



LOW IMPACT HYDROPOWER INSTITUTE RECERTIFICATION APPLICATION

SUMMERSVILLE HYDROELECTRIC PROJECT (Certificate #17, FERC No. P-10813)

Submitted by:
Gauley River Power Partners, LLC

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List of Acronyms

ACOE – US Army Corps of Engineers

APCO – Appalachian Power Company

FERC – Federal Energy Regulatory Commission

GRNRA – Gauley River National Recreation Area

GRPP – Gauley River Power Partners, Inc.

HBV – Howell-Bunger valve

MOU – Memorandum of Understanding

USFWS – United States Fish and Wildlife Service

WVDNR – West Virginia Department of Environmental Protection – Division of Natural Resources

WVDCH – West Virginia Division of Culture and History

Facility Description

<i>Item</i>	<i>Information Requested</i>	<i>Response (and reference to further details)</i>
Name of the Facility	Facility name (use FERC project name or other legal name)	Summersville Hydroelectric Project
Location	River name (USGS proper name)	Gauley River
	Watershed name (select region, click on the area of interest until the 8-digit HUC number appears. Then identify watershed name and HUC-8 number from the map at: https://water.usgs.gov/wsc/map_index.html)	05050005 - Gauley
	Nearest town(s), county(ies), and state(s) to dam	City of Summersville, Nicholas County, West Virginia
	River mile of dam	River Mile 35.7
	Geographic latitude of dam	38.21917
	Geographic longitude of dam	-80.890568
Facility Owner	Application contact names (Complete the Contact Form in Section B-4 also):	Elise Anderson, <i>Sr. Environmental Permitting Specialist</i> Enel North America
	Facility owner company and authorized owner representative name. For recertifications: If ownership has changed since last certification, provide the date of the change.	Gauley River Power Partners, LLC Beth Harris, Southeast Operations Manager (No Change since previous certification)
	FERC licensee company name (if different from owner)	City of Summersville, WV
Regulatory Status	FERC Project Number (e.g., P-xxxxx), issuance and expiration dates, or date of exemption	P-10813 9/25/1992 – 9/1/2042
	FERC license type (major, minor, exemption) or special classification (e.g., "qualified conduit", "non-jurisdictional")	Major License

<i>Item</i>	<i>Information Requested</i>	<i>Response (and reference to further details)</i>
	Water Quality Certificate identifier, issuance date, and issuing agency name. Include information on amendments.	97.0190 A8; Issued 9/18/1991; State of West Virginia Department of Commerce, Labor and Environmental Resources, Division of Natural Resources. (Appendix 2.1) Amended: 1997 (Appendix 2.2)
	Hyperlinks to key electronic records on FERC e-library website or other publicly accessible data repositories ¹	Order Issuing License (1992) (Appendix 1.1-1.3) Order Modifying and Approving Dissolved Oxygen Monitoring Plan (1996) (Appendix 2.3) Order Approving City of Summerville Request for Relief of Endangered Species Monitoring Plan (1998) Final Draft of the Operating Agreement in compliance with Article 308 (2003) (Appendix 1.4)
Powerhouse	Date of initial operation (past or future for pre-operational applications)	Commercial Operation: July 29, 2001.
	Total installed capacity (MW) For recertifications: Indicate if installed capacity has changed since last certification	80 MW No change since last certification.
	Average annual generation (MWh) and period of record used For recertifications: Indicate if average annual generation has changed since last certification	206,000 MWh (2002-2011) No change since last certification.
	<u>Mode of operation</u> (run-of-river, peaking, pulsing, seasonal storage, diversion, etc.) For recertifications: Indicate if mode of operation has changed since last certification	Run-of-river, per the US ACOE release schedule. No change since last certification.

¹ For example, the FERC license or exemption, recent FERC Orders, Water Quality Certificates, Endangered Species Act documents, Special Use Permits from the U.S. Forest Service, 3rd-party agreements about water or land management, grants of right-of-way, U.S. Army Corps of Engineers permits, and other regulatory documents. If extensive, the list of hyperlinks can be provided separately in the application.

Item	Information Requested	Response (and reference to further details)
	Number, type, and size of turbines, including maximum and minimum hydraulic capacity of each unit	(2) vertical Francis turbines, 40 MW each, 80 MW total. Each of the turbines has the capacity to discharge flows of approximately 600 to 2,300 cfs when operated individually, depending on the lake elevation. Jointly, the turbines have a combined discharge capacity of up to 4,300 cfs. The two turbines will regulate their discharges via adjustable wicket gates.
	Trashrack clear spacing (inches), for each trashrack	N/A
	Dates and types of major equipment upgrades	N/A
	Dates, purpose, and type of any recent operational changes	N/A
	Plans, authorization, and regulatory activities for any facility upgrades or license or exemption amendments	N/A
Dam or Diversion	Date of original construction and description and dates of subsequent dam or diversion structure modifications	1967, U.S. Army Flood Control Dam (Not part of the FERC Project Boundary or Project Structures)
	Dam or diversion structure height including separately, the height of any flashboards, inflatable dams, etc.	393 feet high, no flashboards.
	Spillway elevation and hydraulic capacity	N/A
	Tailwater elevation (provide normal range if available)	Normal range: 1368-1356.5 ft. NGVD29.
	Length and type of all penstocks and water conveyance structures between the impoundment and powerhouse	The penstock is approximately 62 feet long and 15-foot-diameter.
	Dates and types of major infrastructure changes	N/A
	Designated facility purposes (e.g., power, navigation, flood control, water supply, etc.)	Flood Control, Power, Recreation, Flow Augmentation
	Source water	Summersville Reservoir
	Receiving water and location of discharge	Gauley River
Conduit	Date of conduit construction and primary purpose of conduit	N/A

<i>Item</i>	<i>Information Requested</i>	<i>Response (and reference to further details)</i>
Impoundment and Watershed	Authorized maximum and minimum water surface elevations For recertifications: Indicate if these values have changed since last certification	As operated by the ACOE, the dam regulates water levels in the reservoir and downstream flows. The Summersville hydroelectric project generates power with the excess flows provided by ACOE and thus has no control over reservoir water levels or any usable storage capacity that can be used for power generation. GRPP therefore has no authorized max and min elevations. No change since last certification.
	Normal operating elevations and normal fluctuation range For recertifications: Indicate if these values have changed since last certification	Summer elevation 1652 feet NGVD29 Winter elevation 1575 feet NGVD29 No change since last certification.
	Gross storage volume and surface area at full pool For recertifications: Indicate if these values have changed since last certification	<ul style="list-style-type: none"> • ACoE Summersville dam has 168,700 acre-ft of gross storage between minimum and summer pool. • The minimum pool storage volume is 514 acre-ft. • The maximum pool storage volume (during flood conditions) is 4,820 acre-ft. No change since last certification.
	Usable storage volume and surface area For recertifications: Indicate if these values have changed since last certification	The hydroelectric plant has no control over reservoir elevation and thus has no usable storage volume for power generation. No change since last certification.
	Describe requirements related to impoundment inflow, outflow, up/down ramping and refill rate restrictions.	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.
	Upstream dams by name, ownership and river mile. If FERC licensed or exempt, please provide FERC Project number of these dams. Indicate which upstream dams have downstream fish passage.	N/A – Project does not control upstream reservoir therefore upstream dams have no bearing upon the Summersville Project's attainment of LIHI standards.

<i>Item</i>	<i>Information Requested</i>	<i>Response (and reference to further details)</i>
	Downstream dams by name, ownership, river mile and FERC number if FERC licensed or exempt. Indicate which downstream dams have upstream fish passage	Glen Ferris Project (P-14439), Hawks Nest Hydro LLC, Kanawha River, River Mile 77. ² No upstream fish passage. ³ London/Marmet (P-1175), (ACOE Dams and Locks) ⁴ , Appalachian Power Company, Kanawha River, River mile 82.8 (London Development) and River mile 67.2. (See Picture 3 for location map)
	Operating agreements with upstream or downstream facilities that affect water availability and facility operation	Operating Agreement – (10/1/2001) (Appendix 1.4) As required by the Project’s License, Article 308, the Project Licensee, the City of Summersville, West Virginia has a Memorandum of Agreement with the United States of America, acting by and through the Department of the Army, Corps of Engineers for the operation of the Summersville Hydroelectric Project.
	Area of land (acres) and area of water (acres) inside FERC project boundary or under facility control.	Powerhouse = >1 acre, Dam= ~1 acre
Hydrologic Setting	Average annual flow at the dam, and period of record used	1,992 cfs (1967-2002)

² Hawks Nest P-2512 and Glen Ferris P-14439 Final EA

<https://www.ferc.gov/industries/hydropower/enviro/eis/2017/P-14439-EA.pdf>

³ FERC did not recommend requiring Hawks Nest Hydro to consider provisions for fish passage at the projects given the current lack of native migratory fish populations in the immediate vicinity of the projects.

⁴⁴ 145 FERC ¶ 62,218, Appalachian Power Company Project No. 1175-015, ORDER ISSUING NEW LICENSE, (December 20, 2013). No fishway prescriptions or reservations of authority were filed under section 18 of the FPA.

<i>Item</i>	<i>Information Requested</i>	<i>Response (and reference to further details)</i>	
	Average monthly flows and period of record used	Mean of Monthly Discharge (cfs) 1966-2003	
		January	2760
		February	2850
		March	3180
		April	1340
		May	2280
		June	1460
		July	1070
		August	1120
		September	1250
		October	1770
		November	2550
		December	2540
	Location and name of closest stream gauging stations above and below the facility	Above – USGS 03189100 GAULEY RIVER NEAR CRAIGSVILLE, WV Below – USGS 03189600 GAULEY RIVER BELOW SUMMERSVILLE DAM, WV	
	Watershed area at the dam (in square miles). Identify if this value is prorated and provide the basis for proration.	803 Square Miles	
Designated Zones of Effect	Number of zones of effect	1	
	Upstream and downstream locations by river miles	<u>Upstream End of Zone 1</u> – Summersville Dam at RM 35.7 <u>Downstream End of Zone 1</u> – Top of Glen Ferris Reservoir, just below the confluence of the New and Gauley Rivers.	
	Type of waterbody (river, impoundment, bypassed reach, etc.)	Zone 1 – Gauley River, Tailwater	
	Delimiting structures or features	Summersville Dam (delimiting structure)	

Item	Information Requested	Response (and reference to further details)
	Designated uses by state water quality agency	The Gauley River is a high quality stream within the National Recreation Area boundary and the WVDNR designates it for water quality purposes as a National Resource Water subject to the West Virginia's anti-degradation policy. Summersville Lake is on the Section 303(d) impaired waters list for methylmercury. ⁵
Pre-Operational Facilities		
Expected operational date	Date generation is expected to begin	N/A
Dam, diversion structure or conduit modification	Description of modifications made to a pre-existing conduit, dam or diversion structure needed to accommodate facility generation. This includes installation of flashboards or raising the flashboard height. Date the modification is expected to be completed	N/A
Change in water flow regime	Description of any change in impoundment levels, water flows or operations required for new generation	N/A

⁵ See

https://dep.wv.gov/WWE/watershed/IR/Documents/IR_2016_Documents/USEPA_Approved_IR_303d_Complete%20Document.pdf

The Summersville Hydroelectric Project, FERC Project No. 10813

Project Location and Overview

The Summersville Hydroelectric Project (Project) is located on the Gauley River, in Nicholas County and Fayette Counties, West Virginia and is five miles south of the City of Summersville. The project is located between Summersville dam and the upper boundary of the Gauley River National Recreation Area (GRNRA). The terrain is rugged and characterized by sharp ridges and narrow v-shaped valleys. The Gauley River does not have a floodplain in the project area.⁶

The project is located on land owned by the ACOE at their Summersville dam. The project reservoir is Summersville Lake, which the ACOE manages for flood control, low-flow augmentation and recreation.

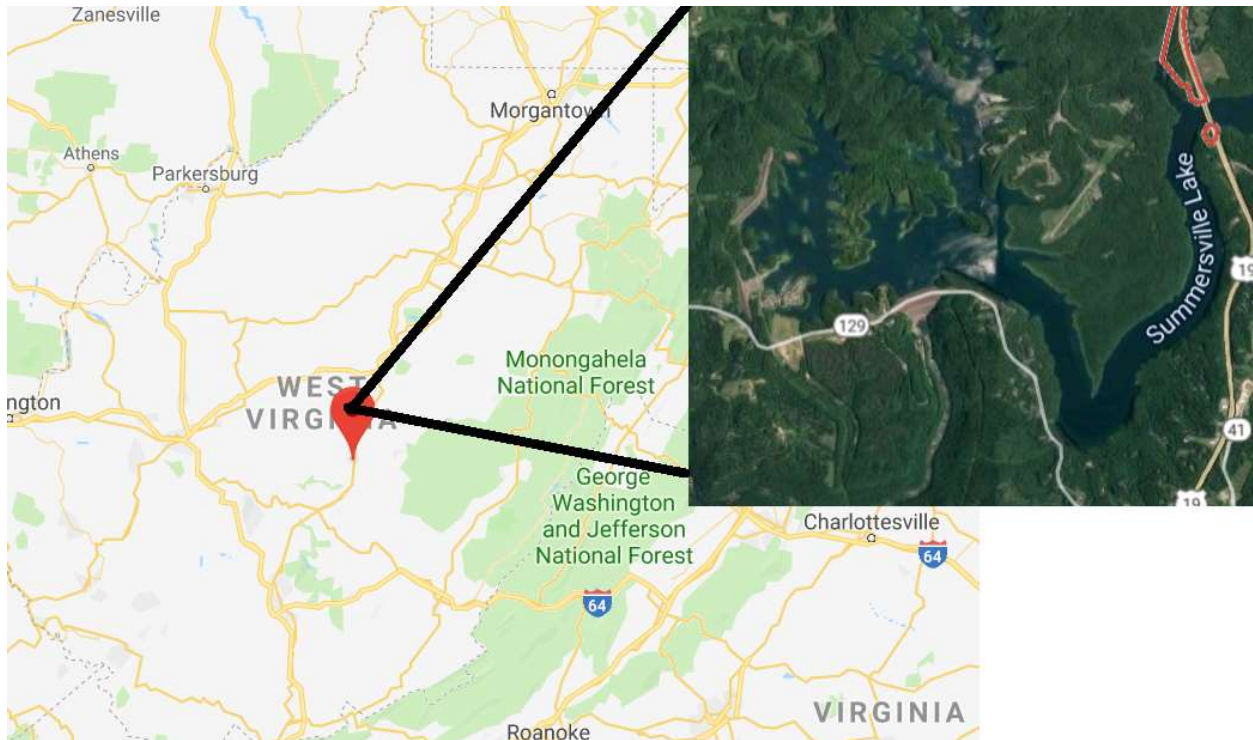
Project structures include a powerhouse with two 40-MW hydroelectric turbine-generators for a total installed capacity of 80 MW, a substation and a transmission line. The powerhouse and substation are located on the right riverbank, downstream of the dam. The transmission line extends across the downstream side of the dam. The project's powerhouse connects to the ACOE's discharge tunnel via a penstock.

Project operation is entirely dependent upon the ACOEs' operation of the dam and the hydro project is in effect, run-of-the-river – generating power only with the flows that the ACOE releases. Hydroelectric project operations are coordinated with the ACOE on a day-to-day and hour-by-hour basis. When water release rates are sufficient, the project generates electricity.

Summersville Lake has a surface area that varies seasonally between 928 acres (winter) and 4,280 acres (summer). The minimum (winter) pool of 928 surface-acres has a surface elevation of 1,575 feet NGVD29. The seasonal (summer) pool of 2,790 surface-acres has a surface elevation of 1,652 feet NGVD29. In the fall, the ACOE lowers the reservoir level in anticipation of heavy snows and rain in the winter and spring months. Recreational boaters raft and kayak down the river, especially during the fall draw down period.

⁶ FERC. 1992. Environmental Assessment for Hydropower License, Summersville Hydroelectric Project, West Virginia. January 10, 1992.

Picture 1 – Project Location



Dam

The Summersville Dam (Dam) was built by the federal government in 1967 and is operated by the ACOE for several purposes: flood control, low flow augmentation, lake recreation and fishing, enhancement of fish and wildlife, fishing in the river below the dam and whitewater rafting on the Gauley River. The dam is the largest rolled-earth dam east of the Mississippi River, at 393 feet high and 2,280 feet long. The dam forms Summersville Lake (the reservoir), which is the largest lake in the state of West Virginia. It was originally constructed in conjunction with two other dams in order to coordinate control of flood waters in the Kanawha basin, a 12,300-square-mile area located across three states. These dams operate as a system which control flows into the Ohio River.

Intake & Penstocks

Project works consist of a 15-foot-diameter penstock connected to one of the existing outlet conduits from the Corps' Summersville Dam which is approximately 62 feet long. (**Appendix 1.1-1.3**)

Powerhouse

The powerhouse contains two 40-MW turbine-generator units, for a total installed capacity of 80 MW. Water is discharged into a tailrace, the Gauley River. A step-up transformer is located adjacent to the powerhouse and the 9.9-mile long 69 kV transmission line connects the project to the APCo facilities via an interconnection point.

Tailrace

Flow is discharged through the project as directed by the ACOE per License Articles 309 and 402 and the Operating Plan. The project is reviewed annually and, over time, has been refined to operate at water flows between 600 and 4,300 cfs. Flows within this range are released through one or both of the turbines. Flows below 600 cfs are controlled by the ACOE and released through one or more of the HBVs, as are flows in excess of the (up to) 4,300 cfs released through the turbines. The operating mechanisms for the turbines are controlled automatically, with operations monitored remotely. The controls ensure that flows in the river are automatically maintained in the event of an unscheduled turbine shut down. The ACOE's operational control of the dam and the flows released from the dam are not altered or adversely impacted by implementation and operation of the hydroelectric project.

Regulatory Status

The Federal Energy Regulatory Commission (FERC) issued a 50-year license to the City on September 25, 1992 to develop, finance, construct, own, and operate the 80-megawatt (MW) project. On September 25, 1995, the City (concerned about project economics) filed a license amendment for an economical project that reduced the size of the powerhouse and associated equipment and modified the route of the transmission lines to transmit power to Appalachian Power Company (APCo) for purchase (**Appendix 1.2**). The amendment did not affect project capacity. FERC subsequently issued a "Notice of Availability of Final Environmental Assessment" on October 17, 1996; an "Order Amending License, Revising Annual Charges, and Lifting Stay" on October, 18, 1996; an "Order Amending License" on November 5, 1999; and an "Order Approving As-Built Transmission Line Drawing Under Article 315" on October 17, 2001.

Material Changes since Last Certification

The enclosed application is to recertify the facility as low-impact. There have been no changes in facilities, structures, operations or changes in facility requirements, obligations or agreements since the last LIHI recertification in 2014. The current certificate term expired November 10, 2019 and was extended to April 30, 2020.

There were two conditions attached to the current LIHI certification. The first condition stipulated that GRPP provide LIHI with an electronic copy of the Revised Form 80 on recreational uses of the river. On December 18, 2018, FERC eliminated the requirement for hydroelectric project licensee to file Form 80. This condition was marked as satisfied in 2017.

