so used and receives adequate consideration for such joint use, or to leases of land while not required for purposes of generating, transmitting, or distributing power, or to buildings or other property not built or used for said purposes, or to minor parts of the project or project works, the leasing of which will not interfere with the usefulness or efficient operation of the project by the Licensee for such purposes.

Article 17. The Licensee, 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 necessary or useful to the project and to the development, transmission, and distribution of power therefrom shall be voluntarily sold, transferred, abandoned, or otherwise disposed of without the approval of the Commission: Provided, that a mortgage or trust deed or judicial sales made thereunder, or tax sales, shall not be deemed voluntary transfers within the meaning of this article. In the [*86] event the project is taken over by the United States upon the termination of the license, as provided in Section 14 of the Act, or is transferred to a new licensee under the provisions of Section 15 of the Act, the Licensee, its successors and assigns will be responsible for and will make good any defect of title to or of right of user in any of such project property which is necessary or appropriate or valuable and serviceable in the maintenance and operation of the project, and will pay and discharge, or will assume responsibility for payment and discharge of, all liens or incumbrances 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 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, or 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 user in any of such [*87] project property than was necessary to acquire for its own purposes as Licensee.

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.

Article 19. The actual legitimate original cost, estimated where not known, and the accrued depreciation of the existing parts of the project completed prior to the effective date of the license shall be determined by the Commission as of such effective date, in accordance with the Federal Power Act and the rules and regulations of the Commission, and such cost less such accrued depreciation, so determined, shall be the net investment in the existing constructed parts of the project as of such effective date.

Article 20. The Licensee shall comply with such reasonable modifications of the project structures and such reasonable modifications of project operations in the interest of fish and wildlife resources, provided that such modifications shall be reasonably consistent with the primary purpose of the project, as may hereafter be prescribed by the Commission upon the recommendations [*88] of the North Carolina Wildlife Resources Commission and the Secretary of the Interior after notice and opportunity for hearing and upon a finding based on substantial evidence that such modifications are necessary and desirable and consistent with the provisions of the Federal Power Act: *Provided, however,* that no modification of project structures shall be required unless recommendations are made by the North Carolina Wildlife Resources Commission or the Secretary of the Interior prior to 9 months from date of issuance of license.

Article 21. The Licensee shall, in the interests of stream sanitation, fish and wildlife conservation, and other beneficial public uses, except in cases of emergency and periods required for necessary repairs to its facilities, (a)

discharge from its Tillery Hydroelectric Development sufficient water to maintain below said development a minimum stream flow of 40 c.f.s. at all times; and (b) discharge from its Blewett Falls Hydroelectric Development sufficient water to maintain at the Rockingham USGS Gaging Station (located on the left bank of the Pee Dee River at the U.S. Highway No. 74 bridge) a minimum stream flow of 150 c.f.s. at all times: Provided, [*89] that if and when additional water is required to maintain the quality standard prescribed by the North Carolina Stream Sanitation Committee for Class A-11 waters, the Licensee shall release additional water at Blewett Falls so that the stream flow each calendar day, in the aggregate, will not be less than the lowest unregulated daily flow of record, measured at the Rockingham gage and computed by the U.S. Geological Survey, as may be ordered by the Commission upon the recommendations of the interested Federal and State agencies, after notice and opportunity for hearing. Discharge of water shall include all water flowing from the development, whether by leakage, spill, generation, or otherwise, and provided further that in the event of the construction of upstream reservoirs, for the purpose of increasing the minimum flows in the river, the Licensee may be required to release additional water over and above the lowest unregulated daily flow of record, if such additional water may be released without decreasing the availability of water to the Licensee for power production below that so available to the Licensee before construction of the said upstream reservoirs, after notice [*90] and opportunity for hearing.

Article 22. The Licensee shall to the maximum feasible extent coordinate the operation of its project with the systems of Carolina Aluminum Company, Duke Power Company, and others with which it may be interconnected, taking into account existing and future situations as to: amount of regulated flow available at-site and upstream from Tillery Development, generating capacity at hydroelectric and other power plants, and magnitudes and characteristics of loads to be served not only by the Licensee but also by interconnected electric utilities; and, the Commission reserves the right, after opportunity for hearing, to order such coordination of operations or changes therein as it finds to be economically feasible and in the public interest, and to require the submission of reports and filing of agreements, contracts, and other papers relating to the coordination of operations, whenever requested by the Commission or changes are made or accepted by the Licensee.

Article 23. The Licensee shall at such time and to the extent it is economically feasible to do so, after notice and opportunity for hearing, develop fully the head between its Tillery [*91] and Blewett Falls Developments, and install additional generating units in the project.

Article 24. The Commission expressly reserves the right to determine at a later date what transmission lines and appurtenant facilities, if any, shall be included in the license, after opportunity for hearing.

Article 25. The Licensee shall commence construction of the fourth generating unit of 22,000 kilowatts capacity at the Tillery development within one year from the date of issuance of license and shall complete such construction with three years from date of issuance.

Article 26. The Licensee shall pay to the United States the following annual charges:

For the purpose of reimbursing the United States for the costs of administration of Part I of the Act, one (1) cent per horsepower on the authorized installed capacity (145,000 horsepower) plus two and one-half (2 1/2) cents per 1,000 kilowatt-hours of gross energy generated by the project during the calendar year for which the charge is made.

(C) The "J", "K", "L" and "M" Exhibits referred to in the further findings and conclusions, contained in the decision issued herewith and of which this order forms a part, conform substantially [*92] with the Commission's rules and regulations and are approved as part of this license.

(D) The proceeding in Docket No. IT-5498 be and hereby is terminated.

GLEN R. LAW,
Presiding Examiner.