

UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

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

City of Summersville, West Virginia ) Project Nos. 10813-011  
and 022

ORDER AMENDING LICENSE, REVISING ANNUAL CHARGES,  
AND LIFTING STAY

(Issued October 18, 1996)

On September 25, 1995, as supplemented April 23 and July 15, 1996, the City of Summersville, licensee for the 80-megawatt (MW) proposed Summersville Hydroelectric Project, filed an application to amend its license by revising the route of the project's transmission line, and reconfiguring and relocating the project's powerhouse. 1/ Summersville also requested that the Commission delete from its license Article 303, which required it to hire a board of consultants to review project design and construction.

As described below, we grant Summersville's amendment application. We also lift our September 24, 1996 stay of the project license.

## BACKGROUND

As licensed, the project powerhouse would be located on the Gauley River, immediately downstream of the U.S. Army Corps of Engineers' Summersville Dam, and would contain three 24-MW turbines and one 8-MW turbine. Water would be fed to the powerhouse from the existing outlet conduits of the dam through four penstocks. The licensed project also includes an eight-mile-long, 138-kilovolt (kV) transmission line, running to a substation belonging to Monongahela Power Company, to whom

1/ The Summersville Project, which was licensed on September 25, 1992, 60 FERC ¶ 61,291, would be located on the Gauley River, in Nicholas County, West Virginia, and would use surplus water or waterpower from the U.S. Army Corps of Engineers' Summersville Dam. The revised transmission line route proposed in the amendment would be located in part in Fayette County, West Virginia.

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Summersville proposed to sell the power generated by the project. Summersville did not, however, have a contract with Monongahela at the time the license order was issued. 2/

Summersville now proposes to amend its license in order to reduce project costs and to reflect a power purchase agreement it has entered into with Appalachian Power Company (APCo). Summersville wants to reduce the size of the powerhouse and to relocate it from the center of the river to the riverbank, to use two 40-MW turbines instead of the four turbines authorized in the license (retaining, however, the same 80-MW capacity authorized in the license), and to use only one, larger-diameter penstock instead of the four smaller ones originally contemplated. Finally, Summersville proposes to construct a 9.9-mile-long, 69-kV transmission line, to connect to the nearest APCo substation, in lieu of the eight-mile-long line connecting to Monongahela Power Company's system. 3/

The Commission issued a public notice of the proposed amendment on October 12, 1995. The notice stated that comments and motions to intervene in the proceeding were due on December 4, 1995. No comments or interventions were received.

A draft environmental assessment (EA) was issued and publicly noticed on April 29, 1996. The notice included a comment deadline of May 28, 1996. Two commenters -- the National Park Service and the Foulke Meadow River Lands Trust -- responded by the deadline. 4/

From June through September 1996, the Commission received letters from a number of residents in the project area, including landowners across whose property the transmission line would run,

2/ See 60 FERC at p. 61,986.

3/ Following its original September 25, 1995 amendment application, Summersville supplemented its application on April 23, 1996, to revise the route of the transmission line, in accordance with the wishes of the National Park Service, to remove the route from Park Service land and thus avoid impacts to the Gauley River National Recreation Area. On July 15, 1996, Summersville revised another portion of the route, so that the line, which crosses the property of the Foulke Meadow River Lands Trust (a private land trust), would do so in a location preferred by the Trust and the Nuttall Trust, an adjacent private trust.

4/ The Park Service suggested some editorial changes, which have been incorporated in the Final EA. The Trust's concern regarding the transmission line route across its property was subsequently resolved. See n. 3, *supra*.

if the amendment were approved. Several landowners stated that they did not want the transmission line to cross their property. The majority of the letters expressed concern about the aesthetic impacts of the rerouted line or apprehension that the project would harm aesthetic or recreational values in the Gauley or Meadow Rivers or Summersville Lake, located above the Summersville Dam.

On August 19, 1996, counsel for the Mt. Lookout-Mt. Nebo Property Protection Association (Association) sent a letter to the Commission's Office of Hydropower Licensing regarding the amendment proceeding. 5/ The letter expressed the view that sufficient notice of the amendment application had not been provided and requested "that affected property owners be permitted to intervene prior to any final action by the Commission with respect to [the] amendment . . . ." The letter also asked that the Commission prepare an environmental impact statement (EIS) regarding the amendment.

In response to the correspondence submitted regarding the transmission line route, the Commission, by public notice dated September 10, 1996, convened a public meeting on September 19, 1996, in Summersville, in order to give persons concerned about the amendment an additional opportunity for comment.

On September 24, 1996, the Association filed an alternative transmission line route.

On September 24, 1996, the Commission, in response to a request from Summersville, granted, pending Commission action on the amendment application, a stay of the project license and, therefore, the statutory deadline for commencement of construction of the project, which would have run on that date. The Commission made the stay effective August 24, 1996, so that when the stay was lifted, Summersville would have 30 days to commence construction. 6/

On October 8, 1996, the American Whitewater Affiliation (AWA) filed a motion for late intervention.

- 5/ As described in the letter, the Association is "an association formed to oppose the proposed route of the transmission line."
- 6/ See 76 FERC ¶ 61, \_\_\_. The Commission backdates stays of construction deadlines when it concludes that a licensee cannot reasonably be expected to be prepared to commence project construction within the time remaining when the stay is lifted. See, e.g., William B. Ruger, Jr., 71 FERC ¶ 61,320 (1995); Eric R. Jacobson, 69 FERC ¶ 61,324 (1994).

PROCEDURAL ISSUES

The Association's August 19, 1996 letter fails to comply with our rules of practice and procedure in several ways. Among other things, Rule 2001 7/ requires that all filings be sent to the Commission's Secretary, Rule 2004 8/ requires that a original and 14 copies of all filings be submitted, and Rule 2010 2/ requires that filings include a certification that the filing has been served on all persons on official service for the proceeding. The August 19, 1996 letter did not satisfy any of these requirements. 10/ In addition, because the Association did not seek to intervene in the proceeding by the December 4, 1995 deadline established in the public notice of the amendment application, the Association was required to seek a grant of late intervention under Rule 214(b)(3), 11/ but did not do so.

Despite these deficiencies, we will grant the Association's late motion to intervene. The Association represents interests that may not be adequately represented by other parties in the proceeding. Because we have stayed the license pending our acting on the amendment application, granting the late intervention will not disrupt the proceeding or cause prejudice to or place additional burdens on the existing parties. However, we expect the Association to follow our regulations in the future. We will also grant AWA's motion for late intervention, for the same reasons, despite the fact that this motion was made extremely late in the proceeding, over 10 months after the December 4, 1995 deadline for interventions.

- 7/ 18 C.F.R. § 385.2001 (1996).
- 8/ 18 C.F.R. § 385.2004.
- 2/ 18 C.F.R. § 385.2010.
- 10/ Staff from the Commission's Office of the Secretary contacted the Association's counsel via telephone and explained our filing requirements. The Association nonetheless did not resubmit the letter in accordance with our regulations.
- 11/ 18 C.F.R. § 385.214(b)(3). Pursuant to this rule, a movant seeking late intervention must show good cause why the deadline for interventions should be waived.

DISCUSSION

A. Notice

Section 6 of the FPA 12/ provides that hydropower licenses may be amended "only upon mutual agreement between the licensee and the Commission after thirty days' public notice." 13/ Section 2.1 of our regulations 14/ provides for publication in the Federal Register of applications for amendment of licenses. In addition, due process requires that no person be deprived of property without first being given an opportunity to be heard in a reasonable time and in a reasonable manner. 15/

The Association asserts that the Commission failed to give proper notice of the license amendment. It bases this claim upon two premises: first, that the licensee failed to provide adequate notice, and second, that the Commission erred in publishing notice of the amendment in the Charleston Gazette, rather than in newspapers that the Association claims have broader circulation in the project area. 16/

We have reviewed the notice sent by the licensee to all landowners listed in the local tax rolls as holding property along the transmission line route proposed in the amendment. 17/ We agree with the Association that the notice was far from ideal. The notice leads the reader to believe that the licensee already has eminent domain authority to condemn land along the proposed route, and the notice does not explain that there will be a proceeding before the Commission, in which

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12/ 16 U.S.C. § 799.

13/ This requirement is also set forth in Section 4.202(a) of our regulations. See 18 C.F.R. § 4.202(a).

14/ 18 C.F.R. § 2.1(a)(1)(iii)(c).

15/ See Kings River Conservation District, 36 FERC ¶ 61,365 at pp. 61,882-83 (1986).

16/ The Association also claims that the published notice violated the National Environmental Policy Act of 1969 by failing to conform to West Virginia requirements concerning the selection of the appropriate newspapers. NEPA's public notice requirements are satisfied by our FPA notice procedures. See Mega Hydro, Inc., 38 FERC ¶ 61,313 (1987).

17/ By letter dated July 23, 1995, Commission staff directed the licensee to provide notice of the amendment application to potentially affected property owners.

interested persons may intervene or file comments, before the Commission will determine whether the licensee will be authorized to use the proposed new route. These matters should be made clear in all such notices.

However, any deficiency in the notice provided by the licensee has been cured by subsequent notice provided by the Commission. On October 12, 1995, the Commission issued public notice of the amendment. The notice was also published in the Federal Register and in the Charleston Gazette, on November 2, 1995. The Commission's staff sent a copy of the notice to each of the landowners identified by the licensee. The notice explained the nature of the proceeding regarding the proposed amendment, and went into some detail as to how interested persons could protest, intervene, or file comments. The Commission issued notice of the publication of the draft EA on April 29, 1996. Copies of the notice were sent to all parties that had asked to be included on the project mailing list maintained by the Commission, and copies of the draft EA were sent to all persons who had previously filed comments or who had requested copies of the draft. On September 19, 1996, preceded by a public notice, Commission staff held a meeting in Summersville in order to give the public an additional opportunity for comment. These procedures fully satisfy our notice requirements.

We further conclude that publication in the Charleston Gazette was appropriate. The Gazette has the widest circulation of any newspaper in Nicholas County (location of most of the proposed project) and runs a close second in Fayette County (location of part of the revised proposed transmission line). 18/ Publication in the Gazette provided sufficient notice of the amendment application.

In any case, it is clear that interested persons have had actual notice of this proceeding. In addition to the Commission staff's individual mailings to landowners and to others on the project mailing list, the Association has moved to intervene herein, and that request has been granted. Commission staff examined in the final EA the alternate transmission line route the Association proposed. Moreover, the Commission has received a significant number of letters from persons commenting, both pro and con, on the amendment, and has thoroughly evaluated those comments in rendering the decisions in this order.

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18/ The Gazette reaches 25.6 percent of all households in Nicholas County, while the Beckley Register-Herald, a publication the Association states is more appropriate, reaches 4 percent. In Fayette County, the Gazette reaches 22.2 percent of the households, while the Register-Herald reaches 27 percent. See Circulation 96 (SRDS).

B. Preparation of an EIS

The Association's assertion that the Commission should prepare an EIS, instead of an EA, regarding the amendment, is primarily based on what the Association views as the transmission line's potential adverse impacts to the "scenic and environmental integrity of the Meadow River."

Under NEPA, the Commission must prepare an EIS when its approved action will significantly affect the quality of the human environment. We may issue an EA and finding of no significant impact (FONSI), rather than an EIS, when we conclude that the project will have no significant adverse environmental consequences. <sup>19/</sup> In this case, the EA examined the potential impacts of the amended project on all resource areas, and concluded that the project, which would have minor adverse impacts on soils, vegetation, wildlife, land use, and aesthetics, would not significantly affect the environment. Based on this finding, preparation of an EA was appropriate.

C. The Amendment

The Commission's staff EA analyzing the environmental consequences of the proposed amendment also examines the alternative transmission line route proposed by the Association. A copy of the EA is attached to this order.

The EA states that the proposed relocation and reconfiguration of the powerhouse would, on balance, reduce the environmental impacts of the project, because of its less visible location, its smaller size, and the fact that a greater amount of water at lower flows would pass through the project's Howell-Bunger valve, with a resulting slight increase in the level of dissolved oxygen in water existing the project. <sup>20/</sup> No commenter disputes these conclusions. <sup>21/</sup>

The EA also compares the transmission line route proposed by the licensee with that proposed by the Association, neither of

<sup>19/</sup> See *LaFlamme v. FERC*, 945 F.2d 1124, 1128-29 (9th Cir. 1991).