The second condition stipulated that GRPP provide a status update on DO deficiencies and associated FERC filings along with the annual compliance letter to LIHI. These status updates contain copies of pertinent correspondence and documents, including explanations and remediation actions related to any DO deficiencies that have happened in the past year. GRPP

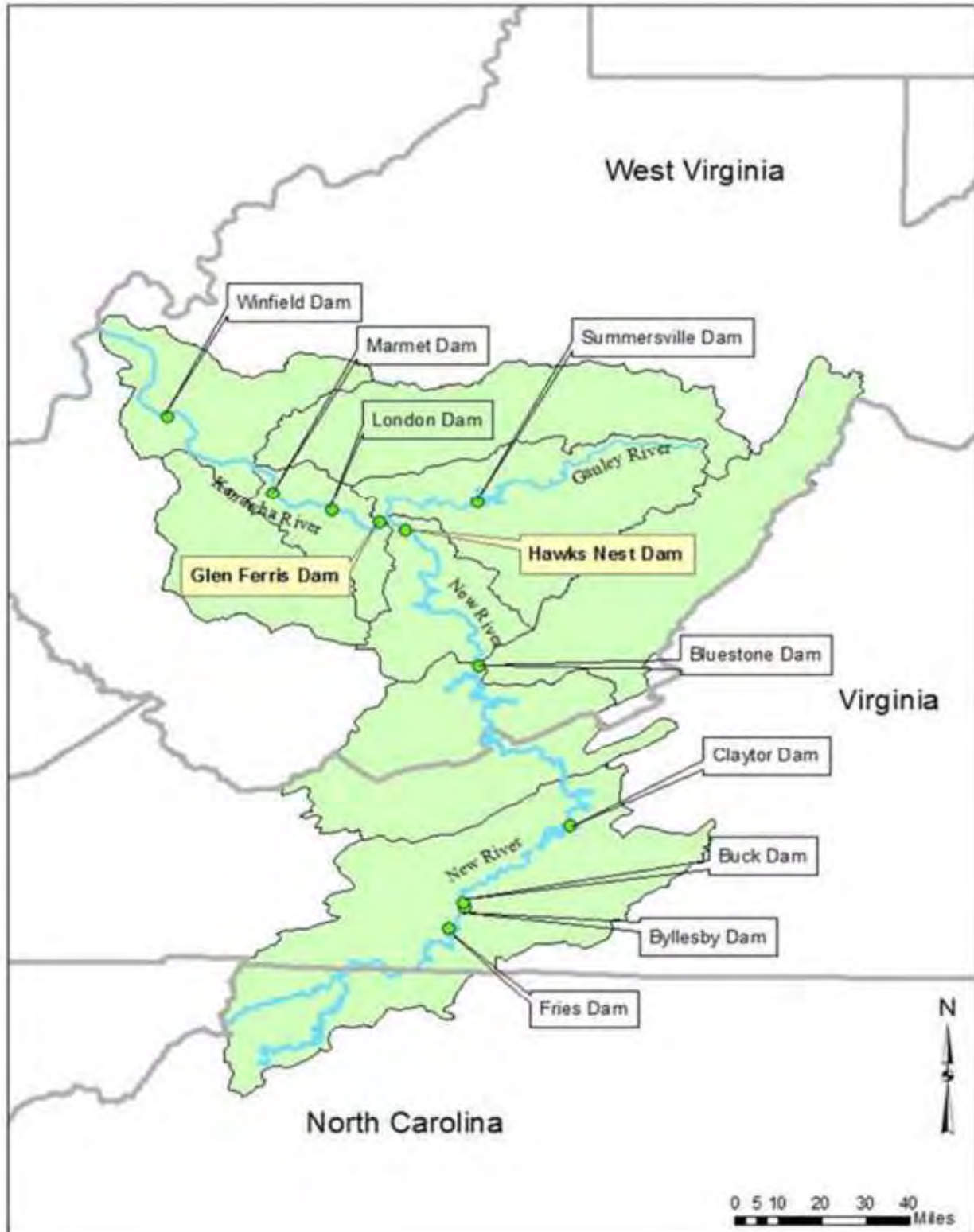
files an annual report with FERC on DO levels per the requirements of the Project water quality certification and provides copies to LIHI with the annual certification fees.⁷

Picture 2 – Overview of Project Structures



⁷ Annual report of downstream dissolved oxygen (DO) monitoring and mitigation of Gauley River Power Partners, LLC under P-10813, for the Summersville Hydroelectric Project. (1/28/2019)
http://elibrary.ferc.gov:0/idmws/doc_info.asp?document_id=14739688

Picture 3 – Locations and names of Downstream Dams (Source: FERC)



Part 2 – Standards Matrices

For this Low Impact Hydro recertification application, the Project area has only one zone of effect, which is project tailrace, the Gauley River downstream of the powerhouse. The Project does not control the upstream reservoir and therefore does not affect the reservoir, so the reservoir is not considered a zone of effect for the purposes of this application.

2.1 Zone of Effect 1 – Gauley River

The standards applicable to each criterion for Zone 1 are summarized in Table 1 and described below.

Table 1 – Zone of Effect 1 – Matrix of Standards

Criterion		<i>Alternative Standards</i>				
		<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>Plus</i>
A	Ecological Flow Regimes	X				
B	Water Quality		X			
C	Upstream Fish Passage	X				
D	Downstream Fish Passage	X				
E	Watershed and Shoreline Protection	X				
F	Threatened and Endangered Species Protection			X		
G	Cultural and Historic Resources Protection	X				
H	Recreational Resources		X			

2.1.1 Ecological Flow Standards

Criterion	Standard	Instructions
A	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none">• Confirm the location of the powerhouse relative to dam/diversion structures and demonstrate that there are no bypassed reaches at the facility.• For run-of-river facilities, provide details on operations and demonstrate that flows, water levels, and operation are monitored to ensure such an operational mode is maintained. If deviations from required flows have occurred, discuss them and the measures taken to minimize reoccurrence.

As described in the Final EA⁸, all water (except for rare spillage flows during extreme floods) is released from the Summersville Lake to the Gauley River through low-level outlets near the base of the dam. Releases to the Gauley River are controlled through HBVs that dissipate energy during the release. Flow is discharged through the project as directed by the ACOE, FERC License Articles 309 and 402 and the Operating Plan (**Appendix 1.4**). There is no bypassed reach at the facility.

Changes in discharge rate are scheduled not to exceed 1,500 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 required at all times. The project operation is reviewed annually and, over time, has been refined to operate at water flows between 600 and 4,300 cfs. Flows within this range are released through one or both of the project turbines.

Flows below 600 cfs are controlled by the ACOE and released through one or more of the HBVs, as are flows in excess of the (up to) 4,300 cfs combined capacity of released through the turbines. The operating mechanisms for the turbines are controlled automatically, with operations monitored remotely. These controls ensure that minimum flows in the river are automatically maintained in the event of an unscheduled turbine shut down. The ACOE's operational control of the dam and the flows released from the dam are not altered or adversely impacted by implementation and operation of the hydroelectric project.

⁸FERC, Description:

FINAL ENVIRONMENTAL ASSESSMENT APPL FOR AMEND OF LIC FOR SUMMERSVILLE HYDROELECTRIC PROJ-10813 OF CITY OF SUMMERS- VILLE; Document Date: 10/17/1996; Accession Number 19961022-0028: https://elibrary.ferc.gov/idmws/doc_info.asp

2.1.2 Water Quality

Criterion	Standard	Instructions
B	2	<p><u>Agency Recommendation:</u></p> <ul style="list-style-type: none">• If facility is located on a <u>Water Quality Limited</u> river reach, provide a link to the state's most recent impaired waters list and indicate the page(s) therein that apply to facility waters. If possible, provide an agency letter stating that the facility is not a cause of such limitation.• Provide a copy of the most recent Water Quality Certificate and any subsequent amendments, including the date(s) of issuance. If more than 10 years old, provide documentation that the certification terms and conditions remain valid and in effect for the facility (e.g., a letter from the agency).• Identify any other agency recommendations related to water quality and explain their scientific or technical basis.• Describe all compliance activities related to water quality and any agency recommendations for the facility, including on-going monitoring, and how those are integrated into facility operations.

The original water quality certificate for the project was issued September 18, 1991 (**Appendix 2.1**) and amended in October 1997 (**Appendix 2.2**). Since the water quality certification is more than 10 years old, GRPP has requested concurrence that the certification terms and conditions remain valid and in effect for the facility from the West Virginia DEP (**Appendix 2.4**). Any response received from WVDEP will be provided to LIHI upon receipt.

The powerhouse is equipped with devices capable of automatically monitoring and recording DO and water temperature. The devices monitor the water quality prior to being discharged through the turbines, and in the river at the Gauley River Gage Station downstream of the dam.

In accordance with the Project's Water Quality Certification and the FERC License Article 404, GRPP provides means to enhance the DO of the powerhouse discharge, immediately downstream of the Project tailrace, to meet water quality requirements in the months of June through October. The Project's turbines are designed to aspirate or allow oxygen injection to enhance DO levels. The aspiration and oxygen injection systems is manually regulated by the powerhouse operator, based on the flows being discharged and the water quality data provided by the DO monitoring equipment.

The Gauley River is a High Quality Stream within the National Recreation Area boundary and the WVDNR designates it for water quality purposes as a National Resource Water – which means that the Gauley River is subject to the state's anti-degradation policy.

The 401 certification was amended in 1997 to comply with the National Park Service's Gauley River Management Plan⁹ requirements, as was the Memorandum of Agreement among the City, the Noah Corporation, and the WVDNR¹⁰.

The 1999 License Amendment, Article 404, required the licensee to submit an annual report pertaining to dissolved oxygen monitoring and mitigation and to identify any potential impacts to water quality and aquatic habitat due to low dissolved oxygen concentrations by operating the project. GRPP is required to submit an annual dissolved oxygen monitoring and mitigation report for the Project to FERC. GRPP has provided copies of these annual filings to LIHI to certify compliance with certificate conditions for the current certificate term.

⁹ West Virginia Division of Environmental Protection (WVDEP). 1997. Letter from Barbara S. Taylor, Chief of Office of Water Resources, to James B. Price, Noah Corporation. October 17, 1997.

¹⁰ WVDNR, City of Summersville, NOAH Corporation. 1998. Amendment to Memorandum of Agreement. December 10, 1998.

2.1.3 Upstream Fish Passage

Criterion	Standard	Instructions
C	1	<p><u>Not Applicable / De Minimis Effect:</u></p> <ul style="list-style-type: none">• Explain why the facility does not impose a barrier to upstream fish passage in the designated zone. Typically, impoundment zones will qualify for this standard since once above a dam and in an impoundment, there is no facility barrier to further upstream movement.• Document available fish distribution data and the lack of migratory fish species in the vicinity.• If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

The project has never been issued a mandatory fish passage prescription, nor does the FERC license require fish passage facilities. There has been no resource agency recommendation for upstream and/or downstream fish passage measures for American eel or other species at the project.

As stated by the WVDNR in 2005 during consultation for the initial application to certify this project at LIHI, addition of the hydro project has slightly improved fish mortality conditions, since no fish can survive passage through the HBVs at the Corps dam. No fish passage mortality studies have been requested by agencies. While fish mortality through the project turbines depends upon various factors, such as wicket gates clearance and the leading and trailing edges of the runners, FERC has concluded in their FEA that the overall effect of the project reduces fish mortality somewhat by allowing fish a safer alternative route through the project turbines, instead of the HBVs.

Although the 1996 FEA notes the presence of American eel in the Gauley River, the WVDNR is uncertain of their history at the project. As stated by the WVDNR in 2005, the Gauley River is within the historic range of the American eel, but passage was blocked around the turn of the last century by construction of navigation dams on the Mississippi and Ohio Rivers. There are no historic records of anadromous fish movement through the facility area. The Summersville project was constructed decades later; the Corps dam in 1966 and the hydro project added in 2001.

The reservoir's fishery is diverse, due to WVDNR stocking efforts, but the population size is small. The Gauley River supports a diversity of warm water and cool water fish species. Releases from the lower levels of the lake provide for continuous cold-to-cool water temperatures that enable the establishment of a year-round cold water fishery for trout and walleye from the dam to the confluence with the Meadow River approximately 5 miles downstream. Also, through stocking, the WVDNR has established a put-and-take trout fishery downstream of the dam in the Gauley River.

2.1.4 Downstream Fish Passage

Criterion	Standard	Instructions
D	1	<p><u>Not Applicable / De Minimis Effect:</u></p> <ul style="list-style-type: none">• Explain why the facility does not impose a barrier to downstream fish passage in the designated zone, considering both physical obstruction and increased mortality relative to natural downstream movement (e.g., entrainment into hydropower turbines). Typically, tailwater/downstream zones will qualify for this standard since below a dam and powerhouse there is no facility barrier to further downstream movement. Bypassed reach zones must demonstrate that flows in the reach are adequate to support safe, effective and timely downstream migration.• For riverine fish populations that are known to move downstream, explain why the facility does not contribute adversely to the sustainability of these populations or to their access to habitat necessary for successful completion of their life cycles.• Document available fish distribution data and the lack of migratory fish species in the vicinity.• If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

Please see section 2.1.3 - Upstream Fish Passage.

2.1.5 Watershed and Shoreline Protection

Criterion	Standard	Instructions
E	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none">• If there are no lands with significant ecological value associated with the facility, document and justify this (e.g., describe the land use and land cover within the FERC project or facility boundary).• Document that there have been no Shoreline Management Plans or similar protection requirements for the facility.

The Corps manages the Project's shoreline and adjacent lands separately from the Project. Resource agencies have not issued any recommendations, nor required the project to prepare any Shoreline Management Plans specific to the Gauley River tailrace zone of effect.

The FERC license regarding watershed protection related primarily to implementing a sedimentation and erosion control plan prior to construction and locating the transmission line so that it would span identified wetlands and avoid wetland habitat. Visual impacts of the transmission corridor were reduced by using wood poles that tend to blend more with the surrounding forest and narrowing the cleared corridor through sensitive areas. Neither FERC nor the agencies have required additional watershed protection measures. Additionally, no concerns have been raised from resource agencies regarding watershed protection issues at this Project.

2.1.6 Threatened and Endangered Species

Criterion	Standard	Instructions
F	3	<p><u>Recovery Planning and Action:</u></p> <ul style="list-style-type: none">• If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents.• Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

Virginia spiraea, a federally listed threatened plant species, is found below the dam along the Gauley River in the vicinity of transmission line corridor and downstream along the reach of the Meadow River. The USFWS developed a recovery plan for Virginia spiraea in 1992. The licensee developed an avoidance plan that USFWS approved in August of 1995. Furthermore, FERC granted relief from the requirements of License Article 407 which required monitoring of endangered species vegetation.¹¹ Construction of the transmission line avoided populations of Virginia spiraea.

Additionally, no incidental take permits have been required. According to the FEA, there are no known federal or state listed or proposed animal species in the project area.

¹¹ [FERC Order Approving Request for Relief of Endangered Species Monitoring Plan Pursuant to License Article 407](#)

2.1.7 Cultural and Historic Resources Protection

Criterion	Standard	Instructions
G	1	<p><u>Not Applicable / De Minimis Effect:</u></p> <ul style="list-style-type: none">• Document that there are no cultural or historic resources located on facility lands that can be affected by construction or operations of the facility.• Document that the facility construction and operation have not in the past, nor currently adversely affect any cultural or historic resources that are present on facility lands.

According to the Final Environmental Assessment, there are no known historic or archeological sites within the amended project boundaries including the transmission line corridor¹². No new issues have been raised by agencies with regard to cultural or historic resources since the previous certification.

¹² See letter from West Virginia Division of Culture and History (WVDCH) dated April 24, 1996 with determination of “no effect” on archeological or historic sites listed on or eligible for inclusion in the NRHP. See FERC Record: http://elibrary.ferc.gov:0/idmws/doc_info.asp?document_id=104211

2.1.8 Recreational Resources

Criterion	Standard	Instructions
H	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none">• Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations.• Document that the facility is in compliance with all such recommendations and plans.

Article 410 of the FERC License required the licensee to implement the measures contained in the MOU among the National Park Service (NPS), the Town (now City) of Summersville, and Noah Corporation, dated July 27, 1991, and filed with the Commission on August 9, 1991¹³ (**Appendix 3.1**). This MOU required GRPP to install a new whitewater raft launching facility and upgrade the access trail to the existing kayak launching area prior to land-disturbing activity. GRPP was required to install a new restroom and changing facility, picnic tables, and interpretive and informational signs. A supplemental recreation plan (**Appendix 3.2**), filed on November 18, 1999, pursuant to article 410 was approved.¹⁴

Article 411 required that a plan for monitoring recreation use be developed in consultation with the Corps and the NPS as the administrator of the Gauley River National Recreation Area. Recreation area users were surveyed from 2001-2004 and were generally satisfied with the project recreation facilities. The required facilities are in place and meet the intent of the license and MOU.

In the fall, the Corps lowers the reservoir level in anticipation of heavy snows and rain in the winter and spring months. Recreational boaters raft down the river during the draw-down period. Whitewater rafting and boating on the Gauley River below the Summersville Dam are extensive. The EA notes that in 1990 over 30,000 people boated the river during the fall draw-down, and estimated that at current use levels, recreational boating on the Gauley River adds 35 million dollars to the West Virginia economy.

The water quality certification also required Summersville to construct or provide a substantial number of recreation facilities which are completely unrelated to the maintenance or improvement of water quality. The section of the certification captioned "Recreation" requires Summersville to construct or improve access roads and paths, low water stepping stone bridges, fish attraction structures, a boat launching facility in Summersville Lake, and a

¹³ File Description: WV Division of Natural Resources et al submit memo of understanding re Summersville Hydro Proj, WV under P-10813; Accession Number: 19910918-0363; Document Date: 9/6/1991.

https://elibrary.ferc.gov/idmws/File_List.asp

¹⁴ File Description: City of Summersville, West Virginia. ORDER MODIFYING AND APPROVING RECREATION MONITORING; Accession Number: 19961122-3041; Document Date: 11/22/1996.

https://elibrary.ferc.gov/idmws/doc_info.asp

residence and storage building, and to provide funds to West Virginia DNR for fish and wildlife management programs.

Further, the ACOE is required to provide 20 days of whitewater rafting flows beginning the first weekend after Labor Day. The flow is required for at least five four-day periods which includes the weekends. During this period, the project operates by storing water in the reservoir until whitewater releases are required. The project license incorporates these flow requirements which the project continues to meet.

Part 3 – Contact Forms

Facility Owner: Gauley River Power Partners, LLC	
Name and Title	Beth Harris, Southeast Regional Operations Manager
Company	Gauley River Power Partners, LLC
Phone	(864) 979-4077
Email Address	Beth.Harris@enel.com
Mailing Address	11 Anderson St, Piedmont, SC 29673
Compliance Contact (responsible for LIHI Program requirements):	
Name and Title	Elise Anderson, Sr. Environmental Permitting Specialist
Company	Enel North America
Phone	(978) 447-4408
Email Address	Elise.anderson@enel.com
Mailing Address	100 Brickstone Square, Suite 300, Andover MA 01810
Party responsible for accounts payable:	
Name and Title	John Pasquariello, Manager, Hydro Purchasing and Logistics
Company	Enel North America
Phone	(978) 314-8583
Email Address	John.Pasquariello@enel.com
Mailing Address	100 Brickstone Square, Suite 300, Andover MA 01810

Current and relevant state, federal, and tribal resource agency contacts with knowledge of the facility:

Agency Contact	
(Check areas of responsibility: Flows X, Water Quality X, Fish/Wildlife Resources X, Watersheds X, T/E Spp. X, Cultural/Historic Resources __, Recreation __):	
Agency Name	United States Fish and Wildlife Service, Pennsylvania Field office
Name and Title	Richard McCorkle, Fish and Wildlife Biologist
Phone	814-234-4090
Email address	richard_mccorkle@fws.gov
Mailing Address	110 Radnor Rd, Suite 101 State College, PA 16801
Agency Contact	
(Check areas of responsibility: Flows X, Water Quality X, Fish/Wildlife Resources X, Watersheds X, T/E Spp. X, Cultural/Historic Resources __, Recreation X):	
Agency Name	West Virginia Division of Natural Resources
Name and Title	Jacob D. Harrell, Hydropower Coordination Biologist
Phone	(304) 558-9125
Email address	Jacob.D.Harrell@wv.gov
Mailing Address	324 4th Ave, South Charleston, WV 25303
Agency Contact	
(Check areas of responsibility: Flows X, Water Quality X, Fish/Wildlife Resources X, Watersheds X, T/E Spp. X, Cultural/Historic Resources __, Recreation X):	
Agency Name	West Virginia Department of Environmental Protection
Name and Title	Brian Bridgewater, Program Manager
Phone	(304) 926-0495 x1829
Email address	Brian.L.Bridgewater@wv.gov
Mailing Address	601 57th St SE, Charleston, WV 25304

Current stakeholder contacts that are actively engaged with the facility:

Stakeholder Contact (Check areas of interest: Flows X , Water Quality __, Fish/Wildlife Resources __, Watersheds X , T/E Spp. __, Cultural/Historic Resources __, Recreation X):	
Stakeholder Organization	US Army Corps of Engineers – Huntington District
Name and Title	Resource Manager - 304-872-3412
Phone	(304) 872-3459
Email address	
Mailing Address	2981 Summersville Lake Rd, Summersville, WV 26651
Stakeholder Contact (Check areas of interest: Flows __, Water Quality __, Fish/Wildlife Resources __, Watersheds X , T/E Spp. __, Cultural/Historic Resources __, Recreation X):	
Stakeholder Organization	City of Summersville, West Virginia
Name and Title	Mayor Robert Shafer
Phone	304-872-1211
Email address	info@summersvillewv.org
Mailing Address	City Office: 400 Broad St., Summersville, WV 26651

Part 4 – Sworn Statement and Waiver of Liability

SWORN STATEMENT

As an Authorized Representative of Gauley River Power Partners, the Undersigned attests that the material presented in the application is true and complete.

The Undersigned acknowledges that the primary goal of the Low Impact Hydropower Institute's certification program is public benefit, and that the LIHI Governing Board and its agents are not responsible for financial or other private consequences of its certification decisions.

The Undersigned further acknowledges that if LIHI Certification of the applying facility is granted, the LIHI Certification Mark License Agreement must be executed prior to marketing the electricity product as LIHI Certified®.

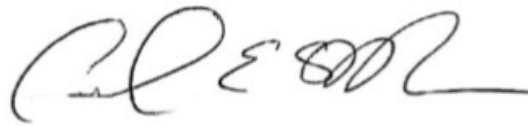
The Undersigned further agrees to hold the Low Impact Hydropower Institute, the Governing Board and its agents harmless for any decision rendered on this or other applications, from any consequences of disclosing or publishing any submitted certification application materials to the public, or on any other action pursuant to the Low Impact Hydropower Institute's certification program.

Company Name: Gauley River Power Partners, LLC

Authorized Representative:

Name: Conrad St. Pierre, P.E.

Title: Senior Director of Hydro, Enel North America

A handwritten signature in black ink, appearing to read 'C. St. Pierre', written over a light gray horizontal line.

Authorized Signature:

Date: January 8, 2020

Part 5 – Appendices

Appendix 1.1 – FERC License

UNITED STATES OF AMERICA 60 ferc 61,291
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Martin L. Allday, Chairman;
Charles A. Trabandt, Elizabeth Anne Moler,
Jerry J. Langdon and Branko Terzic.

Town of Summersville, West Virginia) Project No. 10813-000
City of Manassas, Virginia) Project No. 10634-000

ORDER ISSUING LICENSE

(Issued September 25, 1992)

The Town of Summersville, West Virginia (Summersville), filed a license application under Part I of the Federal Power Act (FPA) 1/ to construct, operate, and maintain the 80-megawatt (MW) Summersville Hydroelectric Project. 2/ The project 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' (Corps) Summersville Dam. 3/

Notice of the application was published, and motions to intervene were filed by: the City of Manassas, Virginia (Manassas); West Virginia Division of Natural Resources (West Virginia DNR); American Whitewater Affiliation; Fayette County Chamber of Commerce, West Virginia Professional River Outfitters, and Class VI River Runners; and American Rivers, Incorporated. Except for Manassas, no party objects to issuance of the license. All comments filed by agencies and individuals have been fully considered. For the reasons stated below, we will issue the license.

BACKGROUND

The project, as licensed herein, consists of: (a) three penstocks, each 11 feet in diameter, connected to the existing outlet conduits of the Corps facility, and a fourth, 3-foot-

- 1/ 16 U.S.C. 791(a)-823(b) (1988).
- 2/ A competing application for a preliminary permit, filed by the City of Manassas, Virginia, was dismissed without prejudice by an unpublished order issued on December 13, 1990. In this order the application is denied.
- 3/ Section 23(b)(1) of the FPA, 16 U.S.C. 817(1), requires a license for the construction and operation of a hydroelectric project that will "utilize the surplus water or water power from any Government dam."

diameter, penstock which branches off penstock No. 3 and leads to the small turbine; (b) a powerhouse containing three 24 MW turbines and one 8 MW turbine-generator, for a total installed capacity of 80 MW; (c) a new valve house with three large and one small Howell-Bunger valves; (d) a tailrace; (e) an 8-mile-long transmission line; and (f) appurtenant facilities. The project's interconnection with the Corps facilities is described further below.

In 1981, Summersville was issued a preliminary permit in Project No. 3493 to study the development of hydroelectric energy at Summersville Dam. 4/ In 1983, during the term of the permit, Summersville filed a license application, and in 1984 a competitor (Southeastern Renewable Resources, Inc.) submitted another license application. In May 1984 both license applications were dismissed because the affected reach of the Gauley River was designated under the Wild and Scenic Rivers Act, 16 U.S.C. 1271-1287, for possible inclusion in the National Wild and Scenic Rivers System. 5/ On April 26, 1985, the President recommended that the affected reach of the Gauley River not be included in the National Wild and Scenic River System; pursuant to the terms of the Wild and Scenic Rivers Act, the licensing prohibition would expire on April 26, 1988.

Thereafter, Summersville submitted an application for a preliminary permit for the Summersville Dam site, which was granted in 1986, 6/ but due to concerns regarding its ability to finance the development Summersville surrendered the permit. The Commission Secretary's Notice of Surrender, issued December 1, 1986, advised that new applications for the site could be filed on January 2, 1987. Summersville and Manassas submitted permit applications on that date, but in July 1988 the Commission dismissed both permit applications because of a policy adopted in March 1987 precluding consideration of permit or license applications at study river sites until the three-year

4/ 15 FERC 62,218 (1981). The order issuing the preliminary permit also denied competing permit applications, one of which was filed by a group that included Manassas.

5/ 27 FERC 61,206 (1984), reh'g denied, 28 FERC 61,257 (1984), aff'd, Town of Summersville v. FERC, 780 F.2d 1034 (D.C. Cir. 1986).

6/ 36 FERC 62,179 (1986).

period for Congressional consideration had expired. 7/ The order stated that applications for the site would be accepted beginning August 8, 1988.

On August 8, 1988, Manassas filed a permit application that was docketed as Project No. 10634, and Summersville filed a license application that was docketed as Project No. 10635. The Commission staff notified Summersville of deficiencies in the license application, and Summersville submitted information to correct them.

On October 26, 1988, before the competing permit and license applications were accepted or rejected, Congress enacted the West Virginia National Interest River Conservation Act of 1987, Public Law 100-534, 102 Stat. 2699. Title II of the act created the Gauley River National Recreation Area, which begins at the foot of the Summersville Dam and extends downstream approximately 25 miles. Within Title II, Section 202(d) adopted Section 7(c) of the Wild and Scenic Rivers Act, which prohibits the issuance of hydroelectric licenses. However, Section 205(c) of the act provides that:

during the four-year period after the enactment of this Act [i.e., until October 26, 1992], nothing in this Act shall prohibit the licensing of a project adjacent to Summersville Dam as proposed by the City of Summersville, or by any competing project applicant with a permit or license application on file as of August 8, 1988....

Section 205(c) also provides that if a project is licensed the boundary of the National Recreation Area is to be modified by relocating the upstream boundary of the Recreation Area to a point 550 feet downstream from the existing valve house. Section 205(c) directs the Secretary of the Interior to retain in the Recreation Area all lands which are not necessary to the operation of the project. The National Recreation Area is to be administered as a unit of the National Park System.

The Summersville Hydroelectric Project will be located between the Summersville Dam and the National Recreation Area, with the downstream edge of the project boundary being adjacent to the upstream boundary of the Recreation Area.

7/ 44 FERC 62,095 (1988). A study river site is a river segment which has been designated for possible inclusion in the Wild and Scenic Rivers System.

Before Summersville's 1988 license application was accepted or rejected, Manassas' permit application was accepted for filing, and the Commission issued notice of that application. Since the deadline for filing license applications in competition with Manassas' permit application was approaching and Summersville had not been informed whether it had corrected the deficiencies in its 1988 application, Summersville filed on July 31, 1989, a timely license application that was docketed as Project No. 10813.

The Commission staff notified Summersville of deficiencies in its 1989 license application, and subsequently rejected Summersville's 1988 license application for failure to correct deficiencies. Summersville filed an appeal of the rejection. The Commission upheld the rejection of the 1988 application but accepted Summersville's 1989 license application for filing. 8/ In an answer to Summersville's appeal, Manassas argued 9/ that a license should not be issued to Summersville because it had abused its municipal preference. 10/ The Commission deferred

8/ 53 FERC 61,259 (1990). This order determined that Summersville's 1989 application qualified as eligible under the terms of the West Virginia National Interest River Conservation Act. Id. at p. 62,040 n. 7.

9/ Manassas also argued that Summersville's 1989 license application should be rejected because it duplicated the then-pending 1988 license application. The Commission found that Summersville had two license applications on file for the same project as a result of a staff procedural error. We noted that Manassas' permit application should not have been accepted before the staff decided whether to reject Summersville's 1988 application, and therefore rescinded the notice of Manassas' permit application. We also noted that Summersville had corrected the deficiencies in its 1989 license application in a timely manner and that it was being accepted for filing as of July 31, 1989. On December 13, 1990, the staff dismissed Manassas' permit application without prejudice, and Manassas filed a request for rehearing of that order.

10/ Under Section 7(a) of the FPA, 16 U.S.C. 800(a), when there are competing applications for preliminary permit, or competing applications for original license that were not preceded by preliminary permits, the Commission must give tie-breaker preference to the application filed by a state or municipality. In City of Fayetteville Public Works Commission, 16 FERC 61,209 (1981) (Fayetteville), the
(continued...)

consideration of Manassas' allegations of municipal abuse until the review of Summersville's license application.

On rehearing, 11/ the Commission addressed one aspect of Manassas' allegation of municipal abuse by Summersville. 12/ The Commission found that Manassas had not shown that Summersville's 1989 license application was the result of any abuse by Summersville of its municipal preference at the permit stage. The order noted that the 1983 license application filed by Summersville during the term of its 1981 permit was dismissed because of the designation of the Gauley River for potential inclusion in the Wild and Scenic River System. The order further noted that, upon the expiration of the prohibition against licensing during Congressional consideration of the Wild and Scenic River issue, Manassas and Summersville were in fresh and equal positions to compete for development of the Summersville Dam site, and that Summersville's 1989 license application was filed independently from the 1983 permit and not in reliance on it. The order deferred, until review of Summersville's 1989 license application, consideration of Manassas' allegations that Summersville does not have authority under state law to own and operate the project, and that Summersville does not intend to acquire and retain all of the property rights and interests in property necessary to operate and maintain the project. Those issues are addressed below in this order.

10/(...continued)

Commission determined that municipal preference does not apply to so-called "hybrid" applications consisting of a municipality and a nonmunicipality. The Commission has found abuse of municipal preference in situations where the municipality used its municipal preference at the permit stage to gain competitive advantage at the licensing stage on behalf of hidden, nonmunicipal entities whose interest in the project required them to have been co-applicants. See, e.g., Gregory Wilcox, 24 FERC 61,317 (1983) and 26 FERC 61,113 (1984).

11/ 55 FERC 61,271 (1991).

12/ The order also withdrew our rescission of the notice of Manassas' permit application but upheld the order dismissing Manassas' permit application, and affirmed the decision to accept and process Summersville's 1989 license application.

DISCUSSION

A. Manassas' Allegations Regarding Summersville's Qualifications to Be a Licensee

1. Relationship Between Summersville and Noah Corporation

Manassas asserts that Noah Corporation is a joint venturer with Summersville in the project's development and that the project will actually be owned and operated by Noah. Manassas argues that Summersville does not intend to retain all of the property rights necessary to construct and operate the project but intends to transfer interests in the project to Noah that would require Noah to become a licensee. Manassas contends that Summersville will not be able to construct and operate the project as the sole licensee, inasmuch as all of the design, consultation, and study work related to the various applications has been performed by Noah and not by Summersville. Manassas also cites to a letter dated November 26, 1980, from Howard M. Hickey, Jr., on behalf of Noah, to Farrell Johnson, Mayor of Summersville, recommending that Noah be withdrawn as an applicant from the pending permit application for Project No. 3493 so that the applicant would be a "pure" municipal rather than a hybrid. The letter goes on to state that any license issued for the project would then be transferred jointly to Summersville and Noah prior to the commencement of construction.

The addition of a non-municipal entity as a co-licensee to a license that was issued to a municipal applicant could constitute an abuse of the municipal preference, even if the non-municipal entity is being added in order to provide financing for the project. 13/ Therefore, any financing plan or other agreement in which Noah would hold property rights which would require it to become a licensee could result in a finding that Summersville had abused its municipal preference. 14/

13/ See Paterson Municipal Utilities Authority, 27 FERC 61,323 (1984), and City of Vidalia, Louisiana, 28 FERC 61,328 (1984).

14/ These principles apply despite the fact that Summersville is the sole applicant for a license and no competing license application has been filed, because (as we explained in Paterson and Vidalia) Summersville's status as a municipality gave it an inherent advantage over potential non-municipal applicants such as to discourage potential applications by the latter. However, as discussed in our

(continued...)

The November 1980 letter from Mr. Hickey to Mr. Johnson raises a question about the relationship between Summersville and Noah and Summersville's intent to acquire and retain all of the property interests necessary to construct, operate and maintain the project. However, this letter was written before the Commission announced its policy regarding abuse of municipal preference in Fayetteville (see n. 11, supra). Summersville has since stated, in its application and in response to staff inquiry, that it intends to acquire and retain all property interests necessary to be sole licensee for the project. It does, however, have a contractual agreement with Noah by which Noah is Summersville's agent for most activities concerning the Summersville Dam Project.

In our decision in City of Fayetteville Public Works Commission, we stated that: 15/

the preference afforded a municipality under Section 7(a) need not be jeopardized by contractual arrangements the municipality may make with non-municipal entities for assistance in financing, studying, constructing or operating a project. In order to retain its entitlement to municipal preference as the party who intends to be the licensee, the municipality must retain in such contractual relationships requisite control over the operation of the project and may not relinquish any property or other rights necessary for project purposes.

We have reviewed the agreement between Summersville and Noah, dated December 13, 1982, and conclude that, as modified herein, it is acceptable. Under the agreement, Noah is to manage all aspects of the licensing, financing, design, construction,

14/ (...continued)

prior order, as summarized above, any advantage that Summersville might have incurred from an abuse of municipal preference at the time it sought and held a preliminary permit, had such abuse occurred, would in any event be irrelevant, because Summersville filed its license application in this proceeding long after the permit expired.

15/ Fayetteville, 16 FERC 61,209 at p. 61,456. The Commission has approved a variety of agreements where municipalities have contracted with non-municipals for financing or project operation. See, e.g., City of New Martinsville, West Virginia, 32 FERC 61,268 (1985), and El Dorado Irrigation District, 29 FERC 61,375 (1984).

operation, and maintenance of the project, subject to the direction and control of Summersville, 16/ which will own all project property exclusively. 17/ Summersville has the right to direct and control Noah "in each and every action undertaken pursuant to the agency" established by the agreement, and Noah must consult with Summersville before taking actions "significantly" affecting the project, "unless exigent circumstances require otherwise." 18/ Under these provisions, Summersville appears to retain the requisite control over project operations required by the FPA.

Nevertheless, since Summersville's control of Noah's overall management of the project under the agreement is subject to "exigent circumstances," and since Noah appears to have authority to take independent actions with respect to the project that do not "significantly" affect the project, and to make clear that Noah may in no way encumber Summersville's performance of its duties as a licensee, the agreement must be modified to include a provision stating that:

Notwithstanding any provision contained herein, the Principal [Summersville] has the right to perform any and all acts required by an order of the Federal Energy Regulatory Commission or its successor without the prior approval of the Agent [Noah]. [19/]

Inclusion of the foregoing provision will serve to ensure that the agreement comports with the project control and municipal preference requirements of the FPA.

Under the agreement, Summersville will pay Noah a monthly fee equal to 49 percent of the proceeds of the project, 20/

16/ See the agreement at pp. 3-7, Section Three.

17/ Id. at p. 14, Section Nine.

18/ Id. at p. 8, Section Four.

19/ Compare Linweave, Inc., 23 FERC 61,391 (1983), where the Commission required modification of a lease agreement of project property to include a similar provision to ensure that the licensee/lessee would possess all rights necessary to accomplish all project purposes.

20/ See the agreement at pp. 12-14, Section Seven. Project proceeds are defined as gross income (consisting of power sales revenues to a utility plus an amount equal to the
(continued...)

and in the event project expenses exceed gross income, Noah is to receive no fee. 21/ These provisions appear to provide an acceptable method of allocating project revenues between Summersville and Noah. 22/ That Noah will receive a portion of project revenues does not by itself require it to become a licensee. 23/

Manassas has not presented any other evidence to support its contention that Summersville intends to transfer the license to Noah or add Noah as a co-licensee after the issuance of this license. Accordingly, we are satisfied that Summersville intends to maintain the control of project operations and ownership of property and property rights required by the license and the FPA. 24/

20/ (...continued)

fully allocated cost of any project power used by Summersville) less monthly expenses incurred by Noah.

21/ Id. at pp. 14-15, Section Eight.

22/ Compare El Dorado Irrigation District and El Dorado County Water Agency, 29 FERC 61,375 at p. 61,789 (1984), where the Commission approved a project financing arrangement involving the sharing of project revenues between municipal licensees and a group of private investors.

23/ See Fayetteville, supra, 16 FERC at 61,459 n. 8, where the Commission found that it is the possession of proprietary interests in project property that distinguishes a licensee from parties that are mere beneficiaries of a project. Compare Owyhee Irrigation District, 55 FERC 61,252 at p. 61,804 (1991), where the Commission found that a proposed contract to share project revenues between a licensee and a non-licensee, which would not convey interests in project property or rights necessary to accomplish project purposes, would not require the non-licensee to become a co-licensee.

24/ However, if in the future Summersville seeks to transfer its license to a non-municipal entity, such transfer may be barred as an abuse of municipal preference, unless the Commission determines, after a competitive transfer proceeding or other proceeding, that Summersville and/or its private transferee should be awarded the project license. See Vidalia, supra n. 13.