<sup>20/</sup> See EA at p. 15.

<sup>21/</sup> A number of the comments we have received express concern about the project's impact on whitewater and other riverine recreation (impacts that will be lessened by the removal of the powerhouse from the river) and general opposition to the project. These issues, which are not raised by the amendment, were addressed in the original license proceeding and are not germane here.

which would have significant environmental impacts. In general, the EA finds that the impacts of the two routes are similar. However, the 11.2-mile-long route proposed by the Association is 1.3 miles longer than the 9.9-mile-long route proposed in the amendment. Thus, the Association's route would affect an approximately 12 percent greater area and cost approximately 12 percent more than the route proposed by the licensee. <sup>22/</sup>

Given that the two proposed routes have similar overall impacts, but that the Association's route would have a slightly greater environmental impact due to its greater length and higher cost, we adopt the EA's conclusion that the route proposed by the licensee is environmentally preferable. To ensure that the precise alignment of the approved route has the minimal effect on the property of affected landowners, we are adding to the license Article 414, which will, among other things, require the licensee to consult with the landowners in developing a final design plan (including determinations regarding the use of single or double poles) for the transmission line. <sup>23/</sup>

AWA raises four issues. First, AWA objects that the Commission extended the deadlines for the commencement of construction of the project, including by the recent stay. Second, AWA expresses concern that the licensee has asked the Corps to modify releases from the Summersville Dam to accommodate hydropower generation. Third, AWA asks that the license be reopened to examine the project's economic feasibility in light of changes in the power market. Finally, AWA argues that rerouting the transmission line along the Meadow River will pose a serious threat to whitewater rafting.

<sup>22/</sup> See EA at pp. 33-34. Based on the licensee's estimate of the cost of the transmission line, it would cost \$260,000 to \$325,000 more to build the longer route proposed by the Association. The Association's route might well be even more expensive, because it crosses a small section of National Park Service land in the Gauley River National Recreation Area, where the Park Service might preclude use of their land for the line or require the line to be buried. Section 2402 of the Energy Policy Act of 1992 prohibits the Commission from issuing an original license for any new hydroelectric project within the boundaries of any unit of the National Park System that would have a direct adverse impact on federal lands within any such unit.

<sup>23/</sup> We are also amending the license by adding Article 415, which requires the licensee to implement its proposed plan, approved by the U.S. Fish and Wildlife Service, to avoid impacts to a federally-listed endangered plant species, *Virginia spiraea*.

The first three issues are not germane to this proceeding, which deals solely with the merits of the amendment application. The Commission's grant of the two-year extension of the statutory deadline for commencement of construction was in any event two years ago. <sup>24/</sup> As for the short stay of the construction deadline, this was needed in order to give landowners in or near the path of the new transmission line every reasonable opportunity to present their arguments and concerns, and to allow a meaningful review of these matters. It is in our view patently contrary to the public interest to assert that the entire Summersville Project should be stopped because the Commission took the time to give opponents of the rerouted line an additional chance to express their objections. Such a result would be particularly inequitable here, inasmuch as Summersville filed its amendment application a full year before the construction deadline, <sup>25/</sup> and has made diligent efforts (described in n. 3, *supra*) to address concerns over the route proposed. In any case, we find below that Summersville commenced project construction before the deadline that was stayed.

The licensee does not seek in this proceeding any authorization relating to increased flows at the dam. In any case, flow releases are within the sole control of the Corps, and any concern about action that the Corps might take must be raised with that agency. And while the general economic feasibility of the project is also not a subject of this limited proceeding, <sup>26/</sup> we note that the amendment appears to improve the economic prospects of the project, in that the licensee now has a signed power sales agreement, and the amended project will be considerably less expensive to construct than the original proposal.

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<sup>24/</sup> Section 13 of the FPA, 16 U.S.C. § 806, provides that project construction must commence no later than two years after the issuance date of the license, but that this deadline "may be extended once but not longer than two additional years . . . ." A two-year extension was granted by staff order issued June 15, 1994 (unpublished).

<sup>25/</sup> Compare Southeastern Hydro-Power, Inc., 74 FERC ¶ 61,241 (1996) (stay denied where eleventh-hour amendment application was attributable to licensee's lack of timely effort).

<sup>26/</sup> It is our policy to offer hydropower licenses to applicants where our consideration and balancing of all public interest factors leads us to conclude that licensing a project is in the public interest. See Duke Power Co., 72 FERC ¶ 61,030 at pp. 61,185-86 (1995).

AWA does not explain how it believes the transmission line will adversely affect whitewater rafting. The transmission line will not physically impede activities on the river, nor will it block access to the area. To the extent that AWA is concerned about the aesthetic impacts of the line, the EA explains that the transmission line will be visible to rafters on the Meadow River for only a brief period as they pass beneath the portion of the line that crosses the river. The remainder of the line will not protrude above existing vegetation, and only 80 feet of shoreline (out of a total of five miles) will be cleared by the right-of-way. The licensee will use wooden poles that will blend with the existing forest, will plant trees along the transmission line corridor, and will keep the width of the corridor to the minimum needed. <sup>27/</sup> Thus, the transmission line will not have a significant adverse impact on the aesthetic quality of the Meadow River Gorge.

#### D. Other Issues

##### 1. Article 201: annual charges

The powerhouse's new location will be on 11.2 acres of land owned by the Corps. In addition, the rerouted transmission line right-of-way will include four acres owned by the Corps. We are therefore revising Article 201 of the project's license to require the payment of annual charges for the use of this land.

##### 2. Article 303: design consultants

License Article 303 requires the licensee to hire a panel of expert consultants to oversee the design and construction of the project. The licensee states that the project as amended will be considerably less complex than its original proposal and requests that we eliminate this provision. The relocation of the powerhouse from the river to the riverbank and the simplification of its configuration ameliorate our concern that the civil engineering of the project would require expert supervision. We will therefore remove Article 303 from the license. <sup>28/</sup>

##### 3. Lifting the Stay

Our September 24, 1996 order granted a stay of the project's license, effective August 24, 1996, pending action on the amendment application. Because we are approving the application, we hereby lift the stay.

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<sup>27/</sup> See EA at pp. 21-22.

<sup>28/</sup> Summersville must still obtain approval by the Corps of the project design.

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On September 17, 1996, prior to the issuance of the stay, Summersville filed with the Commission documentation to show that it had commenced construction on the project. We have now had the opportunity to review this information, and conclude that it indeed does show that Summersville commenced project construction prior to September 24, 1996.

Project construction generally will be regarded as having commenced with the start of work on machinery or facilities considered to be significant, permanent elements of the project. The acts which constitute the commencement of construction will vary from project to project, depending on the nature of the facilities already in place. 29/ In cases such as this, involving an existing dam and the construction of a new powerhouse, we consider the start of manufacture of new turbines and generator units to be the commencement of construction. 30/

In its September 17, 1996 filing, Summersville submitted a contract between Gauley River Power Partners, L.P. (GRPP), which will construct the project, and IMPSA International, pursuant to which IMPSA will provide all the electric generating equipment for the project, including the turbines and draft tubes. 31/ The draft tubes are to be manufactured by Linta Welding, Inc. under a separate agreement. Summersville also provided an affidavit showing the payment of \$400,000 by GRPP to IMPSA, in three payments on June 6, August 8, and September 1996. Finally, GRPP provided a purchase order from IMPSA to Linta dated August 12, 1996, and an affidavit from Linta to the effect that fabrication of the draft tubes started on September 4, 1996.

The information provided by Summersville demonstrates that construction of the project's turbines began on September 4, 1996. We therefore conclude that commencement of construction of the project began on that date. 32/

29/ See UHA-Braendly Hydro Associates, 44 FERC ¶ 61,178 at p. 61,591 (1989).

30/ See Atlantic Power Development Corporation, 40 FERC ¶ 61,253 at p. 61,857 (1987).

31/ Draft tubes are diffusers that recapture energy from water as it exits the project's turbines.

32/ We note that construction commenced in time to meet the requirements of Title II of the West Virginia National Interest River Conservation Act of 1987, Pub. L. 100-534, 102 Stat. 2699, and of the amendment to that act, which has been passed by Congress and is pending enrollment and (continued...)

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The Commission orders:

(A) The motion for late intervention filed on August 19, 1996, by the Mt. Lookout/Mt. Nebo Property Protection Association is granted.

(B) The motion for late intervention filed on October 8, 1996, by the American Whitewater Affiliation is granted.

(C) The application to amend the Project No. 10813 license, filed on September 25, 1995, and supplemented April 23 and July 15, 1996, by the City of Summersville, is granted.

(D) The following exhibit F and G drawings, which conform to the Commission's rules and regulations, are approved and made part of the license, replacing the previous exhibit F and G drawings No. 10813-1 through 10813-5:

Exhibit	FERC No.	Showing	Filed
F-1	10813-6	Conceptual Structural Arrangement, Powerhouse and Cofferdam	4/23/96
F-2	10813-7	Conceptual Structural Arrangement, Powerhouse Plan	4/23/96
F-3	10813-8	Conceptual Structural Arrangement, Powerhouse Vertical Sections	9/25/95
G-1 (sheet 1)	10813-9	Transmission Line Map	7/15/96
G-1 (sheet 2)	10813-10	Transmission Line Map	7/18/96
G-2	10813-11	Project Plan	4/23/96

(E) The project description found in Ordering paragraph (B)(2) of the license for Project No. 10813 is revised to read as follows:

(2) Project works consisting of: (a) a 15-foot-diameter penstock connected to one of the existing

32/ (...continued)  
Presidential signature (H.R. 4236, 10th Cong., 2d Sess, 142 CONG. REC. 12,213).

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outlet conduits from the Corps' Summersville Dam; (b) a powerhouse with two 40-MW turbines/generator units; (c) a 4.16/69-kV switchyard; (d) a 9.9-mile-long, 69-kV transmission line; and (e) appurtenant facilities.

(F) Article 303 is deleted from the license.

(G) Article 201 is revised, by adding parts (c) and (d), as follows:

c. For the purpose of compensating the United States for the use, occupancy, and enjoyment of 11.2 acres of its lands, exclusive of transmission line right-of-way, a reasonable amount as determined in accordance with the provisions of the Commission's regulations in effect from time to time,

d. For the purpose of compensating the United States for the use, occupancy, and enjoyment of 4 acres of its lands for transmission line right-of-way, a reasonable amount as determined in accordance with the provisions of the Commission's regulations in effect from time to time.

(H) The following articles are added to the license:

**Article 414.** The licensee shall file, for Commission approval, at least 90-days before the start of construction of the transmission line, a final design plan for the transmission line. This final design plan shall include maps at a scale not smaller than 1-200 showing the centerline, ROW limits, private property boundaries, locations of all residences, and locations of all poles. This plan shall also detail the new access roads and other areas that would be used or disturbed and have not been previously identified in filings with the Commission. In addition, the plan should include provisions for raptor protection in accordance with guidelines set forth in "Suggested Practices for Raptor Protection on Power Lines -- the State of the Art in 1981," by the Raptor Research Foundation, Inc. The plan shall also include detailed design drawings of the transmission line, showing phase spacing, configuration, and grounding practices, and a construction schedule. It should be prepared in consultation with the affected property owners, the U.S. Fish and Wildlife Service (FWS), the West Virginia Department of Natural Resources (WVDNR), and the West Virginia State Historic Preservation Officer (WVSHPO).

**Article 415:** The licensee shall implement the avoidance plan approved by the United States Fish and Wildlife Service (FWS) in a letter dated August 11, 1995, to avoid impacts to

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the federally listed threatened plant species, Virginia spiraea (*Spiraea virginiana*). The licensee shall contact the FWS prior to construction activity to confirm the location and mark the populations of Virginia spiraea (*Spiraea virginiana*). The line shall be placed as far from the plant populations as practical.

(I) Within 90 days of the date of issuance of this order, the licensee shall file an original and three duplicate sets of aperture cards of the approved drawings. The original should be reproduced on silver or gelatin 35 mm microfilm. The duplicates are copies of the originals made on Diazo-type microfilm. All microfilm should be mounted on a Type D (3 1/4" x 7 3/8") aperture card.