2. Summersville's Municipal Authority

Manassas argues that a license should not be issued to Summersville because Summersville is not authorized by West Virginia law to construct, operate, and maintain the project. Summersville states in its application that it is authorized by West Virginia Code Sections 8-12-5(32) and (33) and 13-2C-1 to 13-2C-5 to engage in the business of operating a hydroelectric generating project. 25/

Manassas contends that the language of Section 8-12-5(32) does not permit Summersville to operate this project. Section 8-12-5(32) states in pertinent part that municipalities shall have the power:

To erect, establish, construct, acquire, improve, maintain and operate ... an electrical system ... within or without the corporate limits of the municipality or partly within and partly without the corporate limits of the municipality, except that the municipality shall not erect any such system partly without the corporate limits of the municipality to serve persons already obtaining service from an existing system of the character proposed

Manassas argues that the prohibition in subsection 32 against establishing an electrical system outside the corporate limits of a municipality to serve persons already receiving service from an existing system prohibits Summersville from producing power for sale to a power company.

On March 10, 1990, after the date of Manassas' motion opposing Summersville's license application, the West Virginia Code was amended to provide that any municipality may:

25/ Chapter 8, Article 12, Section 5 deals with general municipal powers, and Chapter 13, Article 2C is the Industrial Development and Commercial Development Bond Act.

Section 8-12-5(33) provides that Summersville has the authority:

To acquire watersheds, water and riparian rights, plant sites, rights-of-way and all other property and appurtenances necessary, appropriate, useful, convenient or incidental to any such system ... as aforesaid [including in Section 8-12-5(32)]

acquire, construct, establish, extend, equip, repair, maintain and operate or lease to others for operation ... an electric power system or construct, maintain and operate additions, betterments and improvements to an existing ... electric power system, notwithstanding any provision or limitation to the contrary in any other law or charter: Provided, That such municipality ... shall not serve or supply ... electric power facilities or services within the corporate limits of any other municipality or county commission without the consent of the governing body of such other municipality or county commission.

Section 8-19-1(a). 26/ Summersville proposes to sell the project power to the Monongahela Power Company, 27/ but does not yet have a power supply contract. If the sale of project power to a private utility were to invoke the proviso in Section 8-19-1(a), Summersville would at that time have to obtain any requisite consent as provided for in that section. However, at this point Manassas has not demonstrated that the West Virginia Code prevents Summersville from constructing and operating the Summersville Dam Project. 28/

26/ Section 8-19-1(c)(2) defines "electric power system: as:

a system or facility which produces electric power in its entirety or provides for the distribution of electric power for local consumption and use or for distribution and resale or any combination thereof, including, but not limited to, power lines and wires, power poles, ... generators, ... machinery and all other facilities necessary, appropriate, useful or convenient or incidental in connection with or to an electric power supply system.

27/ See EA at 1-2.

28/ Summersville also states that it is authorized to construct and operate the Summersville Dam Project by the Industrial Development and Commercial Development Bond Act (Bond Act), which authorizes municipalities to acquire and finance industrial and commercial projects. Manassas argues that the Summersville Dam Project does not meet the definition of either a commercial or industrial project as contained in the Bond Act. In light of the above discussion, we do not believe it is necessary to reach this issue.

B. Whether to License the Project

We find that issuing a license for Summersville's proposed project, with the mitigative measures recommended by the Commission's staff, is in the public interest. This project will produce 198,000 MWh of electric energy annually using a clean, renewable resource. As discussed below and in the Environmental Assessment (EA) 29/ attached to this order, the project, as licensed, will not have significant adverse impacts on the recreational use of Lake Summersville or the Gauley River. We recognize that temporary adverse impacts on water quality and on recreational boating below the dam will occur during construction of the project, and that some of the project works, such as the powerhouse, valve house, and transmission line, will adversely affect the aesthetic appearance of the project area. Nonetheless, we conclude that the benefits of the project outweigh the unavoidable adverse impacts. Accordingly, we find that the Summersville Hydroelectric Project No. 10813 would be best adapted to comprehensive development of the waterway for beneficial public uses, as required by Section 10(a)(1) of the FPA. 30/

C. Project Design and Construction

The hydroelectric project licensed herein will be constructed adjacent to the Corps' Summersville Dam. The project reservoir is Lake Summersville, which the Corps manages for flood control, low-flow augmentation, and recreation. It has a surface area that varies seasonally between 514 and 4,920 acres. 31/ The dam, built in 1966, is a rockfill structure 393 feet high and 2,280 feet long. Water is drawn out of the reservoir through an intake structure that leads to a 29-foot-diameter outlet

29/ Environmental Assessment for Summersville Hydroelectric Project, FERC No. 10813-000 -- West Virginia (January 10, 1992).

30/ 18 U.S.C. 803(a)(1).

31/ The minimum pool is 514 acres, and the maximum pool (during flood conditions) is 4,820 acres. The normal winter pool is 928 acres, and the normal summer pool is 2,790 acres. In the fall, the Corps lowers the reservoir level in anticipation of heavy snows and rain in the winter and spring months. Recreational boaters raft down the river during draw-down period.

tunnel, 32/ which splits into three 11-foot-diameter steel tunnels controlled by three 9-foot-diameter Howell-Bunger valves, 33/ and one 3-foot-diameter steel tunnel controlled by one 30-inch Howell-Bunger valve. These valves are in a valvehouse located directly downstream of the reservoir.

The proposed project would be built immediately downstream of the Corps valvehouse. The existing tunnels would be extended and the three 11-foot-diameter tunnels would each be bifurcated by wyes 34/ into two conduits: one leading to a new powerhouse located approximately 250 feet downstream of the Corps valvehouse location, 35/ and the other leading to a new valvehouse located to the left of the powerhouse. The 3-foot-diameter tunnel would go directly into the new valvehouse. The four Howell-Bunger valves would be moved from the Corps valvehouse to the new valvehouse. The powerhouse would contain three 24-MW turbine generators, and one 8-MW turbine generator.

The Corps is concerned that the addition of hydraulic turbines to the existing outlet tunnels could subject that structure to hydraulic transients 36/ that are not experienced with the present control facilities. The Corps believes that the proposed plan's introduction of new bends and wyes into the Corps discharge tunnels which could threaten the physical integrity of the existing outlet works. The Corps asks that we require Summersville to conduct a study of hydraulic transients and, if

32/ The outlet tunnel is sometimes referred to as a discharge conduit.

33/ A Howell-Bunger valve, named for its inventors, is a regulating valve which allows for the release of a controlled flow of water. This type of valve is frequently used for turbine by-passes or to provide aeration of water.

34/ A wye is a "Y" shaped fixture that connects one pipe with two others.

35/ One of these tunnels would have a smaller tunnel off of it just before they entered the powerhouse.

36/ Hydraulic transients are changes in pressure in the water column in a tunnel or penstock. The pressure changes can be caused by changes in the volume of water flow, such as closing a valve. In order to run sufficient water through the turbines, the Howell-Bunger valves may be closed.

necessary, incorporate surge tanks 37/ or other facilities into the project to protect the structural integrity of the outlet works.

We agree that the proposed changes in the outlet works have the potential to cause hydraulic transients which could threaten the structural integrity of the existing outlet works. Accordingly, we are including Article 312 in the license, which requires Summersville to conduct a study of potential hydraulic transients in the dam's discharge conduits and, if required by the Corps, incorporate surge tanks and other facilities into the proposed project to protect the existing outlet works.

The Corps is also concerned that the proposed changes in the discharge conduits may cause unacceptable flow patterns to develop in the conduits at the relocated Howell-Bunger valve site. In order to ensure that the proposed project does not create flow patterns which could adversely affect the dam or outlet works, we are including Article 313 in the license, which requires Summersville to construct and test a physical model of the penstock and conduit system to determine if unacceptable flow patterns would be created in the conduit system, including the tailrace.

In order to construct the new facilities, the licensee will be installing cofferdams 38/ to divert the water from the construction site. The large Howell-Bunger valves will be removed from the Corps valvehouse and placed in the new valve- and powerhouses one at a time, with one cofferdam installed for each valve move. 39/

- 37/ A surge tank would provide a path for the blocked water in the tunnel to travel, thereby releasing any built-up pressure.
- 38/ The cofferdams will be a single-sheet pile supported by buttresses, or a similar structure.
- 39/ The first-stage cofferdam will be located between the third (nearest the new valvehouse) and second turbines in the powerhouse and extend upstream between the third and second powerhouse conduits to the Corps valvehouse, and downstream a short distance. A settling basin with a haybale dike will be located to the right of the cofferdam. While this cofferdam is in place, the conduit leading to the new valvehouse, the new valvehouse, and its tailrace will be built. The second-stage cofferdam will surround the second penstock from the Corps valvehouse to the powerhouse. A

(continued...)

The Corps commented that the cofferdams needed for the first two stages of project construction are substantial structures which will be difficult to design and construct. The Corps requests that Summersville satisfy the Corps as to the design and feasibility of constructing the cofferdams before proceeding with other aspects of the project design. Summersville does not object to Corps review and approval of the cofferdam design to ensure that the integrity of the federal Summersville Dam is not jeopardized, but does not believe that the Corps' concurrence on the feasibility of the cofferdams is necessary. Summersville believes that, because the cofferdams would be downstream of all dam structures and failure of the cofferdams would not jeopardize the safety of the dam, the feasibility of the cofferdams is the concern of Summersville and its contractor.

We anticipate that any review of the cofferdam design by the Corps would include an evaluation of the likelihood of failure of the cofferdam and the potential threat that such a failure could pose to the structural integrity and operation of the federal project. Therefore, the Corps should have review and approval authority over the cofferdam design. 40/ In order to ensure that the cofferdams do not threaten the operation and structural integrity of the federal project, we are including Article 304 in the license, which will require that cofferdam design and construction be performed in consultation with, and subject to,

39/ (...continued)

settling basin with a haybale dike will be located downstream of the cofferdam. While this cofferdam is in place, the second conduit to the powerhouse will be built. The third-stage cofferdam will extend from the end of the powerhouse nearest the valvehouse and cut across to the bank on the powerhouse side of the tailrace. A settling basin with a haybale dike will be located immediately downstream of the right side of the powerhouse. While this cofferdam is in place, the first conduit to the powerhouse, the powerhouse, and the tailrace will be built.

40/ If the Corps were to conclude that there was a potential for failure of the cofferdam, but that such a failure would not threaten the structural integrity or operation of the federal project, we would expect the Corps to communicate its views to Summersville and its contractors. In light of the Corps' engineering experience and expertise in this area (as well as Summersville's obvious interest in ensuring the integrity of its own facilities) we would expect that in that event Summersville and its contractors would consult extensively with the Corps and to accord considerable deference to the Corps' views.

the approval of the Corps' Division Engineer. Article 304 also requires Summersville to submit a schedule for the submission of design documents and plans and specifications for the project in order to allow timely review and approval by the Corps.

The National Park Service is concerned that the cofferdams could affect the Gauley River National Recreation Area (which, as noted above, extends from just below the project to some 25 miles downstream) through sedimentation and leaching, and has requested its own review authority over the design of the cofferdams. We agree that erosion, sedimentation, and leaching from the cofferdams could affect the Recreation Area. Therefore, Article 311 of the license requires Summersville to submit design drawings and computations for the proposed cofferdams to the Park Service for review and recommendations for making the proposed cofferdams compatible with the operation of the Recreation Area.

The Corps notes that construction of the Summersville Project will cause temporary reductions in the overall discharge capacity of the outlet works during the times that the Howell-Bunger valves are relocated. The Corps states that there are certain periods of the year when any reduction in discharge capacity would be unacceptable. In order to ensure that reductions in discharge capacity do not adversely affect the operation of the Summersville Dam, we are including Article 314 in the license, which requires Summersville to schedule the relocation of the Howell-Bunger valves only during the time periods specified by the Corps.

D. Erosion and Sedimentation

The Park Service and the West Virginia DNR are concerned that sedimentation and erosion from project construction could adversely affect the Recreation Area. Ground-disturbing construction activities include the excavation in the river bank and bed during the construction of the powerhouse, the tailrace, and the discharge channel for the new valve house; the creation of the construction staging area; the disposal of excess excavated spoil; and obtaining access to transmission tower sites and the installation of the new towers. The EA notes that these construction activities could produce significant erosion and sedimentation problems. 41/

Summersville has prepared an Erosion and Sedimentation Control Plan, filed July 31, 1989, and revised May 30, 1990, which would reduce erosion and sedimentation from project construction to minor levels. Article 401 of this license

requires Summersville to implement the erosion and sedimentation control plan it has filed. Summersville is required to file the final drawings, specifications, and schedule for implementing the plan at the same time it files the final project drawings and specifications required by Article 302. Article 401 further requires Summersville to prepare the final drawings and specifications for the erosion and sedimentation control plan in consultation with the Park Service, West Virginia DNR, the Soil Conservation Service, and the Corps.

The Park Service is also concerned that the planned excavated spoil disposal area could affect the Recreation Area. Summersville proposed to dispose of spoil excavated in construction of the powerhouse, tailrace, and new valve house in the old Summersville Dam borrow area. The Recreation Area boundary map provided by the Park Service indicated that part of the spoil disposal area would be within the Recreation Area. The Park Service states that it reserves the right to refuse deposition of spoil material on land within the Recreation Area. If the Park Service refuses deposition of spoil material, an alternative disposal site would have to be found. One alternative would be to shift the disposal site to another part of the Summersville Dam borrow area. It appears from maps that there is sufficient space in the borrow area outside the Recreation Area boundary to dispose of spoil from the project. Summersville states that there are a number of former coal strip mining sites in the area where spoil could be deposited, and that moving the spoil to an alternate site would not place a greater economic burden on the project.

The Park Service is also concerned about revegetation of those portions of the transmission line route which cross the Recreation Area. The Park Service notes that Summersville's erosion and sedimentation control plan calls for use of lespedeza and alfalfa for revegetation. Park Service policies do not allow the use of "exotic" species such as lespedeza and alfalfa where other alternatives exist. The Park Service states that native species would need to be used to revegetate those parts of the transmission route which cross Park Service land. Article 401 requires Summersville to consult with the Park Service in the preparation of the erosion and sedimentation plan. The Park Service will be able to identify acceptable species for revegetation of the transmission route during this consultation. In addition, Article 410 adopts the terms of the Memorandum of Understanding (MOU) between Summersville and the Park Service, which requires Summersville to locate the transmission line on a route acceptable to the Park Service. These requirements will ensure that the routing and revegetation of the transmission line route will be consistent with the purposes of the Recreation Area.

The Park Service is concerned that the transmission line could pose an electrocution hazard to perching raptors. The EA notes that bald eagles and peregrine falcons may be attracted to the project area and could be electrocuted when perching on the transmission line if it is not properly designed. 42/ Article 406 requires Summersville, after consulting with the Park Service, West Virginia DNR, the Corps, and the Fish and Wildlife Service, to file a transmission line design plan which considers measures necessary to protect raptors from electrocution.

E. Water Quality

Section 401(a)(1) of the Clean Water Act, 33 U.S.C. 1341(a)(1), requires that Summersville receive water quality certification or a waiver of certification before we can issue a license for the project. West Virginia DNR issued a water quality certification for the project on September 18, 1991.

West Virginia DNR is concerned that project operations could result in reductions in water quality, specifically dissolved oxygen (DO), downstream of the Summersville Dam. At the present time, water is released from Summersville Dam through the Howell-Bunger valves at the base of the dam. These valves dissipate energy from the discharged water and also have the effect of aerating the water to near-saturated or super-saturated DO concentrations. Project operations would divert most of the release flows through the project turbines and would reduce or frequently eliminate releases through the Howell-Bunger valves, with commensurate losses in aeration at the project dam.

West Virginia DNR has designated the Gauley River downstream of the Summersville Dam as a High Quality Stream and a National Resource Water. 43/ West Virginia's anti-degradation policy provides that there should be no reduction in present water quality of National Resource Waters and High Quality Streams. 44/ The EA states that the area immediately downstream of the dam is classified as Trout Water by West Virginia DNR. The standard for DO concentrations immediately downstream of the dam is not less than 6.0 milligrams per liter (mg/l) at any time and not less than 7.0 mg/l during spawning

42/ EA at 20.

43/ "High Quality Stream" and "National Resource Waters" are categories established under West Virginia's water quality program pursuant to West Virginia Code Chapter 20, Article 5A and Legislative Rules, Title 46, Series I, Section 4.0.

44/ EA at 11.

areas. The EA also states that, although DO concentrations have not been continuously monitored downstream of the dam, 61 samples were taken immediately downstream of the dam between 1975 and 1988. DO concentrations ranged from 5.9 mg/l to 13.0 mg/l and averaged 9.7 mg/l. The DO standard of 6.0 mg/l was not met on only one occasion, in June 1981. 45/

The water quality certification issued by West Virginia requires Summersville to maintain a DO concentration of 7.0 mg/l in the project tailrace and to operate the project in a manner that maintains DO concentrations in the river above Swiss, West Virginia, equivalent to those existing prior to project operations. 46/ West Virginia requires that Summersville prepare a plan for determining pre-project DO concentrations. The certification also requires Summersville to prepare an operating plan and to monitor water quality for the first two years of project operations. After the two-year study, Summersville is required to prepare a comprehensive evaluation of the operating plan which documents project impacts and proposes revisions in the operating plan, if necessary.

The EA states that the fish species which occur in the Gauley River require a well-aerated environment for optimum growth and reproduction. The EA notes that the U.S. Environmental Protection Agency's (EPA) criteria for non-salmonid waters indicate that a DO concentration of 6.0 mg/l would have slight or no impact on early fish life stages and no impact on other life stages. The EPA criteria indicate that a DO concentration of 7.0 mg/l would have no effect on salmonid growth rates. The EA concludes that DO concentrations of at least 7.0 mg/l would have little or no impact on fish in the Gauley River. The EA states that it should be possible to operate the project in a manner which meets the 7.0 mg/l minimum DO concentration requirement during critical periods either with partial or total flow releases through the Howell-Bunger valves or other methods, such as the oxygen injection system proposed by Summersville. 47/

Article 404 requires Summersville to maintain a DO concentration of at least 7.0 mg/l, as measured in the Gauley River immediately downstream of the project's tailrace.

45/ EA at 12.

46/ The U.S. Department of the Interior supported this requirement.

47/ EA at 15-16.

Article 404 also requires Summersville to install and operate permanent, continuously recording water temperature and DO monitoring devices, and reserves authority to the Commission to require modifications in project structures or operations to ensure that the 7.0 mg/l DO concentration level is met.

The water quality certification also requires Summersville to construct or provide a substantial number of recreation facilities which are completely unrelated to the maintenance or improvement of water quality. The section of the certification captioned "Recreation" requires Summersville to construct or improve access roads and paths, low water stepping stone bridges, fish attraction structures, a boat launching facility in Summersville Lake, and a residence and storage building, and to provide funds to West Virginia DNR for fish and wildlife management programs. We believe that these conditions are beyond the scope of Section 401, and that states should not use their water quality certification authority to impose conditions that are unrelated to water quality. 48/ However, since pursuant to Section 401(d) of the Clean Water Act all of the conditions in the water quality certification must become conditions in the license, review of the appropriateness of the conditions is within the purview of state courts and not the Commission. The only alternatives available to the Commission are either to issue a license with the conditions included or to deny Summersville's application, and we do not believe it is in the public interest to deny the application.

Several of the recreational facilities (an access road, angler access paths, and two stepping stone bridges) required by the water quality certification would be located outside of the project boundary and within the Recreation Area. 49/ The EA recommends that these riverside facilities not be built, because they would pose a threat to the Virginia spirea and its habitat. 50/ Intervenor American Whitewater Affiliation (Whitewater) objects to these facilities, because they would degrade the pristine scenery along the river bank. Whitewater also objects

48/ See Central Maine Power Co., 52 FERC 61,033 (1990); Carex Hydro, 52 FERC 61,216 (1990).