Prior to microfilming, the FERC Drawing Number (10813-6 through 10813-11) shall be shown in the margin below the title block of the approved drawing. After mounting, the FERC Drawing Number should be typed in the upper right corner of each aperture card. Additionally, the Project Number, FERC exhibit (e.g., F-6, G-1), Drawing Title, and date of this order should be typed in the upper left corner of each aperture card. It should be indicated if the approved drawing supersedes an older drawing. See Figure 1.

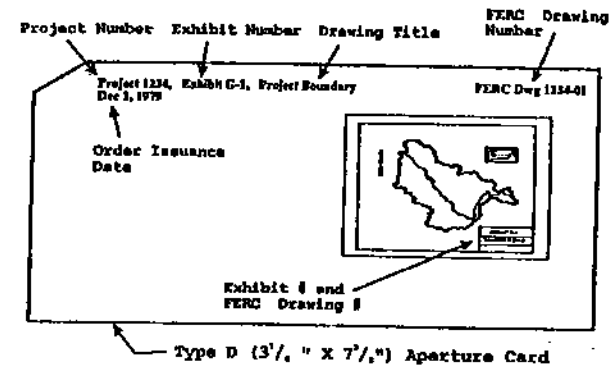


Figure 1. Sample Aperture Card Format

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The original and one duplicate set of aperture cards shall be filed with the Secretary of the Commission. One duplicate set of aperture cards shall be filed with the Commission's New York Regional Office. The remaining duplicate set of aperture cards shall be filed with the Bureau of Land Management's Eastern States Office. 33/

(J) The stay of the license for Project No. 10813, effective August 24, 1996, is lifted.

By the Commission.

( S E A L )

*Lois D. Cashell*  
Lois D. Cashell,  
Secretary.

FINAL ENVIRONMENTAL ASSESSMENT

APPLICATION FOR AMENDMENT OF LICENSE

SUMMERSVILLE HYDROELECTRIC PROJECT

FERC PROJECT NO. 10813-011

WEST VIRGINIA

33/ The Bureau of Land Management's Eastern States Office is located at the following address:

Director  
Eastern States Office  
Branch of Lands (ES-962)  
Attn: FERC Withdrawal Recordation  
7450 Boston Blvd.  
Springfield, VA 22153

Federal Energy Regulatory Commission  
Office of Hydropower Licensing  
Division of Licensing and Compliance  
888 First Street, N.E.  
Washington, DC 20426

October 1996



FINAL ENVIRONMENTAL ASSESSMENT  
FEDERAL ENERGY REGULATORY COMMISSION  
OFFICE OF HYDROPOWER LICENSING  
DIVISION OF LICENSING AND COMPLIANCE

2

Project Name: Summersville Hydroelectric Project

FERC Project No. 10813-011

A. APPLICATION

1. Application type: Amendment of License
2. Date filed with the Commission: September 25, 1995 supplemented on April 23 and July 15, 1996
3. Applicant: City of Summersville (licensee)
4. Water body: Gauley River
5. River Basin: Kanawha
6. Nearest city or town: City (formerly Town) of Summersville
7. Counties: Nicholas and Fayette State: West Virginia

B. PURPOSE AND NEED FOR ACTION

On September 25, 1995, and supplemented on April 23 and July 15, 1996, the City (formerly Town) of Summersville (City or licensee) 1/ filed an application for amendment of the license for the Summersville Hydroelectric Project (FERC No. 10813) to: (1) substitute two turbine/generator units for the four units in the license; (2) revise the project boundary to include 9.9 miles of new transmission line in place of the licensed 8-mile transmission line; and (3) delete license article 303. The proposed amendment would not affect project capacity.

The licensee requested the amendment because the original proposal was not economically feasible. The licensee is reducing project costs by reducing the size of the powerhouse and its associated civil works. The changes in the route of the transmission line are needed in order to permit the licensee to reach a utility (Appalachian Power Company (APC)) which will purchase the power.

C. PROPOSED ACTION AND ALTERNATIVES

1. Background

In 1966, the U.S. Army Corps of Engineers (COE) constructed Summersville dam, a rockfill structure 393 feet high and 2,280 feet long, on the Gauley River in Nicholas County, West Virginia, for flood control. The Summersville Hydroelectric Project, to be located at the dam, would use water released from the dam.

1/ Noah Corporation (Noah Corp.) is acting as an agent for the licensee in this proceeding.

The Commission issued a license for the Summersville Hydroelectric Project on September 25, 1992. 2/ The project as licensed would consist of: (1) three penstocks, each 11 feet in diameter, connected to existing outlet conduits, and a fourth 3-foot diameter penstock, which extends from penstock No. 3 to the small turbine; (2) a powerhouse with three 24 megawatt (MW) and one 8 MW turbine/generators, for a total installed capacity of 80 MW; (3) a valve house with three large and one small Howell-Bunger valves; (4) a tailrace; (5) an 8-mile-long, 3-phase, 138-Kv transmission line; and (6) appurtenant facilities.

The Commission issued an environmental assessment (EA), evaluating the environmental impacts of the proposed project, on January 10, 1992. During preparation of the EA, consultation and comments were solicited from agencies and other entities that could be affected by the proposed project. When the Commission issued the license for the project in 1992, it included articles to mitigate, to the extent necessary, the environmental impacts of the project. On September 25, 1995, the City filed for the subject amendment of the license for the Summersville Hydroelectric Project.

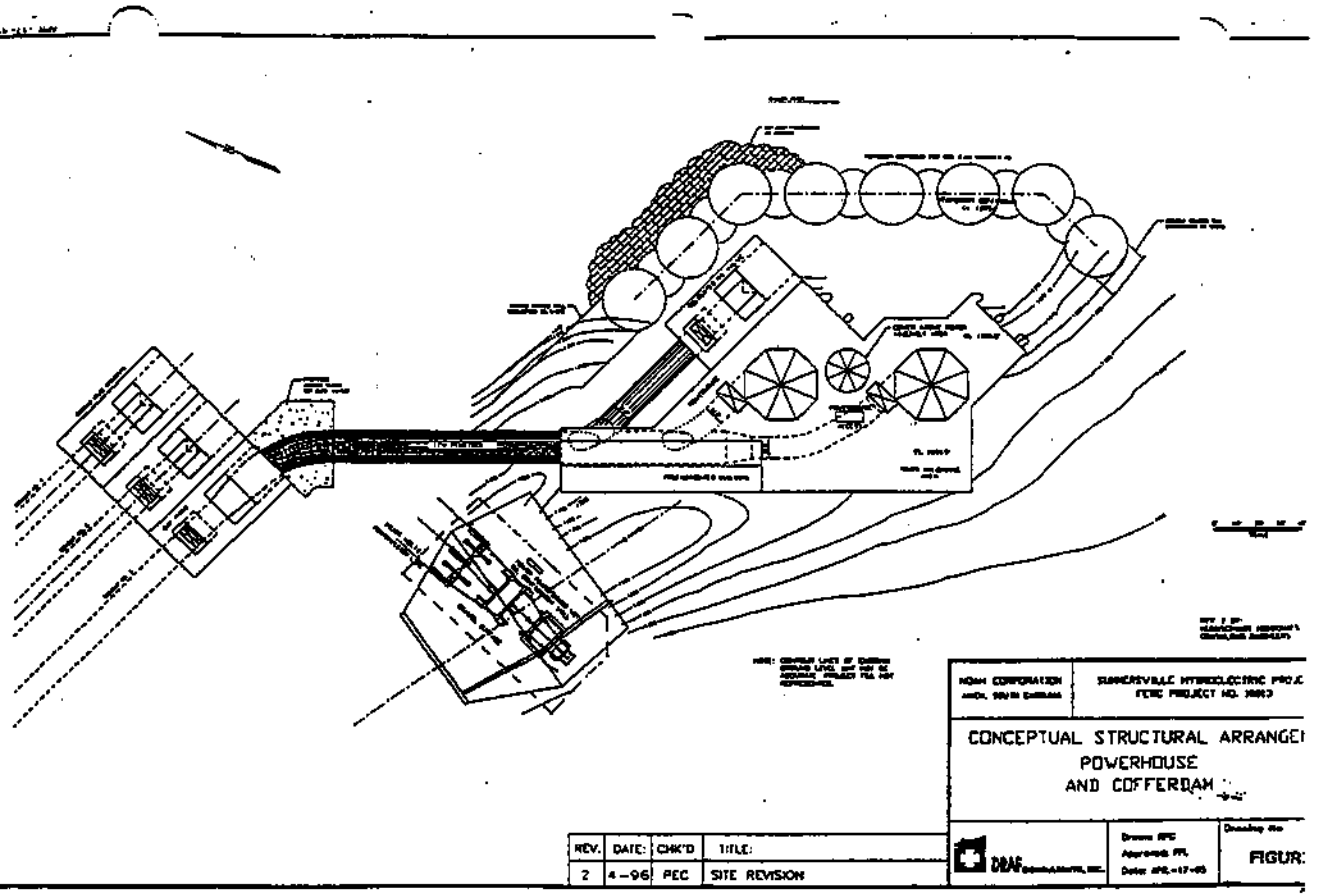
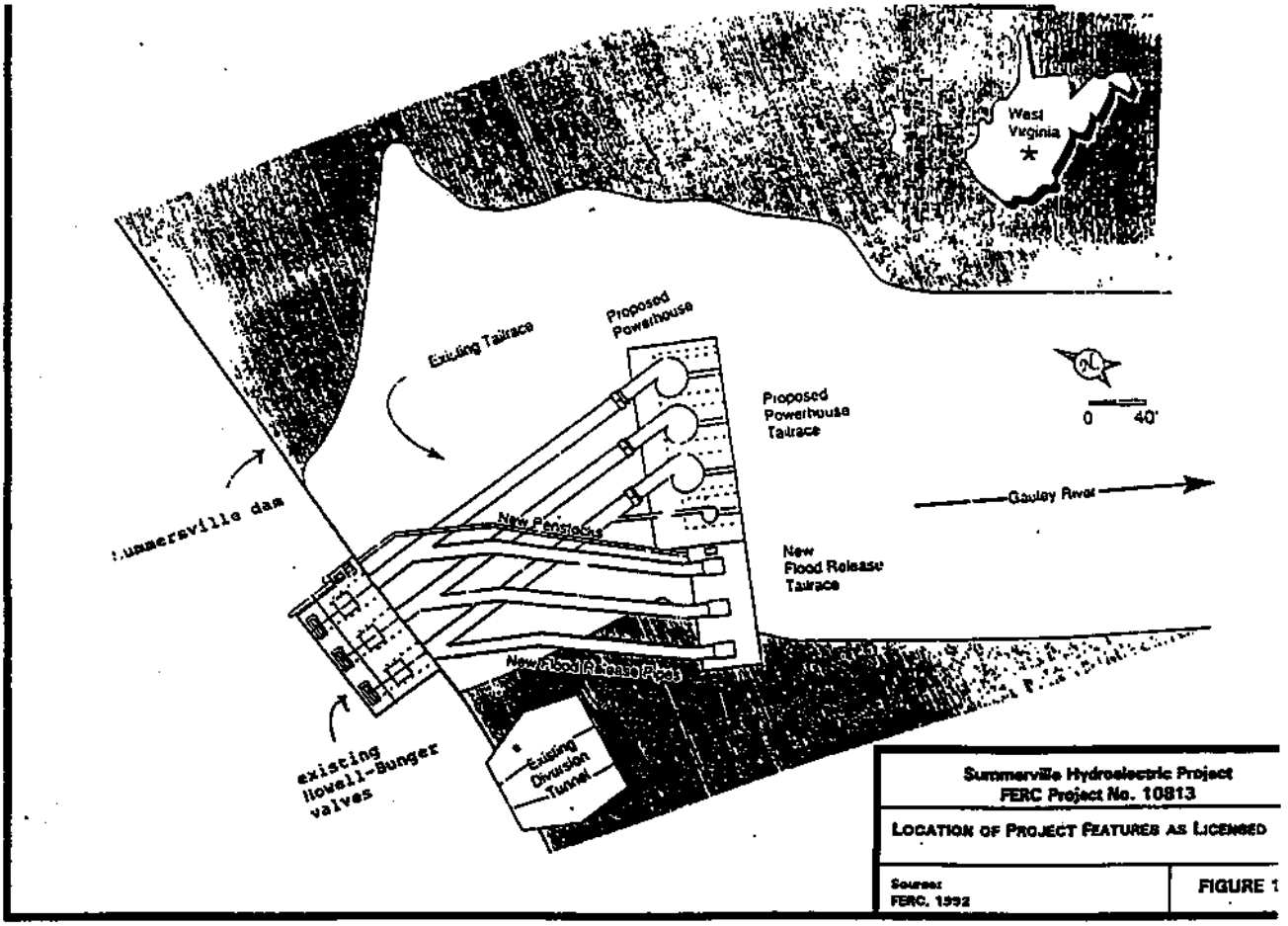
2. Proposed Action

The licensee proposes to relocate the powerhouse from its current licensed location downstream of the dam to the bank of the Gauley River, and to replace the licensed three 24 MW and one 8 MW turbine-generators with two 40 MW turbine-generators. The total installed capacity of 80 MW would remain unchanged. The amended project, if approved, would also include one penstock, 15 feet in diameter, connected to one of the existing outlet conduits; a tailrace; and appurtenant facilities. Figure 1 shows the layout of the licensed project; Figure 2 shows the proposed amended facility.