49/ These facilities would be located in or along the river between the powerhouse and the point where the emergency spillway joins the river, approximately two miles downstream. The certification requires Summersville to construct angler access paths on both sides of the river and two stepping stone bridges.

50/ EA at 23-24.

to the low water stepping stone bridges, because they could pose a serious hazard to boaters on the river. A low water stepping stone bridge is a series of rocks or concrete blocks placed in the river which allow pedestrians to cross the river at low flow levels without wading through the water. Whitewater believes that these bridges could create conditions which could cause boaters to be trapped under water and drowned.

The water quality certification requires Summersville to provide alternative access and/or recreational facilities at locations in the vicinity of the project site if the Park Service does not approve the proposed riverside facilities. For the reasons discussed above and in the EA, these facilities should not be built. Therefore, we strongly urge the Park Service to reject these proposed facilities.

With regard to the stepping stone bridges, we, too, are concerned that such bridges would pose a hazard to boaters who use the river during lower flows, and to anglers during flow levels that are slightly higher than the bridges are designed to accommodate. At such flows, the bridges could be submerged but visible to the anglers, tempting the anglers to use the bridges; under these circumstances, someone attempting to use the bridge could be swept into the river. Commission staff communicated these safety concerns to West Virginia DNR, and by letter telefaxed to the Commission on September 15, 1992 (formal letter to follow), West Virginia DNR agreed to delete the water quality certification's requirement (at paragraph 3.C.IV) for stepping stone bridges. In its place, West Virginia DNR intends to insert the following new paragraph:

The Licensee shall design and install unspecified access improvements (to be determined by the Licensee and WVDNR) in the project vicinity at an expense comparable to designing, installing and maintaining two stepstone bridges on the Gauley River downstream of the project site, as per agreement reached between the Licensee and the WVDNR prior to issuance of State Certification.

We are issuing the license for Project No. 10813 now, even though the substitution of new paragraph 3.C.IV of the project's water quality certification will not be effective until West Virginia DNR formally amends the certification. However, by license Article 412 we are reserving our authority to amend the license to reflect adoption of procedures, to be developed through discussions with West Virginia DNR and, as appropriate, the Park Service, to ensure that any access improvements required under new paragraph 3.C.IV of the certification will, in the Commission's judgment, not pose a safety hazard.

F. Recreation and Aesthetic Resources

The Park Service and intervenors West Virginia Professional River Outfitters (Outfitters) are concerned that modifications in the volume or scheduling of flows released into the Gauley River below the project could adversely affect the NRA and whitewater boating on the river. Whitewater rafting and boating on the Gauley River below the Summersville Dam are extensive. The EA notes that in 1990 over 30,000 people boated the river during the fall draw-down, and estimated that at current use levels, recreational boating on the Gauley River adds 35 million dollars to the West Virginia economy. 51/ Any significant change in the volume or scheduling of flows released from the Summersville Dam could have a major adverse impact on recreational boating on the Gauley.

The Corps is required to provide 20 days of whitewater boating releases (2,500 cfs minimum) starting the first weekend after Labor Day every year. 52/ The EA notes that the current agreement between the Corps, the commercial rafting outfitters, and West Virginia DNR provides for 22 days of whitewater releases. 53/ These releases are scheduled Friday through Monday for five weeks and Saturday and Sunday for an additional week. Summersville agrees to generate power only from the flows that are provided by the Corps.

Article 402 requires Summersville to operate the project as directed by the Corps, using flows provided by the Corps and maintaining the current minimum flow regime. Article 402 further provides that the specified mode of operations may be modified only in the event of an emergency or for short periods upon mutual agreement among Summersville, the Corps, West Virginia DNR, the Park Service, and the U.S. Fish and Wildlife Service (FWS). Since Summersville must generate power only from the flows that are made available by the Corps and must maintain the

51/ EA at 28.

52/ Water Resources Development Act of 1986, Pub. L. No. 99-662, 100 Stat. 4082, 4225.

53/ Outfitters believe that the EA's recommendations do not adequately address the additional two days of whitewater flows (the two-day weekend). Since the license requires Summersville to use only those flows made available by the Corps and also requires the agreement of the Corps, Park Service, and West Virginia DNR to modify flow releases, the current 22-day whitewater draw-down season is adequately protected.

present minimum flow regime, the operation of the project will not have any effect on the volume or timing of flows in the Gauley River below the Summersville Dam.

Fayette County Chamber of Commerce, Outfitters, and Class VI River Runners (collectively, Fayette), the Park Service, and American Rivers are concerned that the construction and operation of the project will adversely affect whitewater boating on the Gauley River. Most whitewater boaters entering the Gauley River use one of the three put-ins located below the Summersville Dam. The upper put-in, located just below the present outlet works, and the lower put-in, located about 500 feet downstream, are used extensively by commercial rafting operations. Between the upper and lower put-ins there is an undeveloped path which leads to the river. This path is used primarily by private boaters, most of whom are kayakers. The commenters are concerned that the powerhouse and new valve house will make the upper put-in unusable.

The EA states that an inspection of the site of the new powerhouse and existing boating access points by the commenters, Summersville, FWS, and the Commission's staff revealed that the middle and lower put-ins would not be adversely affected by the project, but that the upper put-in would be. Pursuant to agreements with the Park Service and West Virginia DNR, Summersville will construct a new upper put-in and upgrade the trail leading to the middle put-in. The Memorandum of Understanding, as incorporated in Article 410 of the license, requires Summersville to construct these access improvements before the start of project construction. Article 410 requires Summersville to consult with the Park Service, the Corps, Whitewater, and Outfitters in the design and location of the put-in and other recreation facilities required in the MOU with the Park Service.

Whitewater is concerned that the appearance of the powerhouse and transmission line will adversely affect the aesthetic quality and character of the upper put-in. The proposed powerhouse and valve house will be a substantial structure (approximately 240 feet x 60 feet x 50 feet) and will be visible from the put-in area and from an overlook on U.S. Route 219. The EA recommends that Summersville, in consultation with the Corps and the Park Service, select colors and textural finishes for the exterior of these structures which will blend in with the existing landscape. 54/ Article 409 adopts this recommendation and requires Summersville to file and implement a plan to minimize the visual impacts of structures. The visual

54/ EA at 26.

impact of the new structures will be further reduced by their proximity to the dam, which is 2,280 feet long and 390 feet tall.

Whitewater is also concerned that the reduction or elimination of discharges through the Howell-Bunger valves will adversely affect the aesthetic quality of the upper put-in by eliminating the spray and mist effects that occur when flows are released from the Howell-Bunger valves. 55/ We agree that this will occur, but note that the license ensures continued access to the Gauley River and continuity in river flows such that boaters will continue to enjoy the river. In balancing the power and non-power benefits of the project and the recreational and aesthetic benefits and values of the mist and spray effects of the Howell-Bunger valves, we find that the benefits of developing the project outweigh the adverse effect that will be caused by the loss of the spray and mists at the upper put-in. 56/

The Park Service and Fayette are concerned that construction-related traffic could adversely affect recreational use of the Gauley River during the fall draw-down season. 57/ They believe that the single access road into and out of the project site does not have the capacity to handle construction-related and recreational traffic and ask that Summersville limit construction-related traffic during the draw-down period. In its motion to intervene, Fayette requested that no construction take place on Friday through Monday during the draw-down, including the annual four-day Gauley River Festival. Fayette also asks that Summersville be required to store all construction equipment and materials in the construction staging area on the east bank of the river to avoid conflict with boaters using the put-ins on the west bank.

The MOU between Summersville and the Park Service, which is incorporated in the license by Article 410, requires Summersville to suspend transportation of material and equipment to the construction site between 7:00 a.m. and 12:00 noon during the

55/ The spray and mist occur due to the large decrease in pressure when the water passes from the outlet pipe and out through the valve. The effect is similar to that which occurs with a spray nozzle on a garden hose.

56/ In weighing the benefits and impacts, we have also considered that the spray and mists at the upper put-in are themselves not of natural origin, but are a product of the existing man-made dam.

57/ See n. 30, supra.

fall draw-down season when recreational flows are planned. Article 410 also requires Summersville to suspend all construction activities during the four-day Gauley River Festival, and to confine storage of construction material and equipment to the planned staging area during the fall draw-down period. Fayette agreed that suspending transportation of equipment and materials between 7:00 a.m. and 12:00 noon during the draw-down season is satisfactory, because most of the boaters access the river during those hours. Article 410 also requires Summersville to maintain the access road during the period of project construction. These provisions in the license should ensure that project construction will not have significant adverse impacts on access to the river during the fall draw-down period.

Fayette and the Park Service are concerned that the cost estimates used by Summersville for the recreational facilities are lower than the actual costs of the facilities and ask that these estimates not be treated as caps. The figures used in the EA are only estimates. Their purpose is to permit a comparison of the costs of various alternatives and to determine what effect constructing and operating these facilities will have on the financial feasibility of the project. The terms and conditions of the license require Summersville to construct or provide particular recreational facilities and do not create monetary limits on Summersville's obligations to provide recreational facilities.

Whitewater contends that the EA fails to give equal consideration to the protection of recreational opportunities, as required by Section 4(e) of the FPA. Whitewater cites the omission of Whitewater from the list of entities to be consulted in the preparation of the landscaping plan and the design of the recreational facilities contained in the MOU between Summersville and the Park Service. It also notes that the stepstone bridges and angler access trails, which are required in the water quality certification, were planned without consultation with Whitewater, and are in its view dangerous to recreationists.

Section 4(e) requires the Commission to give equal consideration to developmental and non-developmental purposes of a proposed project, but does not mandate a particular outcome or require equal treatment of these purposes. With regard to recreation, the EA examined the effects of the project on recreational opportunities in the surrounding area and recommended several measures to enhance recreation. The license adopts these recommendations. We have also recommended that the stepstone bridges and angler access trails not be constructed. Whitewater's disagreement with mandatory conditions contained in the water quality certification does not alter the fact that the

Commission has given equal consideration to recreational values in reaching its decision in this proceeding.

G. Endangered, Threatened, and Rare Species

The Park Service is concerned that the construction of some of the recreational facilities could adversely affect populations of Virginia spirea (*Spirea virginiana*), a federally listed threatened species. This shrub has been found in only 18 locations in five states. It grows in disturbed habitats along the scoured banks of high gradient streams. 58/ The EA states that a 1990 survey found Virginia spirea occurring on the left bank of the Gauley River from about one mile below the project to the confluence of the Gauley and Meadow Rivers.

The EA states that potential impact on Virginia spirea or its habitat can be avoided by careful siting of recreational facilities, and that the facilities proposed in the MOU between Summersville and the Park Service would not be located in areas where spirea are found. 59/ The Park Service is concerned that the facilities that are required by the water quality certification could adversely affect existing Virginia spirea or suitable habitat that is available for the species' expansion. The renovated access road for fish stocking, angler access trails, and low-water stepping-stone bridges required by the water quality certification could significantly increase the number of people using the river banks and increase the likelihood that Virginia spirea are trampled, cut down, or collected. 60/ As discussed above, we disagree with West Virginia DNR's recommendation to provide these facilities along the stream banks; and as the EA states, avoiding impacts is preferable to developing mitigative measures. We have therefore recommended that the river bank facilities requested by West Virginia DNR not be built.

58/ The project area is also within the range of running buffalo clover (*Trifolium stoloniferum*), a federally listed endangered species. A field reconnaissance found no suitable running buffalo clover habitat in areas which might be affected by project construction.

59/ EA at 22-23.

60/ The EA notes that one reason that the critical habitat for Virginia spirea has not been determined is because publication of critical habitat descriptions and maps would increase the vulnerability of the species to increased collection and vandalism. (EA at 23, n. 4.)

However, as discussed above, all of these facilities are included as conditions of the water quality certification and therefore must be included in the license. Since our responsibilities under the Endangered Species Act must be carried out if Summersville is required to construct these facilities, 61/ we are including Article 407 in the license, which requires Summersville to file and implement a plan to protect the Virginia spirea and its habitat.

The Park Service is also concerned that construction of the downstream river bank recreational facilities could adversely affect Barbara's buttons (*Marshallia grandiflora*), a candidate for listing as a threatened or endangered plant species, which exist along the Gauley River below the Summersville Dam. The nearest population of Barbara's buttons is located on the right bank of the river about 3,000 feet downstream from the dam. The facilities required by the MOU between Summersville and the Park Service would also not affect populations of Barbara's buttons. However, the facilities required by the water quality certification could adversely affect Barbara's buttons in the same manner as Virginia spirea. The habitat for Barbara's buttons is very similar to that of Virginia spirea, so the effects of the proposed facilities on the two species would be essentially the same. The Park Service states that its policy is to treat candidate species as listed species. Because of the project's relationship to the Recreation Area, we are including Barbara's buttons in the protection plan required by Article 407.

H. Economic Feasibility

Fayette and Whitewater contend that the revenue figures used to calculate the economic feasibility of the project are too high and have resulted in an inflated estimate of the economic benefits of the project. 62/ They argue that a rate of 59

61/ Section 7(a)(2) of the Endangered Species Act, 16 U.S.C. 1536(a)(2), requires Federal agencies to ensure that their actions are not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of these species' habitats. Since Virginia spirea is a listed threatened species, the Commission must ensure that licensing this project will not jeopardize the existence of Virginia spirea or adversely affect its habitat.

62/ Whitewater contends that the economic analysis in the EA does not comply with the standards contained in publication No. DPR-1, "Evaluating the Economics of Hydroelectric
(continued...)

mills per kilowatt hour (mills/kWh) for project power is higher than Allegheny Power Systems, Inc. is currently paying, and that the current avoided cost of 15 mills/kWh should be used in calculating the financial feasibility of the project.

The economic evaluation of the project that was performed in the EA was based on Summersville's projection that it would be able to sell the project's power output to Monongahela Power Company, a subsidiary of Allegheny Power Systems, Inc., for 59 mills/kWh. After the EA was published, Summersville filed, as support for this assumption, a copy of a 1987 15-year contract for the sale of power at 74 mills/kWh from another licensed hydroelectric project to another subsidiary of the Allegheny Power System. However, the power market has changed dramatically since 1987.

In May 1992 the Commission revised its long-term estimates of regional energy values based on the Department of Energy, Energy Information Administration's (EIA) publication ANNUAL ENERGY OUTLOOK for 1992. Based on EIA's fuel cost data for the region, we now estimate that the 1994, 50-year levelized alternative energy cost would be about 41 mills/kWh. We therefore calculate the internal rate of return for the project, will all of the mitigation measures except the dissolved oxygen (DO) maintenance requirements, at about 8.2 percent. If the DO maintenance requirements are met by use of an oxygen injection system, we estimate the rate of return at 8.1 percent, whereas if

62/ (...continued)

Projects at the Federal Energy Regulatory Commission." Whitewater claims that the Commission's standards require that a project have an internal rate of return that is 5.0 to 5.5 percent higher than the interest rate the licensee will have to pay for financing. The publication Whitewater cites, which was issued by the Commission's Office of Hydropower Licensing in September 1989, is a description of the general criteria used by the Commission staff in reviewing the economic feasibility of a project, and does not bind the Commission's decisionmaking. In any event, Whitewater has misinterpreted the information in the publication. The publication states that Commission staff uses a hurdle rate of 7.5 to 8.0 percent (rates generally available for municipal bonds with minimal risk) to decide whether a project should be licensed. The publication also states that there is a rate of return spread of 5.0 to 5.5 percent between those projects which the Commission staff recommends be denied as economically infeasible and those projects which are attractive enough to potential investors that they will probably be built.

those requirements are met by spilling water over the dam for three months, the annual generation would drop from about 198 GWh to about 165 gWH, and the rate of return would fall to about 6.9 percent.

As a general matter, in the last several years we have considered hydroelectric projects with internal rates of return between 6 and 8 percent to be unattractive to investors, but potentially feasible, and projects with rates of return of less than about 6 percent to be not financeable. 63/ In light of the above, the project may not be economically beneficial. However, there are many factors that affect project economics, and a change in any one of those factors could improve the project's economic benefits. The applicant may, for example, be able to obtain financing at a rate lower than the 11 percent rate we assumed in our calculations; to construct the project for less than we projected; or to sell the project power for more than we estimated.

Whether a licensed project is actually built is ultimately decided by the marketplace. If a licensee is unable to obtain financing, the project will not be developed. Article 316 requires Summersville to file a financing plan prior to commencing construction which shows that Summersville has acquired the funds, or commitments for funds, necessary to construct the project in accordance with this license. This will ensure that the environment is not unnecessarily disturbed by a partially constructed project that is abandoned due to lack of funds.

Whitewater contends that the EA should have analyzed the action alternative of adopting energy conservation measures instead of constructing the new generating capacity represented by the proposed project. A discussion of energy conservation measures was not included in the EA, because Summersville has no distribution system and no end-use customers. As a result, Summersville itself has no opportunity to engage in programs to promote energy conservation and efficiency by end-use customers or to promote load management programs designed to reduce peak energy demands. The need for power analysis used the load and resource projections of the Allegheny Power System (the assumed receiving power system) reported by the East Central Area Reliability Coordination Agreement reliability council. Those projections include the effects of projected economical load

63/ See, e.g., Allegheny Electric Cooperative, et al., 48 FERC 61,363 (1989) at p. 62,341 n. 217; Hydroelectric Development, Inc., 55 FERC 61,474 (1991) at p. 62,558 n. 12.

management and energy conservation measures on internal power demand. Accordingly, Whitewater's concerns about energy conservation measures were considered in determining Allegheny's need for power rather than as an alternative to hydropower development.

I. NEPA Considerations

Whitewater and the Park Service contend that the construction of the project constitutes a major federal action significantly affecting the quality of the human environment such that the Commission must prepare an Environmental Impact Statement (EIS) prior to making a decision on Summersville's application. Our decision not to prepare an EIS but to issue the license based on the EA fulfills the requirements of the National Environmental Policy Act. 64/ The relevant issues are: (1) whether the areas of environmental concern have been accurately identified; (2) whether a "hard look" has been taken at the environmental issues; (3) whether a convincing case has been made for the finding of no significant impact; and, (4) if there is an impact of true significance, whether the impact has been significantly reduced as a result of changes or safeguards in the project. 65/ The EA provides a detailed analysis which has addressed all of the important environmental considerations, including the project's impacts on geology and soils, water resources, fishery resources, terrestrial resources, threatened and endangered species, aesthetic resources, cultural resources, recreation, land and water use, and socioeconomic considerations. Where potential impacts from the project have been identified, the EA has recommended mitigative measures which have been included in the license. Through the analysis in the EA, the Commission has taken the requisite "hard look" at the environmental effects of this project, and our finding that issuing this license will not significantly affect the human environment is supported by substantial evidence.

Whitewater claims that the Commission must prepare an EIS because of the project's impact on the aesthetic character of the put-in area immediately below the Summersville Dam. Our decision to issue a license for this project based on the information contained in the EA does not violate NEPA. The courts have held that decisions on aesthetic impacts generally do not require

64/ 42 U.S.C. 4321 et seq.

65/ See *Humane Society of the United States v. Hodel*, 840 F.2d 45, 62 (D.C. Cir. 1988); *Sierra Club v. U.S. Department of Transportation*, 753 F.2d 120, 127 (D.C. Cir. 1985).

the preparation of an EIS. 66/ The EA considered the effects of the powerhouse and transmission lines on the aesthetic character of the area below the dam, stating that project construction will cause several adverse aesthetic effects. The operation of equipment and machinery will produce noise and dust. Cleared vegetation, cofferdams, construction buildings, and staging areas will temporarily degrade the appearance of the project area. The EA concluded that through proper landscaping and other control measures these impacts can be mitigated. The erosion and sedimentation control plan required by Article 401 will include measures necessary to mitigate the short-term adverse aesthetic impacts that will occur during project construction.

J. Comprehensive Plans

Section 10(a)(2)(A) of the FPA 67/ requires the Commission to consider the extent to which a project is consistent with comprehensive plans prepared by appropriate federal and state agencies for improving, developing, or conserving a waterway or waterways affected by the project. The Commission treats as a comprehensive plan one that is prepared by a state or federal agency authorized to prepare such a plan; is a comprehensive study of one or more of the beneficial uses of a waterway or waterways; includes a description of the standards applied, the data relied upon, and the methodology used in preparing the plan; and is filed with the Secretary of the Commission. 68/ Federal and state agencies filed thirteen comprehensive plans that address various resources in West

66/ Friends of the Ompompanoosuc and the State of Vermont v. FERC, Nos. 92-4013 and 92-4015 (2d Cir. July 8, 1992); River Road Alliance v. Corps of Engineers, 764 F.2d 445 (7th Cir. 1985). In River Road, the court stated:

[a]esthetic objections alone will rarely compel the preparation of an environmental impact statement. Aesthetic values do not lend themselves to measurement or elaborate analysis. The necessary judgments are inherently subjective and normally can be made as reliably on the basis of an environmental assessment as on the basis of a much lengthier and costlier environmental impact statement.

764 F.2d at 451 (citations omitted).

67/ 16 U.S.C. 803(a)(2)(A).

68/ 18 C.F.R. 2.19 (1992).

Virginia. Of these, we identified and reviewed two plans that are relevant to this project. 69/ No conflicts were found.

K. Recommendations of Federal and State Fish and Wildlife Agencies

Section 10(j) of the FPA 70/ requires the Commission to include license conditions based on recommendations filed pursuant to the Fish and Wildlife Coordination Act by federal and state fish and wildlife agencies for the protection, mitigation, and enhancement of fish and wildlife. As discussed above, the EA for the Summersville Project addresses the concerns of the federal and state fish and wildlife agencies, and the license includes conditions consistent with the recommendations of the agencies.

L. Conclusion

For the reasons discussed above and in the EA and the Safety and Design Assessment attached to this order, we conclude that the record before us supports issuance of a license to the Town of Summersville, West Virginia, to construct, maintain, and operate the Summersville Hydroelectric Project, as conditioned by the license articles adopted herein.

The Commission orders:

(A) This license is issued to Town of Summersville, West Virginia (licensee), for a period of 50 years, effective the first day of the month in which this order is issued, to construct, operate, and maintain the Summersville Dam Project. This license is subject to the terms and conditions of the Federal Power Act (FPA), which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

69/ The two relevant plans are the Gauley River Basin plan, published in 1984 by West Virginia DNR; and the West Virginia statewide comprehensive outdoor recreation plan 1988-1992, published in 1989 by the West Virginia Governor's Office of Economic and Community Development.

70/ 18 U.S.C. 803(j).

(B) The project consists of:

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

Exhibit G-	FERC No. 10813-	Showing
1	4	Project Plan
2	5	Project Plan

(2) Project works consisting of: (a) three penstocks, each 11 feet in diameter, connected to the existing outlet conduits, and a fourth 3-foot-diameter penstock which is an extension from penstock No. 3 to a small turbine; (b) a powerhouse with three 24 MW and one 8 MW turbine-generators, and a total installed capacity of 80 MW; (c) a new valve house with three large and one small Howell-Bunger valves; (d) a tailrace; (e) an 8-mile-long, 3-phase, 138-kV transmission line; and (f) appurtenant facilities.

The project works generally described above are more specifically shown and described by those portions of exhibits A and exhibit F below:

Exhibit A:

Pages A-2 through A-6, and Table A-2, describing the proposed mechanical, electrical and transmission equipment, filed July 31, 1989.

Exhibit F -	FERC No.	Description
Sheet 1	10813-1	Project Layout
Sheet 2	10813-2	Powerhouse Details
Sheet 3-A	10813-3	Layout of Stage 1 of Cofferdam
Sheet 3-B	10813-4	Layout of Stage 2 of Cofferdam
Sheet 3-C	10813-5	Layout of Stage 3 of Cofferdam

(3) All of the structures, fixtures, equipment, or facilities used to operate or maintain the project, all portable property that may be employed in connection with the project, and

all riparian or other rights that are necessary or appropriate in the operation or maintenance of the project.

(C) The exhibits A, F, and G described above are approved and made part of the license.

(D) This license is subject to the articles set forth in Form L-6 (October 1975), entitled "Terms and Conditions of License for Unconstructed Major Project Affecting Navigable Waters and Lands of the United States," except Article 20, and the following additional articles:

Article 201. The licensee shall pay the United States the following annual charges as determined by the Commission, effective the first day of the month in which this license is issued for the purposes of:

a. Reimbursing the United States for the cost of administration of Part I of the FPA. The authorized installed capacity for that purpose is 106,660 horsepower.

b. Recompensing the United States for utilization of surplus water or waterpower from a government dam.

Article 202. The licensee shall clear and keep clear to an adequate width all lands along open conduits and shall dispose of all temporary structures, unused timber, brush, refuse, or other material unnecessary for the purposes of the project which result from maintenance, operation, or alteration of the project works. In addition, all trees along the periphery of project reservoirs which may die during operations of the project shall be removed. All clearing of lands and disposal of unnecessary material shall be done with due diligence to the satisfaction of the authorized representative of the Commission and in accordance with appropriate federal, state, and local statutes and regulations.

Article 301. The licensee shall commence construction of the project works within two years from the issuance date of the license and shall complete construction of the project within five years from the issuance date of the license.

Article 302. The licensee shall, at least 60 days prior to the start of construction, submit one copy to the Commission's Regional Director and two copies to the Commission (one of these shall be a courtesy copy to the Director, Division of Dam Safety and Inspections) of the final contract drawings and specifications for pertinent features of the project, such as water retention structures, powerhouse, and water conveyance structures. The Commission may require changes in the plans and

specifications to assure a safe and adequate project. If the licensee plans substantial changes to location, size, type, or purpose of the water retention structures, powerhouse, or water conveyance structures, the plans and specifications must be accompanied by revised Exhibit F and G drawings, as necessary.

Article 303. Before starting construction, the licensee shall retain a board of three or more qualified independent engineering consultants experienced in critical disciplines such as geotechnical, mechanical, and civil engineering, to review the design, specifications, and construction of the project for safety and adequacy. The licensee shall submit two copies of a letter with the names and qualifications of the board members (one of these shall be a courtesy copy sent to the Director of the Division of Dam Safety and Inspections) for the Commission's approval of the board, and one copy shall be sent to the Commission's New York Regional Director. Among other things, the board shall assess the following: the geology of the project site and surroundings; the design, specifications, and construction of the powerhouse, electrical and mechanical equipment, and emergency power supply; instrumentation; and construction procedures and progress.

Before each meeting, the licensee shall furnish members of the board of consultants the following: (1) a statement of the specific level of review the board is expected to provide; (2) an agenda for the meeting; (3) a list of the items to be discussed with the board; (4) a discussion of significant events in the design and construction that have occurred since the last board meeting; (5) drawings of the design and construction features; and (6) documentation for the details and analyses of the design and construction features to be discussed. The licensee shall ensure that the board of consultants has sufficient time to review these items before each meeting. At the same time as a copy of these items is provided to the board of consultants, the licensee shall also send two copies to the Commission (one of these shall be a courtesy copy sent to the Director of the Division of Dam Safety and Inspections) and one copy to the Director of the Commission's New York Regional Office.

Within 30 days after each board of consultants meeting, the licensee shall submit to the Commission copies of the board's report and a statement of intent to comply with the board's recommendations or a statement of a plan to resolve the issue(s). The licensee must provide detailed reasons for any recommendation of the board not being implemented. The licensee shall send two copies of this submission to the Commission (one of these shall be a courtesy copy sent to Director of the Division of Dam Safety and Inspections) and one copy to the Director of the Commission's New York Regional Office.

The board's review comments shall be submitted prior to or simultaneously with the submission of the final contract drawings and specifications accompanied by a supporting design report required to be filed with the Commission in accordance with Article 302. Within one year after completion of construction, the licensee shall file two copies with the Commission (one of these shall be a courtesy copy to the Director Division of Dam Safety and Inspections) of the Board's final report which shall contain a statement indicating the Board's opinion with respect to the construction, safety, and adequacy of the project structures.

Article 304. The design and construction of those permanent and temporary facilities, including cofferdams and deep excavations, that would be an integral part of, or that could affect the structural integrity or operation of, the Government project shall be done in consultation with and subject to the review and approval of the Corps of Engineers' Division Engineer. The Corps shall review the cofferdams to ensure that the operation and structural integrity of the federal project are not compromised. This review of the cofferdams will be in addition to the licensee's review and approval of the final plans, and shall in no way relieve the licensee of responsibility and liability regarding satisfactory performance of the cofferdams. Within 90 days from the issuance date of the license, the licensee shall furnish the Corps and the Commission's Regional Director with a schedule for submission of design documents and the plans and specifications for the project. The schedule shall provide sufficient time for review and approval by the Corps. If the Corps does not believe sufficient time has been provided, the licensee, upon request of the Corps, shall meet with the Corps and the Commission's staff to revise the schedule accordingly.

Article 305. The licensee shall review and approve the design of contractor-designed cofferdams and deep excavations other than those approved according to Article 304 prior to the start of construction, and shall ensure that construction of cofferdams and deep excavations is consistent with the approved design. At least 30 days prior to start of construction of the cofferdam, the licensee shall file two copies with the Commission (one of these shall be a courtesy copy sent to the Director, Division of Dam Safety and Inspections) and submit one copy each to the Commission's New York Regional Director and the Corps, of the approved cofferdam construction drawings and specifications and the letter(s) of approval.

Article 306. Within 90 days from the issuance date of the license, the licensee shall enter into an agreement with the Corps to coordinate plans for access to and site activities on lands and property administered by the Corps so that the

authorized purposes, including operation of the federal facilities, are protected. In general, the agreement shall identify the facility, and the study and construction activities, as applicable, and terms and conditions under which studies and construction will be conducted. The agreement shall include, but not be limited to, reasonable arrangements for access to the Corps' site to conduct studies and construction activities, such access rights to be conditioned by the Corps as may be necessary to protect the federally authorized project purposes and operations. Should the licensee and the Corps fail to reach an access agreement, the licensee shall refer the matter to the Commission for resolution, summarizing the areas of disagreement. Two copies of the final agreement shall be filed with the Commission (one of these shall be a courtesy copy sent to the Director of the Division of Dam Safety and Inspections), and one additional copy shall be filed with the Commission's Regional Director.

Article 307. The construction, operation, and maintenance of the project works that, in the judgment of the Corps, may affect the structural integrity or operation of the Corps' project shall be subject to periodic or continuous inspections by the Corps. Any construction, operation, and maintenance deficiencies or difficulties detected by the Corps' inspection shall be immediately reported to the Commission's Regional Director. Upon review, the Regional Director shall refer the matter to the licensee for appropriate action. In cases when construction, operation, or maintenance practices or deficiencies may create a situation posing imminent danger to the structural integrity and safety of the Corps' project, on direction of the Corps' inspector the licensee shall stop construction, operation, or maintenance activities on the project works. The licensee shall immediately inform the Commission's Regional Director of the circumstances surrounding the cessation of construction, operation, or maintenance activities. The licensee shall not resume construction, operation, or maintenance activities until notified by the Commission's Regional Director that the problem or situation has been resolved to the satisfaction of the Regional Director.

Article 308. At least 60 days prior to start of construction, the licensee shall submit to the Corps for approval an operations plan describing: (a) the licensee's designed mode of hydropower operation at the project; (b) reservoir flow diversion and regulation requirements as established by the Corps for operation of the Corps project during construction; and (c) integration of the operation of the hydroelectric facility into the Corps' Emergency Action Plan. The licensee shall file one copy of the operations plan with the Regional Director and two copies with the Commission. In addition, the licensee, prior to

start of power plant operation, shall enter into an operating Memorandum of Agreement (MOA) with the Corps describing the detailed operation of the power facilities acceptable to the Corps. The MOA shall specify any restrictions needed to protect the primary purposes of the Corps' project, including navigation, recreation, water quality, and flood control. The Regional Director shall be invited to attend any meetings held regarding the agreement. The MOA shall be subject to revision by mutual consent of the Corps and the licensee, as experience is gained through project operation. Should the licensee and the Corps fail to reach an agreement, the matter will be referred to the Commission for resolution, with a summary of the areas of disagreement. Two copies of the signed MOA between the Corps and the licensee shall be filed with the Commission (one of these shall be a courtesy copy sent to the Director of the Division of Dam Safety and Inspections) and one additional copy submitted to the Commission's New York Regional Director.

Article 309. The Corps reserves the right to alter, without liability, pool levels or discharge through the outlet works for water management purposes. The licensee shall have no claim under this license against the United States arising from the effect of any changes made in the structure, operation, or reservoir levels of the Corps' project.

Article 310. The licensee shall provide the Commission's New York Regional Director an original and two copies of all correspondence between the licensee and the Corps. The Regional Director shall not authorize construction of any project work affecting the Corps' facilities until the Corps' written approval of the project's (1) construction plans and specifications, (2) quality control and inspection program, and (3) temporary emergency action plan have been received by the Regional Director.

Article 311. The licensee shall submit the design drawings and computations of the proposed cofferdams to the National Park Service for review and recommendations before the start of construction. This review shall be coordinated with the Corps review under Article 304.

Article 312. The licensee shall conduct a study of potential hydraulic transients in the dam's discharge conduit, which will act as the conduit to the new powerhouse, under proposed project operating conditions, including unusual or emergency conditions. Based on the results of the transient conditions studies, the Corps may require the licensee to incorporate surge tank(s) and other facilities into the proposed project to protect the structural integrity of the outlet works. The licensee shall bear the costs of such facilities.

Article 313. The licensee shall construct and test a physical hydraulic model of the system to determine if an unacceptable flow pattern would be created in the conduit at the relocated valve site. The model also must be capable of investigating conditions in the new tailrace channel. The physical model test specifications and requirements will be prepared by the Corps' Huntington District. The licensee shall reimburse the Corps for its expenses associated with this model. The licensee shall provide a copy of the final project design drawings to the Corps' Huntington District as soon as they are completed.

Article 314. In order to ensure the safe operation of the Corps' project during times of high flow conditions, the licensee shall schedule the relocation of the Howell-Bunger valves so that any temporary reduction in the Corps' project discharge capacity would occur only in those periods of the year which will be specified by the Corps' Huntington District.

Article 315. Within 90 days after completion of construction, the licensee shall file for Commission approval eight copies of the revised exhibits A, F, and G describing the project facilities as built. The licensee shall submit six copies to the Commission, one copy to the Commission's Regional Director, and one to the Director, Division of Project Compliance and Administration.

Article 316. At least 90 days before starting construction, the licensee shall file with the Director, Division of Project Compliance and Administration, three copies of a project financing plan. The plan must show that the licensee has acquired the funds or commitment for funds necessary to construct the project in accordance with this license. The licensee shall not start any project construction or any ground-disturbing activities, that are inseparably associated with the project, (other than those required for subsurface site exploration) without Commission approval of the project financing plan.

Article 401. The licensee shall implement the erosion and sediment control plan filed July 31, 1989, consisting of five pages, and revisions to the plan filed May 30, 1990, as Additional Information Item No. 4, including five drawings labelled Figures A through E. The plan is designed to minimize erosion and sedimentation impacts during project construction. The licensee shall file the final drawings, specifications, and schedule for implementing the plan along with the final project drawings and specifications required by Article 302. The final drawings and specifications for the plan shall include a detailed description of proposed landscape restoration and improvement measures, including the appropriate revegetation of disturbed

areas; shall be based on the final project design; shall be prepared in consultation with the West Virginia Division of Natural Resources Program Management Technical Support Group, the Soil Conservation Service, the West Virginia Professional River Outfitters, the American Whitewater Affiliation, the National Park Service Gauley River National Recreation Area manager, and the Department of the Army, Huntington District Corps of Engineers; and shall be prepared in accordance with the guidelines set forth in the "Construction Best Management Practice Manual", West Virginia Division of Natural Resources Division of Water Resources, 1983. The filing shall also include documentation of agency consultation.

The Commission reserves the right to require changes to the plan, drawings, specifications, and schedule to ensure proper control of erosion and discharge of sediment to wetlands and watercourses, and to ensure appropriate restoration and improvement of the project area landscape. The licensee shall implement the erosion and sediment control and landscape restoration and improvement measures according to the final drawings, specifications, and schedule, including any changes required by the Commission.

Article 402. The licensee shall operate the Summersville Project as directed by the Corps. For the protection of water quality, aquatic resources, scenic resource values, and recreation resources in the Gauley River, the licensee shall operate the Summersville Project utilizing flows as provided by the Corps and maintaining the minimum flow discharges at all times, as provided by the Corps. The specified mode of operation may be temporarily modified, if required by operating emergencies beyond the control of the licensee, or for short periods only upon mutual agreement among the licensee, the Corps, the U.S. Fish and Wildlife Service, the National Park Service, and the West Virginia Division of Natural Resources. If the flow is so modified, the licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident.

Article 403. At least 90 days before the start of land-disturbing or land-clearing activities, the licensee shall file with the Commission for approval a plan to measure and report project flows and operation records to monitor compliance with the mode of operation as stipulated in Article 402.

The licensee shall prepare the plan after consultation with the U.S. Geological Survey (USGS), the Corps, the National Park Service, and the West Virginia Division of Natural Resources (WVDNR). The licensee shall include with the plan documentation of consultation and copies of comments and recommendations on the completed plan after it has been prepared and provided to the

agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations prior to filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The plan shall include but not be limited to: (1) an implementation schedule; (2) the proposed location, design, and calibration of gaging equipment; (3) the method of flow data collection; and (4) a provision for providing flow data to the Corps, USGS, and the WVDNR within 30 days from the date of the agency's request for the data.

The Commission reserves the right to require changes to the plan. No land-clearing or land-disturbing activities shall begin until the licensee is notified that the plan is approved. Upon Commission approval the licensee shall implement the plan, including any changes required by the Commission.

Article 404. During operation of the Summersville Project, the licensee shall at all times maintain a minimum dissolved oxygen (DO) concentration of at least 7.0 milligrams per liter (mg/l) in the Gauley River as measured immediately downstream of the project tailrace, to protect aquatic resources of the Gauley River. At least 90 days before the start of any land-disturbing or land-clearing activities, the licensee shall file with the Commission for approval a plan to install, operate, and maintain permanent, continuously recording water temperature and DO monitoring devices to monitor DO concentrations and water temperature in the project tailrace.

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

The plan shall include but not be limited to: (a) a detailed description of the methods for monitoring DO concentrations and water temperature levels and the location at

which DO and temperature will be monitored; (b) a proposal whereby project operation could be rapidly altered to ensure maintenance of at least 7.0 mg/l, including project shutdown; and (c) a schedule for implementing the monitoring plan and for filing water quality records with the Commission and the consulted agencies.

The Commission reserves the right to require changes to the plan. No land-clearing or land-disturbing activities shall begin until the licensee is notified that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

If the results of monitoring indicate that changes in project structures or operation are necessary to ensure maintenance of at least 7.0 mg/l in the Gauley River immediately downstream of the project tailrace, the Commission may direct the licensee to modify project structures or operation.