The licensee proposes to revise the project boundary by replacing the 8-mile-long, 3-phase, 138-Kv transmission line with a 9.9-mile-long, 69-Kv transmission line that would run to the south to connect to the APC's substation. 3/ The maximum width of the transmission line right-of-way would be 80 feet. Where necessary, the licensee proposes to construct the

2/ See 60 FERC ¶ 61,291

3/ The licensee originally proposed a 9.6 mile long transmission line. The licensee filed a revision to this route in July 1996 to address comments from the Poulke Meadow Trust. No new property owners were affected. The specifics of this change are addressed later in this document in Section D.



transmission line with an H-type structure using wooden poles with a crossbar and tension braces of wood or metal. The separation between conductors would be 15 feet, 6 inches; the minimum separation between each conductor and the grounding wire located vertically along each pole would be 7 feet, 9 inches. In areas where it is practicable, the licensee would use single wooden poles to further reduce the right-of-way clearing and visibility. Single poles would be approximately 50 feet tall; double poles would be shorter than the single poles.

The licensee's proposed 9.9 mile transmission line route would start at the powerhouse and run east across the river, up the bank of the river to the top of the ridge where it would turn south across forested property. It would cross this area for approximately 3.2 miles where it would link with Highway 19. It would parallel Highway 19 on the west for approximately 1.5 miles and would then cross Highway 19 near Mt. Lookout Road. From this intersection, the transmission line would travel southeast across a forested area. The transmission line would cross the Meadow River and follow the right-of-way of the Chesapeake and Ohio Railroad for approximately 2.25 miles. It would then turn south to connect to the APC substation. (See Figure 3)

### 3. Action Alternative

No alternatives were identified for the proposed amendment to the powerhouse.

On September 24, 1996, the Mt. Lookout-Mt. Nebo Property Protection Association (Association) filed an alternative route to the proposed transmission line. As with the licensee's proposed route, the Association's route would begin at the powerhouse, cross the river and link with Highway 19. At the Mt. Lookout Road/Highway 19 intersection (where the licensee's proposed route would cross Highway 19 and head into a forested area), the Association's route would continue to follow Highway 19 for another 1.5 miles (a total of 3 miles). The transmission line would cross the Meadow River beneath the Highway 19 bridge and head southeast across a forested area for approximately 2.6 miles until it would turn south to connect to the APC substation. Based on the maps provided by the Association, the transmission line would be approximately 11.2 miles long. (See Figure 3)

### 4. No-action Alternative

Under the no-action alternative, the project would be constructed as authorized and would operate under the terms and conditions of the original license.

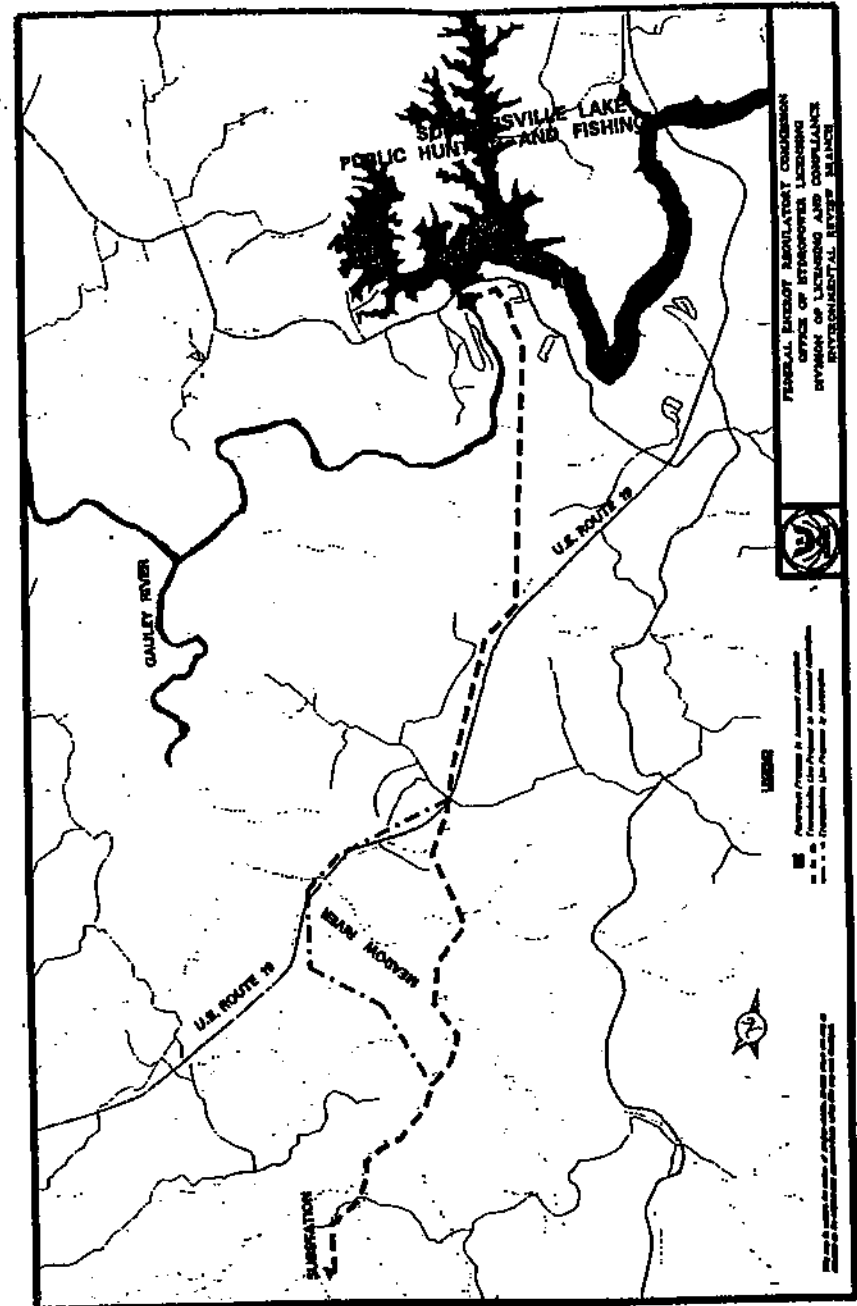


Figure 3

#### D. CONSULTATION AND COMMENTS

The licensee solicited and received comments from the following agencies:

Commenting Entity	Date of Letter
W.V. Division of Natural Resources (WVDNR)	June 13, 1995
W.V. Division of Environmental Protection Office of Water Resources	July 20, 1995
Department of the Interior, Office of Environmental Policy and Compliance	December 15, 1995
National Park Service (NPS)	July 31, 1995 November 2, 1995 March 22, 1996 April 15, 1996 May 22, 1996
U.S. Environmental Protection Agency	August 8, 1995
U.S. Army Corps of Engineers (COE)	August 28, 1995
W.V. Division of Culture and History (WVDCH)	August 30, 1995
U.S. Fish and Wildlife Service (FWS)	November 6, 1995 August 31, 1995

None of the consulted agencies objects to the proposed amendment.

On October 23, 1995, a meeting was held among representatives of the following agencies and organizations: NPS; West Virginia Professional River Outfitters and Class VI River Runners, Inc.; Songer Whitewater, Inc.; North American River Runners; COE; West Virginia Whitewater Association (WVWA); American Whitewater Affiliation (AWA); and the City. The discussion centered on the design of the whitewater boat access. The minutes of this meeting were filed with the Commission on November 27, 1995.

As a result of a meeting with the NPS concerning the siting of the proposed transmission line in the Gauley River National Recreation Area (GRNRA), the licensee relocated portions of the proposed transmission line corridor off NPS land to avoid impacts to the recreation area. The licensee met with the NPS on April 4 and 5, 1996, to further discuss the transmission line route. In a letter dated April 15, 1996 to the Commission staff, the NPS concurred with the route proposed by the licensee in the April 4 meeting and April 5 field visit. This letter also included minutes of the meeting.

In a letter dated August 31, 1995, FWS commented that the proposed transmission line would not have an impact on the federally listed threatened shrub, Virginia spiraea, Spiraea virginiana.

A public notice on the proposed amendment was issued by the Commission on October 12, 1995. Comments were due on December 4, 1995. No comments were received.

The Draft Environmental Assessment was public noticed on April 29, 1996 with a comment date of May 28, 1996. Two comments were received on time. The NPS commented in a letter dated May 22, 1996. All the comments are addressed in the final document.

In a letter dated May 28, 1996, representatives of the Foulke Meadow River Lands Trust (Foulke Trust) filed comments regarding the transmission line crossing their property. Its concerns regard the impact on the Meadow River Gorge (Gorge) and the fact there is an operating deep mine under the Foulke Trust property. The licensee met with the representatives of the Foulke Trust on July 8, 1996 to discuss the transmission line route. The representatives sent the licensee a map of the preferred route. The licensee filed the new route across the Foulke Trust property (approximately 2.25 miles) on July 15, 1996. The revised route, which increased the length of the line 0.3 mile to 9.9 miles, deviated from the licensee's original proposal by a maximum of 500 feet. It follows part of an existing right-of-way for the Chesapeake and Ohio Railroad. <sup>4/</sup>

In a letter dated June 5, 1996, a private citizen, whose property is along the transmission line right-of-way, stated he did not want the transmission line to cross his property. He further stated he was concerned about the aesthetics and endangered species in the area. On August 19, 1996, Jack C. McClung, an attorney, filed a request for late intervention on behalf of himself and the Association.

From June until September 20, 1996, several other property owners commented about the location of the transmission line route and construction of the project. Several property owners commented they did not want the project to be constructed. Other property owners, some of whom are directly impacted by construction of the transmission line on their property and others in the area, filed comments stating they did not want the transmission line constructed across the Gorge. They expressed concern about aesthetic and health issues.

The Commission staff held a public meeting in Summersville, West Virginia during the evening of September 19, to hear comments on the proposed amendment. The notice of the meeting was published in the local newspapers and copies of the notice

<sup>4/</sup> It is this transmission line with the 2.25 mile long realignment across Foulke property that is assessed as the proposed action in this final environmental assessment.

were provided to all affected property owners identified by the licensee in its September 1995 amendment request.

#### E. AFFECTED ENVIRONMENT

The Summersville Hydroelectric Project is located on the Gauley River in Nicholas and Fayette Counties, West Virginia, between Summersville dam and the upper boundary of the GRNRA. <sup>5/</sup> In 1966, the COE constructed Summersville dam as a flood control structure on the Gauley River. The Summersville Hydroelectric Project would use flows released under the dam's current operating schedule.

##### 1. Geology and Soils

The Summersville Project is located in the Appalachian Plateau geologic province. The terrain in the area is rugged and characterized by sharp ridges and narrow v-shaped valleys. Soils on the valley slopes are shallow loam to silty clay loams. Soils in the lower lying areas near stream channels also include well-drained silty loams developed on alluvial deposits. The Gauley River does not have a floodplain in the project area (FERC, 1992).

##### 2. Water Resources

Summersville dam regulates water levels in Summersville reservoir and flows in the Gauley River downstream of the dam. All water (except for rare spillage flows during extreme floods) is released from Summersville Lake to the Gauley River through low-level outlets near the base of Summersville dam. Releases are controlled through Howell-Bunger valves that dissipate energy during the release. Changes in discharge rate are scheduled not to exceed 1,500 cubic feet per second (cfs) per hour or cause changes in water surface elevations downstream of the dam greater than 1 foot per hour. A minimum flow of 100 cfs is provided at all times.

The COE is required to provide 20 days of whitewater rafting flows each year beginning the first weekend after Labor Day. The flow is required for at least five four-day periods which include the weekends. During this period, the project operates by storing water in the reservoir until whitewater releases are required.

<sup>5/</sup> The GRNRA was created under Title II of the West Virginia National Interest River Conservation Act of 1987, Public Law 100-534, 102 Stat. 2699, which was enacted by Congress on October 26, 1988. The boundary of the GRNRA is located 550 feet downstream from the existing valve house. It is administered as a unit of the NPS.

WVDNR designates the Gauley River downstream of Summersville dam as a High Quality Stream and a National Resource Water. National Resource Waters and High Quality Streams are protected by West Virginia's Anti-degradation Policy (FERC, 1992).

The area below the dam to Collision Creek (about 1.8 miles) is classified as Trout Water by the WVDNR. The standard for dissolved oxygen (DO) concentrations immediately downstream of the proposed project is not less than 6.0 milligrams per liter (mg/l) at any time nor less than 7.0 mg/l in spawning areas. For Summersville Lake, the state DO concentration standard is not less than 5.0 mg/l at any time.

COE water samples collected between 1975 and 1988 indicate that DO ranged from 5.8 to 12.2 mg/l upstream of Summersville Lake. Downstream of the dam, DO ranged from 5.9 to 13 mg/l, averaging 9.7 mg/l (FERC, 1992). Water temperature below the dam averaged 60°F (maximum of 68°F) with water released from the hypolimnion of the lake. Aeration of water passing through the Howell-Bunger valves results in near-saturation to super-saturation DO levels such that violations of the state DO standard for the Gauley River rarely occur (FERC, 1992).

##### 3. Fisheries

The Summersville Lake fishery is diverse, primarily due to WVDNR stocking efforts, but the population size is low. Stocked game fish include rainbow, golden, and brook trout. Threadfin shad and brook silversides have been stocked as forage. The lake sustains a warmwater fishery for black bass and crappie. WVDNR is attempting to establish a two-story sport fishery at Summersville Lake by stocking deep water fish, such as lake trout. Other species identified in the lake include walleye, bluegill, channel catfish, and rock bass (FERC, 1992).

The Gauley River supports a diversity of warmwater and coolwater fish species. Thirty-four fish species have been identified in the river including darters, sunfish, minnows, catfish, trout, walleye, and American eel. Releases from the lower levels of the lake provide for continuous cold-to-cool water temperatures (average of 60°F) that enable the establishment of a year-round coldwater fishery for trout and walleye from the dam to the confluence with the Meadow River, approximately 5 miles downstream. WVDNR, through stocking, has established put-and-take trout fisheries downstream of the dam in the Gauley River (FERC, 1992).

##### 4. Terrestrial Resources (Vegetation and Wildlife)

Within the area of the dam and reservoir, locally dominant species vary. Areas cleared for the construction of Summersville dam have been invaded by black locust, pines, sassafras, red

mulberry, staghorn sumac, sourwood, black berry, raspberry, greenbrier, American holly, red cedar, and redbud. The area where the hydro facilities would be located was replanted or invaded by grasses and forbs following dam construction (FERC, 1992). Additional information on the terrestrial resources in the vicinity of Summersville dam and the licensed project works is discussed in Section V.C.4 of the original EA for this project (FERC, 1992).

A majority of the licensee's and Association's transmission line route is forested and undeveloped. There are two major right-of-ways in the area, Highway 19 and the Chesapeake and Ohio Railroad. There are also scattered logging and secondary roads.

The maximum width of the right-of-way would be 80 feet, but it would be narrower where possible. The route primarily traverses oak-hickory forests with several oak species, hickory, elm, and sweetgum the dominant species (Kuchler, 1964). Areas at lower elevations along waterways are dominated by sycamore and birch.

The licensee's and Association's transmission corridor would cross six wetland areas identified on the National Wetland Inventory (NWI) maps including: the Gauley and Meadow Rivers; two small streams, Collison Creek and Glade Creek; a small diked impoundment; and a diked farm pond. Both proposed transmission lines would avoid adversely impacting riverine and palustrine wetlands by spanning them to avoid placing poles in any wetland habitat. The Association's proposed route would cross the Meadow River under the existing Highway 19 bridge.

Typical animal species using the forest area crossed by the proposed transmission line corridor are small mammals and deer. Raptors would be expected to use transmission lines and structures for perches and nest building.

#### 5. Threatened and Endangered Species

There are no known federal or state listed or proposed animal species in the project area (letter from W.A. Tolin, FWS, to James B. Price, Noah Corp., August 31, 1995; letter from J.W. Rawson, WVDNR, to James B. Price, Noah Corp., June 13, 1995).

The project area, including the powerhouse, the licensee's proposed transmission line route and the Association's transmission line route is within the range of the Virginia spiraea (*Spiraea virginiana*), a rare shrub that is a federally listed threatened species known to occur in only 18 locations in five states. This species grows in disturbed habitats along the scoured banks of high gradient streams and in several areas in the vicinity of the proposed transmission corridors along the Gauley River and the Gorge.

#### 6. Land Use and Recreation

The amended project powerhouse would be located on the Gauley River, found eligible for inclusion in the National Wild and Scenic Rivers System in 1983, and considered one of the best whitewater rafting rivers in the United States (FERC, 1992). The most important and unique whitewater boating reach in the Gauley River Basin is the 25-mile section from the base of Summersville dam to the town of Swiss, West Virginia. This stretch is part of the GRNRA, which limits hydropower development to the licensed site of the Summersville Project (FERC, 1992). Whitewater boating contributes an estimated \$35 million annually to the West Virginia economy. There are at least 21 licensed outfitters that offer trips on the river, and an estimated 50,000 people boated the river in the 1995 season.

The Water Resources Act of 1986 (Public Law 99-662) established whitewater recreation as a project purpose of Summersville dam. The Act requires the COE to release a minimum of 2,500 cfs for at least 5 hours per day for 20 days over a six-week period beginning the first weekend after Labor Day.

Land uses in the proposed transmission line corridors include forest, a highway right-of-way, and pasture. Along the licensee's proposed route, about 75 percent of the corridor is forested and the rest is cleared for residential use or pasture. The proposed line would cross one four-lane highway (Highway 19) and one railroad (Chesapeake and Ohio). No residences are located within 200 feet of the corridor.

The licensee's proposed relocated 9.9 mile transmission line corridor route and powerhouse will affect federal (COE) and private property with a total area of 107.3 acres. Of that area, 15.2 acres are federal property (4.0 acres for the transmission line right-of-way and 11.2 for the powerhouse and appurtenant facilities) and 92.1 acres are private property (for the transmission line right-of-way). The licensee's proposed line crosses the Gorge.

The Gorge is used for hiking and other passive recreation. The Meadow River is used for kayaking and canoeing. It is bordered by private property on both sides. The Chesapeake and Ohio Railroad parallels the river on one side the entire length of the Gorge.

Based on review of available information, access into the Gorge is limited and is primarily across private property. The Meadow River in this reach is accessible by descending steep slopes where Highway 19 crosses the river within the GRNRA. Additional informal access is also available from Highway 41 which parallels the river approximately 5 miles upstream of the Highway 19 bridge.

The Association's route would be approximately 11.2 miles long and will affect COE and private property with a total area of approximately 119.2 acres. Of that area, approximately 15.2 acres are federal property and 104 acres are private property (for the transmission line right-of-way). A small portion of the line (less than 1 mile) would affect the GRNRA at the Meadow River.

#### 7. Aesthetics

The amended project powerhouse would be constructed at the base of Summersville dam on the Gauley River. Summersville dam and Summersville Lake dominate views from Route 129, which crosses the dam. The other dominant feature of the surrounding landscape is forest. The river corridor below the dam is within the boundaries of the GRNRA. Between the Summersville dam and the town of Swiss, the river corridor has been preserved in a nearly pristine state. The Gauley River was found to be eligible for inclusion in the National Wild and Scenic Rivers System in 1983, in part, due to its outstanding scenic value (FERC, 1992).

Upon leaving the switchyard, the licensee's rerouted transmission line would pass over the Gauley River immediately below the Summersville Dam. From there it would be visible to recreationists putting in rafts downstream in the GRNRA. For the remainder of the route, the line would pass primarily through undeveloped forested land, along Highway 19, and along an existing railroad right-of-way, although one portion passes through rural agricultural areas that are not heavily populated. The licensee's proposed route would cross the Meadow River in the Gorge and would be visible to recreationists (boaters and hikers). This area is characterized by steep slopes, rock outcroppings, and second growth forest. The Chesapeake and Ohio Railroad parallels the Meadow River in the Gorge. Highway 41 parallels the Meadow River approximately 5 miles upstream of the Highway 19 bridge crossing. The right-of-way of the transmission line would be a maximum width of 80 feet, except for the stretch adjacent to Highway 19 where it would be narrower.

The Association's route would affect the same area at the dam. It would parallel Highway 19 for approximately 3 miles as opposed to 1.5 miles for the licensee's route. The majority of the remaining route is forested. It would cross the Meadow River under the Highway 19 bridge.

The visual landscape of both routes is dominated by second growth timber, a state highway, a railroad, and steep slopes with numerous rock outcroppings.

#### 8. Cultural Resources

There are no known historic or archeological sites within the proposed amended project boundaries including the licensee's proposed transmission line corridor (letter from WVDCH, November 6, 1995; letter from the COE to Noah Corp., August 28, 1995).

No cultural resource surveys have been conducted for the 4.1 miles of the Association's route that differs from the licensee's proposed route. This 4.1 miles consists of 1.5 miles along Highway 19 and 2.6 miles across an area that has been disturbed by logging. Given the area has been disturbed by road construction and logging, it is unlikely construction of the transmission line would impact additional historic properties.

In addition, review of the National Register of Historic Places 1966-1994 indicates that there are no historic properties in either Fayette or Nicholas Counties in the vicinity of the project listed in the National Register of Historic Places which would be impacted by the construction of the transmission line. Should this be the chosen route, cultural resource surveys would have to be conducted prior to construction of the Association's transmission line pursuant to article 408 of the license. This article, in part, requires the licensee to consult with the WVSHPO before starting any land-clearing or land-disturbing activities within the project boundary not authorized in the license.

#### F. ENVIRONMENTAL IMPACTS

##### 1. Proposed Action

##### A. Geology and Soils

Overall, the amount of excavation required for construction of the amended project powerhouse would be less than that anticipated for the licensed project. The amended project would require only one cofferdam for construction of the powerhouse rather than the three-stage cofferdam planned for the licensed project. As a result, impacts on geology and soils, principally erosion and sedimentation, would be less than those expected for the licensed project.

The types of impacts from construction of the licensee's proposed transmission line would be similar to those from the licensed transmission line due to similar topography and vegetative cover. Because the licensee's proposed transmission line is approximately 1.9 miles longer than the licensed transmission line, more ground disturbance would occur.

In the original application for the licensed project, the licensee committed to implementing a Sediment and Erosion Control Plan during construction and operation to minimize turbidity, control erosion and dust, stabilize slopes, and avoid sediments and water pollutants (FERC, 1992). The Sediment and Erosion Control Plan that was required for the licensed project would also be required for the amended project. Implementation of the plan should minimize any of the short-term and temporary impacts that might occur during the construction or operation of the proposed facilities.

#### B. Water Resources

The proposed amendment to the license would not adversely impact current water quality. Under the licensed four-turbine configuration, the minimum and maximum hydraulic turbine capacity of the powerplant are 160 and 4,000 cfs. The amendment would not change the COE's scheduled releases at the dam or the maximum capacity of the project. However, the two larger turbines in the amended project would have higher minimum hydraulic capacity than the licensed 4-unit project. With the two-40 MW units, the minimum hydraulic capacity would be about 640 cfs. Thus, the range of operating flows is approximately 640 to 4,000 cfs.

As the project is currently licensed, at flows up to 160 cfs, the downstream minimum flows are supplied through the Howell-Bunger valves. Under the higher minimum hydraulic capacity of the proposed amended project, flows in the range of 160 to 640 cfs would pass through the Howell-Bunger valves instead of the project's turbines. For both the licensed and proposed amended projects, flows of 640 to 4,000 cfs would pass through the turbine. Water passing through the Howell-Bunger valves would be expected to reach saturated levels of DO.