Article 405. The licensee shall implement the transmission line management plan, filed July 31, 1989, as pages E-3-11 of Exhibit E; and page 9, figure 1, and figure 7 of Appendix III; of its license application. This plan will protect wildlife habitat along the transmission line right of way.

Article 406. The licensee shall 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 Raptor Research Foundation, Inc., to protect raptors from electrocution hazards. Further, after consulting with the U.S. Fish and Wildlife Service, the National Park Service, the West Virginia Division of Natural Resources, and the Corps' Huntington District, and within one year from the date of issuance of the license, the licensee shall file a transmission line design plan that considers adequate separation of energized conductors, groundwires, and other metal hardware, adequate insulation, and any other measures necessary to protect raptors from electrocution hazards. Agency comments on the design plan shall be included in the filing. Unless the Director of the Office of Hydropower Licensing instructs otherwise within 60 days after the filing, the licensee may begin transmission line construction at the end of the 60-day period.

Article 407. At least 90 days before any land-clearing or land-disturbing activities related to the construction of recreational facilities along the Gauley River downstream of the project's powerhouse other than those in the Summersville-National Park Service Memorandum of Understanding dated August 5, 1991, the licensee shall file with the Commission for approval a plan to protect the federally listed threatened Virginia spirea

(*Spirea virginiana*) and the candidate species Barbara's buttons (*Marshallia grandiflora*) and their habitat. The plan shall include, but not be limited to, the following:

(a) a recreation management and construction plan to avoid adverse impacts to federally listed threatened and endangered species;

(b) the results of a preconstruction survey by a qualified botanist of all areas to be disturbed by development of the recreational facilities;

(c) measures to protect the Virginia spirea, Barbara's buttons, and any other federally listed species discovered during the survey;

(d) an implementation schedule for the protection measures;

(e) a monitoring proposal and implementation schedule to evaluate the recreation facilities' effect on Virginia spirea and Barbara's buttons in the project area after completion; and

(f) an initial report on the results of monitoring to determine the effect of recreational use on Virginia spirea and Barbara's buttons during the first year of operation, prepared in consultation with the U.S. Fish and Wildlife Service (FWS) and the West Virginia Division of Natural Resources (WVDNR), which shall be submitted to the Commission within 60 days following the end of the first year of operation, including recommendations regarding the need for and a schedule for filing reports on the results of subsequent monitoring during the license term.

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

The Commission reserves the right to require changes to the plan. No land-clearing or land-disturbing activities shall begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

If the results of the monitoring program show that modifications to recreation facilities and use along the Gauley River downstream from the project's powerhouse are necessary to protect Barbara's buttons, the federally listed threatened Virginia spirea, or their habitats, the licensee shall also file, for Commission approval, recommendations for modifying the recreational facilities or use or other measures, and comments of the consulted agencies on the proposed modifications or measures. The Commission reserves the right to require changes to the proposed modifications or measures. Upon Commission approval, the licensee shall implement the proposed modifications or measures including any changes required by the Commission.

Article 408. The licensee, before starting any land-clearing or land-disturbing activities within the project boundaries, other than those specifically authorized in this license, shall consult with the State Historic Preservation Officer (SHPO).

If the licensee discovers previously unidentified archeological or historic properties during the course of constructing or developing project works or other facilities at the project, the licensee shall stop all land-clearing and land-disturbing activities in the vicinity of the properties and consult with the SHPO.

In either instance, the licensee shall file for Commission approval a cultural resource management plan prepared by a qualified cultural resource specialist after having consulted with the SHPO. The management plan shall include the following items: (1) a description of each discovered property indicating whether it is listed on or eligible to be listed on the National Register of Historic Places; (2) a description of the potential effect on each discovered property; (3) proposed measures for avoiding or mitigating effects; (4) documentation of the nature and extent of consultation; and (5) a schedule for mitigating effects and conducting additional studies. The Commission may require changes to the plan.

The licensee shall not begin land-clearing or land-disturbing activities, other than those specifically authorized in this license, or resume such activities in the vicinity of a property, discovered during construction or operation, until informed that the requirements of this article have been fulfilled.

Article 409. At least 90 days before the start of any land-disturbing or land-clearing activities, the licensee shall file with the Commission for approval a plan to: (1) minimize the visual impacts of the powerhouse, new valve house, switchyard

structures and equipment, and associated penstocks and flood release pipes to be constructed immediately downstream of Summersville Dam; and (2) avoid or further reduce the project transmission line's visual impacts and conflicts with existing and planned recreational facilities in the project area. The plan, at a minimum, shall include color scheme and textural finish specifications for the above facilities, and final alignment drawings for the transmission line.

The licensee shall prepare the plan after consultation with the Corps' Huntington District, the National Park Service, the American Whitewater Affiliation, and the West Virginia Professional River Outfitters. The licensee shall include with the plan documentation of consultation and copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and make recommendations prior to filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on site-specific conditions.

The Commission reserves the right to require changes to the plan. No land-clearing or land-disturbing activities shall begin until the licensee is notified that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 410. The licensee shall implement the measures contained in the Memorandum of Understanding (MOU) among the National Park Service, the Town of Summersville, and Noah Corporation, dated July 27, 1991, and filed with the Commission on August 9, 1991. The MOU consists of 6 pages of text. The measures contained in the MOU are designed to protect whitewater recreation and other recreational activities during and after project construction. In addition to the measures contained in the MOU, Summersville shall suspend all construction activities during the annual, four-day-long, Gauley River Festival.

At least 90 days before the start of any land-disturbing or land-clearing activities, the licensee shall file with the Commission for approval a recreation plan that contains: a description, a map, and the final design drawings and specifications for the recreation facilities required in the MOU (i.e., new whitewater raft launching facility, upgrade of the access trail to the existing kayak launching area, new restroom and changing facility, picnic tables, and interpretive and informational signs). In addition, the licensee shall include in the plan a tailrace fishing access facility at or near the

powerhouse. The licensee shall consider the needs of the disabled in designing these facilities. The filing shall also include a timetable for all measures contained in the MOU.

The licensee shall prepare the plan after consultation with the National Park Service Gauley River National Recreation Area manager, the Corps' Huntington District, the West Virginia Professional River Outfitters, and the American Whitewater Affiliation. The licensee shall include with the filing documentation of consultation with the above entities before preparing the plan, copies of comments and recommendations on the plan after they have been prepared and provided to the entities, and specific descriptions of how the consulted entities' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the consulted entities to comment and to make recommendations prior to filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. No land-clearing or land-disturbing activities shall begin until the licensee is notified by the Commission that the plan is acceptable. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 411. At least 90 days before the start of any land-disturbing or land-clearing activities, the licensee shall file with the Commission for approval a plan for monitoring recreational use of the project both during and after project construction to ensure compatibility of the project with the Gauley River National Recreation Area.

The plan shall include, at a minimum:

(a) methods for monitoring recreational use of the project site during project construction to identify possible conflicts between construction and recreation, a discussion of the means for making changes should conflicts arise, and a schedule for filing an annual monitoring report during project construction; and

(b) methods for collecting annual recreation use figures for facilities at the project during the first four years of project operation, and thereafter every four years, to determine the adequacy of recreation facilities to meet demand, and to identify possible conflicts between project operation and recreation; and provisions for filing an annual report during the first four years of project operation, and every four years (along with the

licensee's standard Form 80 submission). The report shall include: recreation use figures, a discussion of the adequacy of the recreation facilities to meet demand, and a proposal to accommodate recreation needs in the project area if there is a need for additional facilities or a conflict is identified.

The licensee shall prepare the plan after consultation with the National Park Service Gauley River National Recreation Area manager, and the Corps' Huntington District. The licensee shall include with the plan documentation of consultation with the above agencies before preparing the plan, copies of comments and recommendations on the plan after it has been prepared and provided to the agencies, and specific descriptions of how the consulted agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the consulted agencies to comment and to make recommendations prior to filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. No land-clearing or land-disturbing activities shall begin until the licensee is notified by the Commission that the plan is acceptable. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 412. The Commission reserves the authority to amend this license to reflect adoption of procedures, to be developed through discussions with West Virginia Department of Natural Resources and, as appropriate, the Park Service, to ensure that any access improvements required under new paragraph 3.C.IV of the project's water quality certification will, in the Commission's judgment, not pose a safety hazard.

Article 413. (a) In accordance with the provisions of this article, the licensee shall have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain types of use and occupancy, without prior Commission approval. The licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the licensee shall also have continuing responsibility to supervise and control the use and occupancies for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed, under this article. If a permitted use and occupancy violates any condition of this

article or any other condition imposed by the licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the licensee shall take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, canceling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

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

(c) The licensee may convey easements or rights-of-way across, or leases of, project lands for: (1) replacement, expansion, realignment, or maintenance of bridges and roads for which all necessary state and federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility distribution lines;

(6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69-kV or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project reservoir. No later than January 31 of each year, the licensee shall file three copies of a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed.

(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for:

- (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained;
- (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certification or permits have been obtained;
- (3) other pipelines that cross project lands or waters but do not discharge into project waters;
- (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained;
- (5) private or public marinas that can accommodate no more than 10 watercraft at a time and are located at least one-half mile from any other private or public marina;
- (6) recreational development consistent with an approved Exhibit R or approved report on recreational resources of an Exhibit E; and
- (7) other uses, if:
 - (i) the amount of land conveyed for a particular use is five acres or less;
 - (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from the edge of the project reservoir at normal maximum surface elevation; and
 - (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause

(d)(7) in any calendar year. At least 45 days before conveying any interest in project lands under this paragraph (d), the licensee must submit a letter to the Director, Office of Hydropower Licensing, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked exhibit G or K map may be used), the nature of the proposed use, the identity of any federal or state agency official consulted, and any federal or state approvals required for the proposed use. Unless the Director, within 45 days from the filing date, requires the licensee to file an application for prior approval, the licensee may convey the intended interest at the end of that period.

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

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

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

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

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

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

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

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and 10634-000

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

(F) The application for a preliminary permit filed by the City of Manassas, Virginia on August 8, 1988, is denied.

(G) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 C.F.R. 385.713.

By the Commission.

(S E A L)

Lois D. Cashell,
Secretary.

Appendix 1.2 – FERC License Amendments List

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Category/ Accession	Doc Date/ Filed Date	Docket Number	Description	Class/ Type	Files	Size	
Issuance 20060830-3007	08/30/2006 08/30/2006	P-10813-074	Order approving Phase 2 Dissolved Oxygen Monitoring Report and approving and modifying Final Operating Plan pursuant to Article 404 re City of Summersville, West Virginia's Summersville Project under P-10813. Availability: Public	Order/Opinion / Delegated Order	<input type="checkbox"/> Word	63K	INFO
					<input type="checkbox"/> Text	18K	FILE
					<input type="checkbox"/> FERC Generated PDF	105K	
Issuance 20021031-3011	10/31/2002 10/31/2002	P-10813-057	Order approving Revised Exhibits A, F & G re Gauley River Power Partners, LP on behalf of the City of Summersville's Summersville Hydroelectric Project under P-10813. Availability: Public	Order/Opinion / Delegated Order	<input type="checkbox"/> WordPerfect	25K	INFO
					<input type="checkbox"/> Text	5K	FILE
					<input type="checkbox"/> FERC Generated PDF	9K	
Issuance 20020822-0520	08/22/2002 08/22/2002	P-10813-000	Order approving Gauley River Power Partners, LP's on behalf of the City of Summersville filing of revised Exhibit F drawings for the Summersville Hydroelectric Project under P-10813. Availability: Public	Order/Opinion / Delegated Order	<input type="checkbox"/> Image	51K	INFO
					<input type="checkbox"/> FERC Generated PDF	71K	FILE
Issuance 20020822-3009	08/22/2002 08/22/2002	P-10813-000	Order approving Revised Exhibit F Drawing re the City of Summerville under P-10813. Availability: Public	Order/Opinion / Delegated Order	<input type="checkbox"/> WordPerfect	86K	INFO
					<input type="checkbox"/> FERC Generated PDF	20K	FILE
					<input type="checkbox"/> Text	4K	
Issuance 20020318-0840	03/15/2002 03/15/2002	P-10813-059	Order approving revised signage plan pursuant to Article 410 re City of Summersville Project under P-10813. Availability: Public	Order/Opinion / Delegated Order	<input type="checkbox"/> Text	4K	INFO
					<input type="checkbox"/> WordPerfect	11K	FILE
					<input type="checkbox"/> FERC Generated PDF	7K	
					<input type="checkbox"/> Image	55K	
Issuance 20011018-0398	10/17/2001 10/17/2001	P-10813-053	Order approving as-built transmsion line drawing under Article 315 re City of Summersville's Summerville Hydro Project under P-10813. Availability: Public	Order/Opinion / Delegated Order	<input type="checkbox"/> Text	6K	INFO
					<input type="checkbox"/> WordPerfect	78K	FILE
					<input type="checkbox"/> FERC Generated PDF	26K	
					<input type="checkbox"/> Image	70K	
Issuance 20010222-3121	02/21/2001 02/22/2001	P-10813-000	City Of Summersville, West Virginia. 94 FERC 61,143; Order Granting Intervention And D Availability: Public	Order/Opinion / Untyped during	<input type="checkbox"/> Text	12K	INFO FILE

				conversion	<input type="checkbox"/>	WordPerfect	21K	
Issuance	02/21/2001	P-10813-051	Order granting intervention & denying rehearing re City of Summersville, West Virginia under P-10813.	Order/Opinion /	<input type="checkbox"/>	Image	157K	INFO
20010223-0208	02/21/2001		Availability: Public	Commission Order/Opinion				FILE
Issuance	12/27/2000	P-10813-000	City of Summersville. 93 FERC 62,243; Order Approving As-Built Transmis	Order/Opinion /	<input type="checkbox"/>	Text	6K	INFO
20001228-3069	12/28/2000		Availability: Public	Untyped during conversion	<input type="checkbox"/>	WordPerfect	78K	FILE
Issuance	12/27/2000	P-10813-050	Order approving as-built transmission line drawings under Article 315 re City of Summersville's Summersville Proj-10813.	Order/Opinion /	<input type="checkbox"/>	Image	71K	INFO
20001228-0433	12/27/2000		Availability: Public	Delegated Order				FILE
Issuance	09/28/2000	P-10813-000	City Of Summersville. 92 FERC 62,276; Order Approving Revised Exhibits	Order/Opinion /	<input type="checkbox"/>	Text	4K	INFO
20000929-3094	09/29/2000		Availability: Public	Untyped during conversion	<input type="checkbox"/>	WordPerfect	90K	FILE
Issuance	09/28/2000	P-10813-048	Order approving the City of Summerville's April 7, 2000 filing of revised exhibit-G drawings re Summerville Hydroelectric Project under P-10813.	Order/Opinion /	<input type="checkbox"/>	Image	71K	INFO
20000929-0272	09/28/2000		Availability: Public	Delegated Order				FILE
Issuance	03/30/2000	P-10813-046	Order approving City of Summersville, WV's supplemental recreation plan for the Summersville Proj-10813.	Order/Opinion /	<input type="checkbox"/>	Text	7K	INFO
20000403-0129	03/30/2000		Availability: Public	Delegated Order	<input type="checkbox"/>	WordPerfect	14K	FILE
					<input type="checkbox"/>	Image	93K	
					<input type="checkbox"/>	FERC Generated PDF	112K	
Issuance	11/05/1999	P-10813-000	City Of Summersville. 89 FERC 62,101; Order Amending License	Order/Opinion /	<input type="checkbox"/>	Text	5K	INFO
19991108-3074	11/08/1999		Availability: Public	Untyped during conversion	<input type="checkbox"/>	WordPerfect	12K	FILE
Issuance	11/05/1999	P-10813-044	Order amending license application of Gauley River Power Partners filed on behalf of City of Summersville's Summersville Hydroelectric Proj-10813.	Order/Opinion /	<input type="checkbox"/>	Image	67K	INFO
19991108-0639	11/05/1999		Availability: Public	Delegated Order				FILE
Issuance	02/11/1999	P-10813-000	City Of Summersville, West Virginia. 86 FERC 61,149; Order Denying Rehearing	Order/Opinion /	<input type="checkbox"/>	Text	19K	INFO
19990211-3109	02/11/1999		Availability: Public	Untyped during conversion	<input type="checkbox"/>	WordPerfect	30K	FILE
Issuance	02/11/1999	P-10813-000	City Of Summersville, West Virginia. 86 FERC 61,148; Order Denying Motion To Reissue	Order/Opinion /	<input type="checkbox"/>	Text	17K	INFO
19990211-3125	02/11/1999		Availability: Public	Untyped during conversion	<input type="checkbox"/>	WordPerfect	26K	FILE
Issuance	02/11/1999	P-10813-041	Order denying motion to reissue notice rejecting request for rehearing re City of Summersville, WV under P-10813.	Order/Opinion /	<input type="checkbox"/>	Image	233K	INFO
19990212-0358	02/11/1999		Availability: Public	Commission Order/Opinion				FILE
Issuance	02/11/1999	P-10813-040	Order denying rehearing re City of Summersville, West Virginia, Summersville Hydroelectric Project-10813.	Order/Opinion /	<input type="checkbox"/>	Image	269K	INFO
19990212-0359	02/11/1999		Availability: Public	Commission Order/Opinion				FILE
Issuance	07/02/1998	P-10813-035	Order approving final transmission line design plan for City of Summersville, WV's Summersville Proj-10813.	Order/Opinion /	<input type="checkbox"/>	Image	225K	INFO
19980706-0525	07/02/1998		Availability: Public	Delegated Order	<input type="checkbox"/>	Text	15K	FILE
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Issuance 19980602-3178	06/01/1998 06/02/1998	P-10813-000	City Of Summersville, West Virginia. 83 FERC 61,237; Order Lifting Stay Availability: Public	Order/Opinion / Untyped during conversion	<input type="checkbox"/> Text	2K	INFO FILE
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Issuance 19980603-0403	06/01/1998 06/01/1998	P-10813-033	Order lifting stay re City of Summersville, WV's lic for Summersville Hydroelectric Proj-10813. Availability: Public	Order/Opinion / Commission Order/Opinion	<input type="checkbox"/> Image	27K	INFO FILE
Issuance 19980506-0410	05/04/1998 05/04/1998	P-10813-024	Order approving City of Summerville request for relief of endangered species monitoring plan per Lic Art 407 re Summerville Proj-10813. Availability: Public	Order/Opinion / Delegated Order	<input type="checkbox"/> Image	124K	INFO FILE
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					<input type="checkbox"/> FERC Generated PDF	141K	
Issuance 19970707-0214	07/01/1997 07/01/1997	P-10813-032	Order denying rehearing re City of Summersville, West Virginia's Summersville Hydroelectric Proj-10813. Availability: Public	Order/Opinion / Commission Order/Opinion	<input type="checkbox"/> Image	296K	INFO FILE
Issuance 19970509-0392	05/05/1997 05/05/1997	P-10813-033	Order granting City of Summersville,WV stay of lic for Summersville Hydroelec Proj under P-10813. Availability: Public	Order/Opinion / Commission Order/Opinion	<input type="checkbox"/> Image	105K	INFO FILE
Issuance 19970224-0212	02/19/1997 02/19/1997	P-10813-023	Order approving visual resource protection plan for City of Summersville's Summersville Proj, P-10813. Availability: Public	Order/Opinion / Delegated Order	<input type="checkbox"/> Text	10K	INFO FILE
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					<input type="checkbox"/> Image	143K	
					<input type="checkbox"/> FERC Generated PDF	163K	
Issuance 19970128-0029	01/21/1997 01/21/1997	P-10813-026	Order denying rehearing re Summersville Hydroelectric Proj of City of Summersville,West Virginia under P-10813. Availability: Public	Order/Opinion / Commission Order/Opinion	<input type="checkbox"/> Image	632K	INFO FILE
Issuance 19961127-0239	11/22/1996 11/22/1996	P-10813-020	Order modifying & approving recreation monitoring plan re City of Summersville,WV Summersville Proj-10813. Availability: Public	Order/Opinion / Delegated Order	<input type="checkbox"/> Image	160K	INFO FILE
Issuance 19961127-0243	11/22/1996 11/22/1996	P-10813-019	Order approving recreation plan in part & requiring suppl plan re City of Summersville,WV Summersville Proj-10813. Availability: Public	Order/Opinion / Delegated Order	<input type="checkbox"/> Image	150K	INFO FILE
Issuance 19961024-0228	10/18/1996 10/18/1996	P-10813-011 P-10813-022	Order amending lic, revising annual charges/lifting stay for 80-megawatt proposed Summerville Hydroelectric Proj-10813 re City of Summersville,WV. Availability: Public	Order/Opinion / Delegated Order	<input type="checkbox"/> Image	583K	INFO FILE
Issuance 19961001-0216	09/27/1996 09/27/1996	P-10813-018	Order modifying & approving flow monitoring plan re City of Summersville,WV Summersville Proj-10813. Availability: Public	Order/Opinion / Delegated Order	<input type="checkbox"/> Text	24K	INFO FILE
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Issuance 19961001-0021	09/25/1996 09/25/1996	P-10813-017	Order modifying & approving dissolved oxygen monitoring plan re City of Summersville,West Virginia,Summersville Proj-10813. Availability: Public	Order/Opinion / Delegated Order	<input type="checkbox"/> Text	7K	INFO FILE
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Issuance 19961001-0032	09/24/1996 09/24/1996	P-10813-022	Order granting stay re City of Summersville,WV Summersville Hydroelec Proj-10813. Availability: Public	Order/Opinion / Commission Order/Opinion	<input type="checkbox"/> Image	96K INFO FILE
Issuance 19930408-3099	04/07/1993 04/08/1993	P-10813-000	LP/Town of Summersville, WVA/Rehearing. Availability: Public	Order/Opinion / Untyped during conversion	<input type="checkbox"/> Text	12K INFO FILE
Issuance 19930413-0253	04/07/1993 04/07/1993	P-10813-002	Order denying Town of Summersville,WV request for rehearing on 921026 re Summersville Dam P-10813.Availability: Public	Order/Opinion / Commission Order/Opinion	<input type="checkbox"/> MicroFilm	INFO FILE
Issuance 19920928-3058	09/25/1992 09/28/1992	P-10813-000	LP/Town of Summerville/License. Availability: Public	Order/Opinion / Untyped during conversion	<input type="checkbox"/> Text	333K INFO FILE
Issuance 19920929-0326	09/25/1992 09/25/1992	P-10813-000	Order issuing Town of Summersville,WVA et al lic appl for Summersville Hydroelectric Proj under P-10813.Availability: Public	Order/Opinion / Delegated Order	<input type="checkbox"/> MicroFilm	INFO FILE
Issuance 19910524-3129	05/23/1991 05/24/1991	P-10813-000	LP/Summerville, W. VA/Rehearing. Availability: Public	Order/Opinion / Untyped during conversion	<input type="checkbox"/> Text	27K INFO FILE
Issuance 19910530-0287	05/23/1991 05/23/1991	P-10634-001 P-10813-001	Order on rehearing re Town of Summerville,WV et al under P-10813 et al.Availability: Public	Order/Opinion / Commission Order/Opinion	<input type="checkbox"/> MicroFilm	INFO FILE