Under the amended project, with more of the low flows (160 to 640 cfs) passing through the Howell-Bunger valves, we expect DO levels would be closer to saturation and higher than 7 mg/l more often than under the licensed condition. This would have a slightly beneficial effect on overall water quality. The greater oxygenation from the passage through the Howell-Bunger valves would aid in meeting the 7 mg/l required by the Water Quality Certificate and article 404 for the downstream reach of the Gauley River.

The DO monitoring and minimum tailrace DO of 7 mg/l required in article 404 of the existing license would be maintained and would continue to provide suitable DO levels to maintain and enhance fisheries and other aquatic life downstream of the project.

The licensee's proposed transmission line would span the river and stream crossings. As a result, there will be no

impacts to water quality from the licensee's proposed amended transmission line.

#### C. Fisheries

The potential for fish mortality, as a result of project operation, was reviewed in the original license EA. Studies for that document showed the proposed project would reduce passage of entrained fish through the existing Howell-Bunger valves as currently occurs by diverting flows through the project turbines (FERC, 1992). Because no fish survive passage through the Howell-Bunger valves, the licensed project was determined to reduce fish mortality. No fish passage mortality studies were required by the license (FERC, 1992).

The proposed project would be similar to the licensed project in its effects on fish mortality. The two proposed 40 MW turbine generators are likely to have similar mortality effects on entrained fish as the originally licensed 4 units. However, the effect of turbine size on fish survival during turbine passage is complicated by the different hydraulic capacities and expected operating efficiencies of the new units.

As discussed in Section F.1.B. (Water Resources), the new powerhouse would have a minimum hydraulic capacity of about 640 cfs compared to the 160 cfs minimum for the licensed 8 MW unit. Between 160 and 640 cfs, flows would pass through the Howell-Bunger valves instead of the project turbines. Elcher (EPRI, 1992) shows that for Francis turbine <sup>6/</sup> projects with about 250 to 300 feet of head, fish passage mortality is about 30%, compared to the 100% mortality which is likely from passage through the Howell-Bunger valves. Therefore, when flows are in the 160 to 640 cfs range, fish passage mortality rates will be greater with the amended project than with the licensed project. Flows in this range occur between 23 and 41 percent of the time from June to September and 2 to 3 percent in October and November. <sup>7/</sup>

EPRI (1992) also identifies other studies that show lower fish passage mortality at higher turbine efficiency settings. The use of 4 smaller turbines allows the project to operate at higher turbine efficiencies over a greater range of operating flows than is available with the amended project with two-40 MW units. Therefore, under the amended project, fish passage

<sup>6/</sup> Francis turbines would be installed for the licensed project and are also proposed for the amended project.

<sup>7/</sup> These percentages are derived from the supplemental information to the application for license filed March 2, 1990.



mortality is expected to be somewhat greater due to reduced turbine efficiency.

Finally, EPRI (1992) identifies narrow clearance between wicket gates and the leading and trailing edges of the runners as factors that can increase fish passage mortality. The size of wicket gate openings and spacing between the runners would be greater for the amended project than with the smaller units for the licensed project. Therefore, under the amended project, fish passage mortality is expected to be less due to larger clearances.

Important factors in entrainment include the location of the withdrawal, water velocities at the intake, and quantities of flow. In these respects, the design of the licensed project and amended project is equivalent. In the proposed amended project, the two larger units would use similar flows that would be withdrawn from the same location in the impoundment.

Overall, some factors of the amended project powerhouse will increase and some will decrease fish passage mortality from the licensed project. Impacts from the proposed amended project powerhouse would be less than the current situation without the project, where no fish survive passage through the Howell-Bunger valves.

The licensee's proposed transmission line would span the river and stream crossings which would result in no impacts to fisheries.

#### D. Terrestrial Resources

No additional vegetation and wildlife impacts would occur as a result of the proposed changes in the location of the powerhouse. The area that would be affected was previously disturbed from construction of the original dam.

Within the transmission line right-of-way, approximately 75 acres of forest, or 75 percent of its length, would need to be cleared of trees. The alignment proposed for the licensed project would have required the clearing of only 30 acres of forest. The additional 45 acres of clearing would have minor localized impacts on those species dependent on unsegmented forest stands but, given the extensive amount of forest cover in the two-county project area, the overall impact on wildlife would be minimal. Further, some species would benefit by the more diversified habitat associated with the edge habitat created along the periphery of the transmission line corridor.

The proposed transmission line would span wetlands in order to avoid the placement of poles in wetland habitat. As a result, transmission line construction and operation should have no

adverse effect on the wetlands it crosses other than the clearing of trees that could interfere with the line.

License article 405 requires the licensee to revegetate the transmission line right-of-way according to the Transmission Line Management Plan filed in its application for license. As part of the Transmission Line Management Plan required by article 405, the licensee would plant mast-bearing trees along the line and use only mechanical clearing (rather than herbicides) during construction and maintenance. These measures would adequately mitigate any adverse impacts to wildlife habitat in the area resulting from a loss of habitat or displacement during construction activity because of the additional habitat and food sources created by the clearing and new plantings.

Above-ground transmission lines are a potential electrocution hazard to perching raptors unless properly designed (Olendorff et al., 1981). Article 406 of the original license requires the licensee to design and construct the transmission line in accordance with guidelines set forth in "Suggested Practices for Raptor Protection on Power Lines -- the State of the Art in 1981," by the Raptor Research Foundation, Inc. After agency consultation, the licensee was required to file a Transmission Line Design Plan that considers the measures necessary to protect raptors from electrocution hazards. The licensee developed a Transmission Line Design Plan, including raptor protection, approved by the Commission and federal and state agencies (letter to James B. Price, Noah Corp., from FERC, August 9, 1994).

When implemented, the Transmission Line Design Plan would prevent the accidental electrocution of perching raptors. The licensee has not proposed to change the transmission line design from the way it was approved in the license for the double poles. The Transmission Line Design Plan calls for a design of an H-type structure using wooden poles with a crossbar and tension braces of wood or metal. The separation between conductors would be 15 feet, 6 inches; the minimum separation between each conductor and the grounding wire located vertically along each pole would be 7 feet, 9 inches. The licensee has proposed using single poles where practicable. Unless properly designed and constructed, the single pole could be an electrocution hazard to raptors. The licensee has not provided a design for the single pole construction.

#### E. Threatened and Endangered Species

According to WVDNR (letter from J.W. Rawson, Wildlife Resources Section, WVDNR, June 13, 1995) and FWS (letter from W.A. Tolin, FWS, August 31, 1995), the licensed transmission line corridor was in the vicinity of the federally listed threatened plant species, *Virginia spiraea*. This species is found below the

dam on the Gauley River and along the banks of the Meadow River.

Both agencies recommended that plant surveys be conducted. The licensee contracted with WVDNR to perform the surveys in the Gorge, and two small clusters were found. The licensee developed an avoidance plan that FWS approved in a letter dated August 11, 1995. The proposed route would cross the Gorge in only one place, which does not contain the threatened plant. FWS, in its August 31, 1995, letter, believes the construction and maintenance of the powerline in the licensee's proposed corridor location will not adversely affect Virginia spiraea and that no biological assessment or further Section 7 Consultation under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) is required.

Prior to any land clearing or construction of the new transmission line, the licensee plans to notify the FWS so that it can confirm the location and mark the populations of Virginia Spiraea. The transmission line will be placed as far from the populations as possible.

#### E. Land Use and Recreation

The proposed amended powerhouse would not have additional impacts on the planned recreation use of the project because the licensee must comply with mitigation measures required under license article 410. <sup>8/</sup> Article 410 requires the licensee to install a new whitewater raft launching facility and upgrade the access trail to the existing kayak launching area prior to land-disturbing activity. The licensee is also required to install a new restroom and changing facility, picnic tables, and interpretive and informational signage.

In addition, there should be less disturbance of bank fishing and boating activities during construction than would occur for the licensed project because there would be a smaller construction area.

As with the licensed project, the amended project would displace an existing whitewater boating access. In the original application for the project, the licensee proposed replacing the existing whitewater rafting put-in, and improving the existing kayak put-in before beginning project construction (FERC, 1992). In a meeting held on October 23, 1995, among Noah Corp., NPS,

<sup>8/</sup> License article 410 requires the licensee to implement measures contained in a Memorandum of Understanding (MOU) among the NPS, the City of Summersville and Noah Corp. The measures are designed to protect whitewater recreation and other recreational activities during and after project construction.

COE, WVWA, AWA, West Virginia Professional River Outfitters and Class VI River Runners, Inc., Songer Whitewater, Inc., WV PRO, and North American River Runners, Inc., to discuss the amended project, a new access site was identified and the general specifications for construction of the access and ancillary facilities (e.g., footpath, launch ramp) provided (letter from Noah Corp. to the Parties Addressed, November 2, 1995). Provision of the new whitewater rafting put-in and the improvements to the existing kayak put-in, required by article 410, would mitigate the displaced facilities.

The amended transmission line would be visible to recreationists including boaters and hikers in the Gorge, but would not preclude any recreational uses.

The right-of-way for the rerouted transmission corridor would traverse 4.0 acres of federal property (COE) and 92.1 acres of private property. While rerouting the transmission line to connect to the APC substation, the applicant has placed the corridor outside the GRNRA in order to avoid the potential negative visual impacts the overhead transmission lines could have on federally protected park land. As a result, more of the transmission line corridor would be located on private land.

Clearing and construction of the transmission line corridor will preclude certain uses such as forestry or construction of buildings. To minimize the impact, the licensee agreed to reduce the width of the transmission line through private property by using single poles. The licensee further states that the land under the transmission line may be used for pasture or wildlife habitat.

The transmission line route was shifted to follow an existing railroad right-of-way on the Foulke property for approximately 2.25 miles to minimize land-use conflicts, i.e. segmenting the timber lands or siting of poles on the underground mine (letter dated June 17, 1996 from Noah Corporation). <sup>9/</sup> The transmission line would not cause any subsistence problems on the mine. The siting of the poles is flexible so that it should be possible to avoid siting a pole over the mine. In addition, because of the relatively small size of the line, it will not substantially affect the ground above the mine.

#### G. Aesthetics

The proposed powerhouse would adversely affect aesthetic resources within the project area; however, the impact would be

<sup>9/</sup> This 2.25-mile realignment is part of the 9.9-mile-long transmission line being considered as the licensee's proposed route.

considerably less than would have occurred under the licensed project. Under the licensed project, thousands of whitewater boaters who access the river below the dam for recreation would have had unobstructed views of the licensed powerhouse from the whitewater put-in. The less visible amended powerhouse location represents an improvement over the more prominent and highly visible location proposed for the licensed project.

The relocation and reduction in the number of penstocks, from three in the licensed project to one in the amended design, also represents an aesthetic improvement over the licensed design. The reduction in impacts represented by the amended project is consistent with the Department of the Interior's objectives for the GRNRA of preserving and protecting the scenic resources of the lower Gauley (FERC, 1992).

During construction, boaters would also have views of the transmission line construction staging area. These views would be temporary because the sites will be restored and revegetated following completion of construction.

At the project powerhouse where the transmission line would begin and span the Gauley River, recreationists would have a view of the transmission line as it crosses the face of the dam. The licensee will construct the whitewater put-in and kayak access trail downstream of the dam and would plant trees and shrubbery to minimize the visual impacts.

Given that the area is heavily forested, the linear clearing of the transmission line would be noticeable, but the overall visual impact would be minor. The use of wooden poles and the narrowing of the corridor through sensitive areas should minimize the impact, to the extent possible, of the cleared transmission line. Because the poles would be approximately 50 feet tall, they should not be visually obtrusive in an area dominated by second growth timber.

The licensee's proposed transmission line would span the Gorge in an area upstream of the GRNRA. This area is dominated by forested slopes and rock outcroppings. The Chesapeake and Ohio Railroad also runs along the southwest bank of the Meadow River. Highway 19 crosses the river downstream of the licensee's proposed crossing. Approximately 1/2 mile of the transmission line right-of-way will be visible from the Meadow River before it turns northwest at the top of the slope. Boaters will have a view of this corridor only for a brief period as they raft beneath the transmission line. Hikers and fishermen will have a view of the transmission line only along the right-of-way, as this transmission line will not protrude above the existing vegetation. Given that a maximum of 80 feet of the shoreline (out of approximately 5.0 miles of the subject area of the Gorge from Highway 19 to Highway 41) will be cleared for the right-of-

way, the overall landscape character of the Gorge will not be significantly impacted. The licensee plans to minimize the impact by using single wooden poles which would blend with the existing forest and minimize the width of the corridor where practicable.

The construction of the transmission line is not inconsistent with other existing uses in the area such as the railroad, highways, and access roads for mining operations. The licensee has also agreed to place single poles on private property to reduce visual impacts. In addition, the licensee will plant mast-bearing trees along the corridor.

#### H. Cultural Resources

There are no known archeological sites within the COE boundaries that would be affected by the proposed project (letter from COE to Noah Corporation, August 28, 1995). The proposed transmission line was surveyed in September 1995. No archeological sites were located near the proposed route. The West Virginia State Historic Preservation Officer (WVSHPO) stated the project would have no effect on any archeological or historical sites listed on or eligible for inclusion in the National Register of Historic Places (letter from WVDCH to James B. Price, Noah Corp., November 6, 1995). Given that the July 1996 revision 10/ to the transmission line will be along an existing right-of-way which has been disturbed by construction of the railroad and where no archeological resources were found during the September 1995 survey, the revised transmission line route would not impact any historic properties.

License article 408 requires the licensee to consult with the WVSHPO before starting any unauthorized land-clearing or land-disturbing activities within the project boundaries, or in the event that previously unidentified archeological or historic properties were discovered during constructing or developing authorized project works or facilities.

#### I. Electro-magnetic Fields

The proposed relocated 9.9 mile, 69 Kv transmission line corridor (80-foot-wide right-of-way) traverses some residential lands. The closest residence is about 300 feet from the proposed transmission line.

10/ This revision rerouted the proposed transmission line for 2.25 miles across the Foulke Trust property. This is part of the 9.9 mile long transmission line being considered as the licensee's alternative.

Review of the available scientific literature indicates considerable uncertainty concerning whether and how exposure to electromagnetic fields (EMF) might adversely affect human health. The strongest evidence for adverse effects on human health associated with exposure to EMF came from several key epidemiological studies (i.e. Savitz et al. 1988; EPA 1990; London et al. 1991; London et al. 1992; INSERM 1993; and Maryland Department of Natural Resources 1994). In general, these studies showed a statistical association between a surrogate measure of exposure known as "wiring configuration code" and the increased risk of cancer. The wiring configuration code is based on the distance the residence is from the overhead transmission line and the type and physical arrangement of overhead transmission line. Using these parameters, the Commission staff finds the proposed 69 Kv transmission line, located about 300 feet from the nearest residence, would not increase the resident's risk of cancer.

The Commission staff reviewed other Commission licenses regarding transmission lines and EMF. On March 15, 1996, the Commission issued a Final Environmental Assessment and final order concerning a relocated 138 Kv transmission line for the Greenup Project, located in Greenup County, Kentucky and Scioto County, Ohio. 11/ The relocated transmission line is about 310 feet from a house under construction. In the Final EA, Commission staff examined the impacts of the EMF on the residence. The information and findings of this analysis are applicable to the proposed relocated 9.9 mile transmission line.

In the Greenup Project's case regarding the 138 Kv transmission line, Commission staff compared the EMF strengths measured for this line with the EMF strengths allowed by the state standards and found that the exposure levels of the Greenup Project transmission line were considerably lower than state standards. 12/ Given that the proposed Summersville transmission line is only 69 Kv and would employ similar designs, it appears that the proposed line would also produce exposure levels lower than the state standards.

The Commission also compared the EMF strengths typically produced by household appliances and wiring with the measured EMF strengths of the Greenup Project's 138 Kv transmission line at

11/ 74 FERC ¶ 61,293 (1996)

12/ State standards have been developed by eight states for EMF strengths at the edge of transmission line rights-of-way for lines of 230 to 500 Kv. Given that the state standards are not based on the results of any analytical studies, caution must be exercised in attempting to draw any conclusions regarding the relative safety of exposure to EMF based on a comparison of measured fields with state standards.

the subject house 310 feet from the transmission line. The Commission found that the level of exposure at the house is equivalent to the level of exposure most people experience from normal house wiring and electrical appliances. Given the 300-foot distance of the proposed 69 Kv transmission line from the nearest residence at the Summersville Project, the level of exposure at the residence is also expected to be no more than the level of exposure most people experience from normal house wiring and electrical appliances.

The findings of the available scientific literature and the comparison of the Greenup Project's transmission line and the proposed transmission line indicate EMF associated with this proposed transmission line should not adversely affect the health of residents in the area.

## 2. Action Alternative

This section analyzes the impacts of the 11.2 mile long alternate transmission line route identified by the Association.

### A. Geology and Soils

The impacts to geology and soils would be similar to the licensee's proposal. Because the Association's transmission line route crosses the NPS boundary at the Meadow River/Highway 19 Bridge, it is likely that the transmission line may have to be buried to address the visual impacts to federally protected park property. 13/ Given the additional 1.3 miles of this alternative and the possible need to bury a portion of this route, there would be more ground disturbance and hence greater impacts to soils along the approaches to the bridge and the additional 1.3-mile length. While this route may result in additional ground disturbance, the licensee will be required to implement a Sediment and Erosion Control Plan during construction and operation to minimize turbidity, control erosion and dust, stabilize slopes, and avoid sediments and water pollutants. This plan would keep impacts to a minimum.

### B. Water Resources

The Association's alternative would not adversely impact current water quality because the proposed line would span the river and stream crossings. As a result, impacts would be similar to those in the licensee's proposed amendment.

13/ The amount of line which needs to be buried would depend on many factors including safety, West Virginia Department of Transportation standards, and requirements of the NPS. This amount has not been determined.

### C. Fisheries

The Association's alternative would have the same impact on fisheries as the licensee's proposed amendment. The transmission line would span the river and stream crossings which would result in no impacts to fisheries.

### D. Terrestrial Resources

Within the Association's proposed transmission line right-of-way, approximately 77 acres of forest <sup>14/</sup> would need to be cleared of trees for the proposed transmission line. This amount of clearing is minor compared to the extensive forest cover in the vicinity of the project. To mitigate the impacts from clearing, the licensee is required by the Transmission Line Management Plan to plant mast-bearing trees along the line and use only mechanical clearing (rather than herbicides) during construction and maintenance. These measures would adequately mitigate any adverse impacts to wildlife habitat in the area resulting from a loss of habitat or displacement during construction activity. New habitat and food sources would be created by the clearing and plantings.

As with the licensee's proposal, given the extensive amount of forest cover in the two-county project area, the overall impact on wildlife would be minimal. Further, some species would benefit by more diversified habitat associated with the opening of the forest.

The proposed transmission line would span the wetlands in order to avoid the placement of poles in wetland habitat. As a result, transmission line construction and operation should have no adverse effect on the wetlands it crosses.

### E. Threatened and Endangered Species

According to WVDNR (letter from J.W. Rawson, Wildlife Resources Section, WVDNR, June 13, 1995) and FWS (letter from W.A. Tolin, FWS, August 31, 1995), the licensed transmission line corridor was in the vicinity of the federally listed threatened plant species, Virginia spiraea, below the dam on the Gauley River and downstream of the reach of the Meadow River.

While no studies of the Association's proposed transmission line route in the area which deviates from the licensee's proposed route (4.1 miles) have been conducted, it is unlikely

<sup>14/</sup> This acreage is calculated by using 8 miles of transmission line with an 80-foot right-of-way. Approximately 3 miles of the transmission line will parallel Highway 19 and will require only minor clearing.

there would be any new impacts to the Virginia spiraea. This species grows in disturbed habitats along the scoured banks of high gradient streams and in several areas in the vicinity of the proposed transmission corridors along the Gauley River and the Gorge. The Association's proposed route crosses the Meadow River under the Highway 19 Bridge. Given the disturbed area, it is unlikely there would be populations of Virginia spiraea in the area. The licensee would be responsible for conducting studies of the additional area prior to construction of the transmission line to locate any populations. If any are located, the licensee would be required to avoid any populations of Virginia spiraea found in the area.

### F. Land Use and Recreation

Neither the licensee's proposed transmission line nor the Association's alternative would have an impact on planned recreational use of the project. At the project powerhouse where the transmission line would begin and span the Gauley River, recreationists would have a view of the line as it crosses the face of the dam. The licensee will construct the whitewater put-in and kayak access trail downstream of the dam and would plant trees and shrubbery to minimize the visual impacts.

The right-of-way for the Association's transmission corridor would traverse 4.0 acres of federal property (COE) and approximately 104 acres of private property. The Association's proposed route would parallel Highway 19 for approximately 3 miles and would cross the Meadow River under the Highway 19 bridge. This area is within the GRNRA boundary and, pursuant to the MOU contained in article 410 of the license, would need to be approved by the NPS in order to mitigate impacts to the federally protected area.

The Association's proposed transmission line would be under the Highway 19 Bridge. Depending on the manner in which this crossing is constructed, i.e. in a plastic or metal casing, this transmission line would be minimally visible to recreationists in the Gorge.

Clearing and construction of the transmission line corridor will preclude certain uses such as forestry or construction of buildings. To minimize the impact, the licensee has agreed to reduce the width of the transmission line through private property by using single poles on its proposed line. The same conditions would apply to the Association's proposed route. The licensee further states that the land under the transmission line may be used for pasture or wildlife habitat.

Regarding impacts to the Foulke Property, the licensee's transmission line route was shifted to follow an existing railroad right-of-way on the property for approximately 2.25

miles to minimize land-use conflicts, i.e. segmenting the forest lands. The Association's proposed route would cross the Foulke Property for approximately 2.6 miles in a location that would segment the forested area used for logging operations.

#### Q. Aesthetics

During construction, boaters would also have views of the transmission line construction staging area. People travelling along Highway 19 would also have views of the transmission line construction. These views would be temporary because the sites will be restored and revegetated following completion of construction.

At the project powerhouse where the transmission line would begin and span the Gauley River, recreationists would have a view of the line as it crosses the face of the dam. The licensee will construct the whitewater put-in and kayak access trail downstream of the dam and would plant trees and shrubbery to minimize the visual impacts.

The Association's proposed transmission line route would follow an existing right-of-way (Highway 19) for approximately 3 miles. It would cross the Meadow River under the existing Highway 19 bridge and would be less visible to recreationists in the Gorge than the licensee's proposed transmission line route. Depending on the manner in which this crossing is constructed, i.e. in a plastic or metal casing, the transmission line route would be minimally visible to recreationists in the Gorge.

Because the transmission line would parallel Highway 19 for an additional 1.5 miles, it would be more visible to people travelling along this road; however, given the highway represents a dominant visual element, the addition of the transmission line would not significantly alter the view.

The remaining 8.2 miles of the route would be through existing forested areas. Given that the area is heavily forested with second growth timber, the linear clearing of the transmission line would be noticeable, but the overall visual impact would be minor. The use of 50-foot-tall wooden poles and the narrowing of the corridor through sensitive areas should minimize the impact, to the extent possible, of the cleared transmission line. The construction of the transmission line is not inconsistent with the existing uses in the area such as the railroad, highways, and access roads for mining operations. Regardless of the approved route, the licensee proposes to place single poles on private property to reduce visual impacts.

#### H. Cultural Resources

Review of the National Register of Historic Places 1966-1994 indicates that there are no historic properties in either Fayette or Nicholas Counties in the vicinity of the project listed on the National Register which would be impacted by the construction of the transmission line. However, no surveys have been conducted of the 4.1 miles of the Association's proposal which deviates from the licensee's proposal. Of this area, 1.5 miles of the transmission line will parallel Highway 19 in this proposal. The remaining 2.6 miles would cross Foulke Property which is used for logging and has been disturbed through the construction of logging roads and logging operation. Because this area has been disturbed by construction of the highway and logging, it is unlikely there will be any additional impacts to historic properties in the area.

To address cultural resources issues, license article 408 requires the licensee to consult with the WVSHPO before starting any unauthorized land-clearing or land-disturbing activities within the project boundaries, or in the event that previously unidentified archeological or historic properties were discovered during constructing or developing authorized project works or facilities.

#### I. Electro-magnetic Fields

The Association's proposed relocated 11.2 mile, 69 Kv transmission line corridor (80-foot-wide right-of-way) traverses some residential lands. Based on review of the Association's map filed on September 24, 1996, there are no residences within 200 feet of the proposed line. As a result, impacts from EMF associated with this proposed transmission line would be similar to those in the licensee's proposed line and should not adversely affect the health of residents in the area.

#### 3. No-action Alternative

Under the no-action alternative, the amendment would be denied and the project would be constructed and operated under the terms and conditions of the original license. The proposed project was determined economically infeasible by the licensee. Therefore, the licensee is not likely to construct the facility.

The environmental impacts of the licensed project are described in the EA issued in January 1992. A comparison of the impact of the licensed, the licensee's proposed amended, and the

Association's proposed amended project is provided in Section G below. <sup>15/</sup>

G. COMPARISON OF LICENSED PROJECT AND PROPOSED ALTERNATIVES

1. Construction of New Powerhouse

A. Geology and Soils

The amount of excavation required for construction of the amended project would be less than that anticipated for the licensed project. The amended project would require only one cofferdam for construction of the powerhouse rather than the three-stage cofferdam planned for the licensed project.

B. Water Resources

As discussed in Section F. above, under the amended project, DO levels would be closer to saturation and higher than 7 mg/l more often than under the licensed condition. This would have a slightly beneficial effect on overall water quality. The greater oxygenation from passage through the Howell-Bunger valves would aid in meeting the 7 mg/l required by the Water Quality Certificate and by article 404 for the downstream reach of the Gauley River.

C. Fisheries

As discussed in the Fisheries Section F.1.C, some aspects of the proposed project will increase fish passage mortality compared to the licensed project while others will decrease it. Both the licensed project and the proposed amended project would decrease fish passage mortality compared to the existing situation where no fish survive passage through the Howell-Bunger valves.

D. Terrestrial Resources

No additional vegetation and wildlife impacts would occur as a result of the proposed changes in the location of the powerhouse. The area was previously disturbed by the construction of the COE dam.

<sup>15/</sup> Because the Association's proposed amendment concerns only the transmission line route, it will be discussed under the comparison of transmission line routes.

E. Threatened and Endangered Species

Neither the construction of the licensed powerhouse nor the proposed amended powerhouse would impact threatened or endangered species.

F. Land Use and Recreation

As with the licensed project, the amended project would displace an existing whitewater boating access; however, the licensee will replace the existing whitewater rafting put-in and improve the existing kayak put-in before beginning project construction.

In addition, there should be less disturbance of bank fishing and boating activities during construction than would have occurred for the licensed project because there would be a smaller construction area.

G. Aesthetics

The proposed powerhouse would adversely affect aesthetic resources within the project boundary; however, the impact would be considerably less than would have occurred under the licensed project. The licensed powerhouse would be more of a visual impact on the surrounding area because of its larger size and location in the middle of the Gauley River. The less visible amended powerhouse location represents an improvement over the more prominent and highly visible location proposed for the licensed project.

The relocation and reduction in the number of penstocks, from three in the licensed project to one in the amended design, also represents an aesthetic improvement over the licensed design.

H. Cultural Resources

There are no known archeological sites within the COE boundaries that would be affected by the proposed project. As a result, neither the licensed nor proposed amended powerhouse would impact historic properties.

2. Construction of Transmission Line

A. Geology and Soils

The impacts from construction of the licensee's proposed new transmission line and the Association's proposed new line would be similar to those from the licensed transmission line. As a result, the types of impact on geology and soils, principally

erosion and sedimentation, would be similar to those expected for the licensed transmission line. Given both proposed routes are longer than the licensed route, there would be more ground disturbance for the proposed routes. Also, additional ground disturbance would be expected where the Association's route crosses beneath the Highway 19 bridge.

Overall, the licensed transmission line would be marginally environmentally preferable. Given the Association's proposed route is the longest of the three and may need to be buried at the approaches to the Highway 19 Bridge, the licensee's proposed route would be the next best alternative regarding impacts to geology and soils.

#### B. Water Resources

As discussed in sections 1B. and 2B. above, none of the three routes, the licensed or the two proposed routes, would adversely impact current water quality and therefore none is environmentally preferable.

#### C. Fisheries

As discussed in the Fisheries sections above (1C. and 2C.), neither of the three transmission line routes would adversely affect fisheries resources during construction or operation. As a result, none of the routes is environmentally preferable.

#### D. Terrestrial Resources

The licensed 8-mile transmission line right-of-way extended northwest from the powerhouse and would have required approximately 30 acres would be cleared for the transmission line right-of-way, as opposed to 75 acres for the licensee's proposed transmission line corridor and approximately 77 acres for the Association's proposed route. All three routes would span the wetlands in order to avoid the placement of poles in wetland habitat.

Given that the type of impacts for the three routes are essentially the same, the licensed route would be marginally environmentally preferable because it is shorter and would involve less clearing of forested areas. The licensee's proposed route would be the next best alternative because of its length.

#### E. Threatened and Endangered Species

Impacts to threatened and endangered species would be similar in the licensed and both proposed amended transmission line. In all cases, the licensee plans to avoid the federally listed threatened plant species, *Virginia spiraea*, known to exist below the dam on the Gauley River and downstream of the reach of

the Meadow River. As a result, neither the licensed route nor either of the proposed revisions is environmentally preferable over the other.

#### F. Land Use and Recreation

The Summersville license requires the licensee to mitigate impacts to recreation prior to construction of the project facilities to avoid impacts to boaters on the Gauley River. This mitigation includes planting of trees and shrubbery to minimize the visual impacts on recreationists of the transmission line crossing the face of the dam.

Construction of the transmission line routes would not preclude any recreational uses of the area; however, the licensee's proposed transmission line would be visible to boaters, hikers and other recreationists in the Gorge. The Association's route minimizes impacts to recreationists using the Meadow River by crossing under the Highway 19 Bridge.

The licensed route and licensee's proposed route are outside the GRNRA boundaries. The Association's alternative crosses the GRNRA at the Highway 19 Bridge.

The licensed route would impact use of the forest land less than either the licensee's amendment proposal or the Association's alternative, both of which primarily cross forest. While neither the licensee's proposal nor the Association's alternative would significantly conflict with forest practices, the licensed route is marginally preferable because it will be shorter and involve less clearing.

#### G. Aesthetics

The licensed, the licensee's proposed, and the Association's alternative transmission lines would adversely affect aesthetic resources within the project area.

The licensed route would have the least impact because it is shorter and stays within the COE property boundaries for nearly its entire length. The majority of the COE property through which the licensed line would pass is not an area heavily used by recreationists and does not contain a lot of residential property. As a result, the transmission line in this section would avoid areas where it would be visible to most residents and recreationists.

The overall aesthetic impacts of the licensee's proposal and the Association's alternative are similar. The Association's alternative avoids crossing the Meadow River using a new right-of-way as the licensee's does, but is longer. In addition, more of the Association's alternative would be constructed more along



Highway 19, including the approaches to the bridge across the Meadow River, which is within the GRNRA. As a result, the Association's alternative may be visible to more people than the crossing proposed by the licensee; however, given that the highway is the dominant feature in the area, this is not a significant impact.

The licensee's route will be visible to recreationists in the Gorge. Based on a review of the available maps, there are no other existing right-of-ways (i.e. transmission lines or pipeline corridors) crossing the subject area of the Gorge. As a result, the licensee's proposed line will introduce a man-made intrusion in the area. Approximately 1/2 mile of the transmission line corridor will be visible to boaters and fishermen along the northern slope of the Gorge. Boaters will have a view of this corridor only for a brief period as they raft beneath the transmission line. Hikers and fishermen will have a view of the transmission line only along the right-of-way, as this transmission line will not protrude above the existing vegetation. Given that a maximum of 80 feet of the shoreline (out of approximately 5.0 miles of the subject area of the Gorge from Highway 19 to Highway 41) will be cleared for the right-of-way, the overall landscape character of the Gorge will not be significantly impacted.

#### H. Cultural Resources

Neither the licensed transmission line, the licensee's proposed amendment, nor the Association's alternative impact historic properties. As a result, none of the three routes is environmentally preferable.

#### I. Economic Comparison

Under the current license, the project's total cost estimate was about \$60,680,000 (1991 \$). The project's annual generation estimate was about 198.0 Gigawatt hours (GWh). Under the proposed amendment, the reconfigured project would cost about \$35,854,000 (1995 \$) and would generate about 205.0 Gwh of energy annually. The reduction in cost estimate is due to the major reduction in the size of the powerhouse and its associated civil works, and the number of turbines and generators from four to two. The licensee states that this reduction in project cost would make the project economically feasible under current low power market values.

The licensee's preliminary cost estimate for the proposed transmission line in the amendment is about \$200,000 to \$250,000 per mile. This amount includes the cost of the conductors, insulators, supporting poles, and right-of-way easements. The transmission line route proposed by the licensee is about 9.9 miles long. An alternative route proposed by the Mt. Nebo/Mt.

Lookout Association would extend the transmission line length about 1.3 miles. This alternative route would increase the total cost of the line by about \$260,000 to \$325,000.

Furthermore, because the licensee may need to cross under the Highway 19 Bridge and bury a portion of the Association's proposed transmission line route to avoid impacts to the GRNRA, costs for this route would increase.

#### G. ISSUES AND RECOMMENDATIONS

##### 1. Transmission Line Plan

Article 406 of the original license requires the licensee to design and construct the transmission line in accordance with guidelines set forth in "Suggested Practices for Raptor Protection on Power Lines -- the State of the Art in 1981," by the Raptor Research Foundation, Inc. The licensee developed a Transmission Line Design Plan, including raptor protection, which was approved by the Commission and federal and state agencies (letter to James B. Price, Noah Corp., from FERC, August 9, 1994). This plan was designed for the proposed double poles with an H-type structure using wooden poles with a crossbar and tension braces of wood or metal. Because the licensee is proposing to revise its pole design to single poles on private property or other areas where feasible, the Commission staff recommends the licensee file, for Commission approval, a transmission line design plan, including raptor protection, for the single poles.

##### 2. Virginia Spiraea Avoidance Plan

Both proposed transmission line corridors are in the vicinity of a federally listed threatened plant species, Virginia spiraea, below the dam on the Gauley River and downstream on the reach of the Meadow River.

The licensee developed an avoidance plan that FWS approved in a letter dated August 11, 1995. This plan states the licensee will contact the FWS prior to construction activity to confirm the location and mark the populations of Virginia spiraea. The line will be placed as far from the populations as practical. The proposed route would cross the gorge in only one place, which does not contain the threatened plant. To ensure that the Virginia spiraea would not be impacted by the construction and maintenance of the powerline, the Commission staff recommends the licensee implement its avoidance plan in the construction of the licensed, the licensee's, or the Association's proposed transmission line.

#### H. CONCLUSION

Based on information provided by resource agencies, the licensee, and the Association, we conclude that approval of either the licensee's amendment proposal, or its amendment proposal as modified by the Association's alternative, would not significantly impact the environment.

The proposed redesign and relocation of the project powerhouse would decrease the overall impacts of construction at the dam by reducing the size of the facility and siting it on the shore instead of in the middle of the river.

The impacts of the licensed, the licensee's proposed transmission line route and the Association's are similar. However, since the licensed route is not economically feasible, we will base our conclusion on a review of the licensee's and the Association's proposed routes.

In general, both would have minor adverse impacts on soils, vegetation, wildlife, land use and aesthetics and no impacts on human health, water quality, fisheries, and cultural resources. Our review of the routes did not identify any resources that would be significantly impacted. Since the environments and kinds of impacts associated with the two routes are so similar, we believe that the preferred route is the shorter of the two, or the licensee's proposal. By constructing the licensee's proposed route, short-term and long-term impacts of the project's transmission line would be reduced by approximately 12 percent. Further, the shorter route would be less costly to construct.

In addition, the licensee's proposal to develop additional recreational facilities and to implement the sediment and erosion control plan, transmission line management plan, and transmission line design plan will adequately mitigate any impacts. In addition, we are recommending the licensee file a transmission line design plan for the single poles and implement its plan to avoid any populations of *Virginia spiraea* during construction of the transmission line. We, therefore, recommend that the licensee for the Summersville Hydroelectric Project be amended with the Commission staff's additional requirements, and conclude that approval of the proposed amendment would not constitute a major federal action significantly affecting the quality of the human environment.

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