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Appendix 1.3 – FERC License Amendments

76 FERC ¶ 62,228

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

City of Summersville, West Virginia) Project No. 10813-017

ORDER MODIFYING AND APPROVING
DISSOLVED OXYGEN MONITORING PLAN

SEP 25 1996

On July 15, 1996, The City of Summersville, West Virginia (licensee), filed for Commission approval, a dissolved oxygen monitoring plan for the Summersville Project. This plan is required by Article 404 of the project's license.^{1/} The Summersville Project is located on the Gauley River, in Nicholas County, West Virginia.

LICENSE REQUIREMENT

Article 404 of the license requires the licensee, at all times, to maintain a minimum dissolved oxygen (DO) concentration of at least 7.0 milligrams per liter (mg/l) in the Gauley River as measured immediately downstream of the project tailrace.

Article 404 also requires the licensee to prepare a plan to install, operate, and maintain permanent, continuously recording water temperature and DO monitoring devices to monitor DO concentrations and water temperature in the project tailrace. The plan, as required by Article 404, must include: (1) a detailed description of the methods for monitoring DO concentrations and water temperature levels, and the locations at which DO and temperature will be monitored; (2) a proposal whereby project operation could be rapidly altered to ensure maintenance of at least 7.0 mg/l, including project shutdown; and (3) a schedule for implementing the monitoring plan and for filing water quality records with the Commission and the consulted agencies.

Article 404 requires the licensee to prepare the monitoring plan after consultation with the U.S. Corps of Engineers (COE), the U.S. Fish and Wildlife Service (USFWS), and the West Virginia Division of Natural Resources (WVDNR). Further, Article 404 states that the Commission reserves the right to require changes to the plan. No land-clearing or land-disturbing activities shall begin until the licensee is notified that the plan is approved. Upon Commission approval, the licensee must implement the plan, including any changes required by the Commission.

1/ See Order Issuing License issued September 25, 1992, 60 FERC ¶ 61,291.

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LICENSEE'S PROPOSED PLAN

The licensee states that flow releases for Summersville Lake have been, and will continue to be, dictated by COE for flood control in the Gauley River Basin. The licensee also states that at the present time water withdrawn from Summersville Lake is discharged through up to four Howell-Bunger valves (HBV) to the Gauley River. The HBV's aerate releases, creating oxygen rich conditions in the Gauley River downstream from the dam.

The water quality certification issued by WVDNR requires that the licensee (1) maintain a DO concentration of 7.0 mg/l, (2) prepare a plan for determining pre-project DO concentrations (Phase 1), and (3) prepare an operational plan that includes water quality monitoring for the first two years of project operation (Phase 2).

The licensee's July 15, 1996 filing described, in detail, the actions that would be taken to comply with the project's Section 401 water quality certification, and to meet the three conditions of Article 404.

Phase 1 Study - Existing Water Quality Conditions

The licensee states that the information collected from this phase will establish baseline water quality conditions in the project impoundment, in the tailwater area, and downstream from the project. Phase 1 monitoring would consist of collecting data for two years during the period of lake stratification; sampling would occur from June through October. The licensee proposes to monitor DO and water temperature.

Monitoring Locations

The licensee plans to establish Station 1 at the point of withdrawal in the impoundment. Specifically, a continuous monitoring device will be connected to one penstock upstream of the HBV, which will be designed to test water quality prior to the water exiting the HBV. At Station 1, the licensee indicates that a pressure reducing valve and flow regulator will be outfitted to the existing penstock, with the monitoring device located in the control house on top of the valve outlet structure. The monitoring device will be contained in an air-tight stilling chamber, and will record water quality parameters prior to the water discharging into a drain. The stilling chamber will be placed in line after water has passed through the reducing valve and flow regulator.

The licensee proposes to install Station 2 at an existing U.S. Geological Survey (USGS) gaging station (#03189600), which is located about 1,750 feet downstream from the Summersville

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dam.^{2/} Water withdrawn from the Gauley River will be supplied to the monitoring instruments by a pumping system, which the licensee believes will not appreciably alter the DO or temperature of the water. Total streamflow will be measured at the USGS gaging station, and the data obtained from the USGS.

The licensee proposes to establish Station 3, the downstream monitoring station, in an area approximately ten miles downstream from the Summersville dam.

Monitoring Equipment

The licensee states that water quality information and temperature data will be collected using recorder multiprobe loggers.^{3/} The licensee further states that these recorders are designed for remote, unattended data collection, and will be set to collect data once per half hour on a 24-hour basis. The monitoring probes will be equipped with extended memory capable of continuous recording in excess of 30 days.

Instrument Calibration

The licensee states that prior to deploying the instruments, the dataloggers will be calibrated to the manufacturer's specifications. To ensure data integrity and document instrument drift, calibrations and inspections will be performed every 30 days during the process of downloading data from the recorders. The licensee indicates that field calibrations will be performed according to EPA-approved, and manufacturer-suggested, methods. The licensee also states that pertinent information such as calibration time, atmospheric pressure, air temperature, and deviation results will be documented and be available for inspection by USFWS, WVDNR, and the West Virginia Division of Environmental Protection (WVDEP).

Should field calibration be necessary, the licensee states that the unit(s) will be field serviced, including, but not limited to, cleaning, replacement of sensor membranes, and instrument recalibration. All deviations from sampling protocol, due to instrument malfunction will be documented, as well as, all corrective actions taken to rectify those problems. Upon conclusion of Phase 1 annual monitoring, the licensee states that

2/ Based on 1991 sampling data, the licensee states that the data collected at this station should be representative of the conditions in the tailrace.

3/ Recorder multiprobe loggers are designed and conform to EPA (Environmental Protection Agency) approved methods for measuring water quality.

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all monitors will be returned to the lab and post calibrations performed; results would be documented.

Data Acquisition

The licensee states that data will be downloaded every 30 days from the dataloggers using a portable laptop computer. The data will be downloaded in ASCII file format, and include time stamps, temperature ($^{\circ}\text{C}$), and DO (mg/l). All data files will be assigned unique filenames in order to track collection date and sampling location. Furthermore, permanent records of the raw data will be maintained.

Data Reporting

The licensee proposes to summarize the raw data to determine DO in the tailwater and the river as a function of temperature and streamflow. Upon completing the data analysis in the fall of 1997, the licensee indicates that a draft report will be compiled and distributed for comment. A final report will be submitted to USFWS, COE, the Commission, WVDNR, and WVDEP after receiving comments on the draft. The licensee states that the report will include a description of evaluation methods used, results, and agency correspondence; all raw data will also be included.

Phase 2 - Water Quality Monitoring during Station Operation

The licensee proposes to prepare an Interim Operating Plan (IOP) for the first two years of project operation. The purpose of the IOP is to evaluate, test, and implement measures to maintain a DO concentration of 7.0 mg/l in the Gauley River from June through October. During the initial two years of operation, the licensee proposes to monitor DO and test reaeration options to mitigate impacts of turbine operation.

Interim Operating Plan

Between June through October, when flows are sufficient for power generation [800 cubic feet per second (cfs) to 4,000 cfs], the licensee proposes to monitor DO and alter project operations as needed to maintain required DO levels.^{4/} During the two-year IOP period, the licensee proposes to evaluate several mechanisms to determine the most efficient and effective reaeration method to maintain DO levels. The alternatives to be evaluated include, but are not limited to: (a) partial or total discharge through

4/ The proposed turbines would have a discharge capacity of about 800 cfs to 4,000 cfs. When flows fall below the hydraulic capacity of 800 cfs the turbines would be shutdown and flows released from the HBVs. Flows in excess of 4,000 cfs would also be released through the HBVs.

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the HBVs; (b) oxygen/air injection in the tailrace or intake; and (c) turbine aspiration/venting.

The licensee states that Phase 1 data will be used to determine the amount of DO that must be added to maintain a concentration of 7.0 mg/l. The licensee then plans to estimate the amount of DO that could be added by each of the evaluation alternatives. Based on the results of this evaluation, the licensee will operate the project to test various combinations of aeration methods.

Monitoring Procedures

During the IOP period, the licensee proposes to monitor DO conditions using Stations 2 and 3. The licensee states that maintenance and calibration of the equipment will follow the same procedures outlined in the Phase 1 study. The licensee also states that DO monitoring at Station 2 will be transmitted to a Programmable Logic Computer (PLC) installed at the powerhouse, which will be used to monitor DO, flow, and turbine operation.

Initial Operation from June through October

The licensee states that if DO levels remain at or above 7.0 mg/l, project operation will continue without enhancement. When DO levels fall below 7.0 mg/l for one hour, the licensee proposes to operate the project for the following eight hours using one, or a combination of, reaeration techniques. The licensee states that if DO is raised to 7.0 mg/l or better within the eight hours, the project will continue to operate with the DO enhancement measure in place, and DO conditions monitored.

If at the end of the eight-hour period, DO levels remain below 7.0 mg/l, the licensee states that generation will cease and all flow will be diverted through the HBV(s). For public safety reasons, the licensee indicates that there will be a 15-minute lag between turbine shutdown and the time the HBV(s) begin discharging. The licensee also states that, during the first two years, when DO of 7.0 mg/l is not being met from June through October, the project will be operated for eight out of every 24 hours. The licensee plans to use the eight hour period to evaluate alternative DO enhancement measures at the project.

Final Operating Plan

Four months after completing the first two years of operation, the licensee proposes to prepare a comprehensive report describing the methods, results, and conclusions of the IOP study. The report would be submitted to USFWS, COE, WVDNR, and the Commission for review and approval. The licensee states that the information contained in the report will include, at a minimum: (a) all water quality data collected; (b) conditions

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during which DO was less than 7.0 mg/l; (c) frequency, duration, and extent of low DO events; (d) aeration techniques and operational modes evaluated; and (e) the effects on DO of the various DO enhancement measures evaluated. The licensee also states that the report will include a detailed description of the proposed aeration technique(s) or operational procedures that would become part of the permanent final operation plan for the project.

Upon acceptance of the final operating plan by the Commission, USFWS, and WVDNR, the licensee states that the final plan will be incorporated into the project's permanent operation. As part of the final plan, the licensee proposes to continue monitoring water quality at Station 2, and submit to USFWS, WVDNR, and the Commission, by December 15 of each year, a report on the monitoring activities. According to the licensee, the report would include: (a) all water quality data collected; (b) tables and figures summarizing the data; and (c) the specific events where DO did not meet the requirement of 7.0 mg/l, including frequency and duration of occurrences and reason for not meeting compliance.

AGENCY COMMENTS

By letter dated May 16, 1996, the licensee provided USFWS, COE, WVDNR, and WVDEP, a draft copy of the water quality monitoring plan for their review and comment. By letters dated May 22, 1996, June 20, 1996, and July 1, 1996, WVDNR, USFWS, and COE, respectively, responded to the licensee's request for comments. No comments were received from WVDEP.

The WVDNR, in reviewing the information provided in the draft plan, found the plan acceptable, and had no other comments.

The USFWS stated that the basic components required by the Commission's license were included in the plan. The USFWS also stated that, upon completion of Phase 2 of the study, it would provide additional comments on the final operating plan when the plan becomes available. The USFWS requested that it be included in the list of agencies able to request inspection of the calibration information, and that the licensee should submit the annual report on water quality monitoring to USFWS.

The USFWS expressed concern over the location of Station 3. Specifically, USFWS states that in order to determine the length of river affected by depressed DO levels (i.e., below 7.0 mg/l), Station 3 should be moved upstream to a point that would be six miles below the USGS gaging station, at the mouth of the Meadow River, a tributary of the Gauley River. The USFWS states that the new sampling location should indicate where aquatic resources are affected by reduced DO levels.

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The COE commented on two aspects of the licensee proposed water quality monitoring plan, including the design and location of the monitoring stations, and the calibration and maintenance of the monitoring probes.

The COE states that the reducing valve and flow regulator proposed by the licensee at Station 1 would physically change the conditions of the water. However, COE states that these changes can be compensated by keeping the pressure in the flow cell nearly constant. At Stations 2 and 3, COE states that pumping could result in various problems, depending upon where the pumps are located and the type of pumps used.^{5/} Therefore, COE believes that the monitoring probes used at Stations 2 and 3 should be placed in the river.

With regards to calibration and maintenance, COE recommends that, at a minimum, a fourth datasonde probe be purchased as a backup. The COE states that the backup probe(s) could be used to avoid data loss while a primary probe is being serviced. The COE also states that 30 days is a long time between service. While the datasonde probes are capable of operating for this time frame, probe fouling may become a problem. Should this become an issue, COE believes that a maintenance schedule of two weeks may be needed.

LICENSEE'S RESPONSE TO AGENCY COMMENTS

In letters dated July 11, 1996, the licensee responded to USFWS's and COE's comments.

The licensee's July 15, 1996 filing incorporated USFWS's concerns regarding submittal of the annual water quality report, and the agency's access to calibration information. Further, the licensee's July 15 filing also addressed USFWS's concerns regarding the location of Station 3.^{6/} As characterized by the

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- 5/ Should the pump at Station 2 be located in the gaging station, water would be lifted to the flow cell, which would create a partial vacuum on the water. If the pump is placed below the gaging station, water would be pushed to the flow cell causing problems with pressure changes. Because the proposed monitoring plan does identify what type of pumps would be used, COE speculates that peristaltic pumps would likely be used. Peristaltic pumps are pulse pumps, which could create pressure problems in the flow cells.
- 6/ The licensee discussed the location of Station 3 with USFWS subsequent to receiving USFWS's comments on the draft plan. The proposed location is not USFWS's preferred location, but discussions between the licensee and USFWS resulted in USFWS mutually agreeing to the use of the site.

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licensee, the location proposed in the plan filed on July 15 provides better access and security than the location recommended by USFWS. The licensee also states that the proposed site for Station 3 would also eliminate any potential influences from Meadow Creek, and would better characterize conditions in the Gauley River.

In the licensee's July 11 letter to COE, the licensee addressed all of COE's concerns. The licensee concedes that the pressure reducing valve and flow regulator would alter the properties of the water. However, the licensee believes the effects would result in slightly lower DO readings. The licensee believes that the lower readings would err on the conservative side for establishing baseline conditions. The licensee states that, if necessary, an algorithm can be developed and applied to the data to correct for the pressure changes.

The licensee states that the data obtained from Station 1 will be used to determine baseline conditions, as well as in the design of the project's aeration system. The licensee also states that Station 2, not Station 1, will be used to monitor the project's compliance with Article 404.

The licensee also concedes that the proposed use of a pump at Station 2 could alter DO slightly. The licensee, however, states that the pumping system could reduce DO by 0.1 mg/l, which the licensee believes is insignificant when compared to errors that may occur during the equipment calibration process. As would be case for Station 1, lower DO readings at Station 2 would err on the conservative side.

The licensee states that the monitoring devices used at Stations 2 and 3 will be placed directly in the Gauley River. However, the licensee indicates that the monitoring unit at Station 2 will be permanently located in the USGS gaging station for long-term monitoring after the first year.

Concerning calibration and maintenance, the licensee states that the units will be in service for five months from June through October. When not in use, the licensee believes that if stored and maintained properly, the units should not require extensive factory servicing. The licensee also states that Station 3 will be discontinued after implementing the final operating plan, and that Station 3's monitoring unit could serve as a backup. Should it appear that the monitoring units require more factory service than anticipated, the licensee states that additional units could be purchased at that time.

The licensee acknowledges that probe fouling would provide erroneous readings. As part of the initial setup of the stations, the licensee states that field maintenance and calibration procedures, which would be implemented by the field

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technicians, will be developed. The procedures include the weekly inspection of the units during the first month of collections, and subsequent adjustments to the maintenance schedule as conditions warrant. The licensee also states that, while a 30-day maintenance schedule is the goal, a one- or two-week schedule will be implemented if data integrity appears to be compromised.

DISCUSSION AND CONCLUSIONS

The Commission prepared an environmental assessment (EA) for the Summersville Project in order to analyze the effects associated with operating the project.^{2/} In the EA, Commission staff stated that the present release of flows through the HBVs results in near-saturated to super-saturated DO concentrations in the Gauley River. The EA concluded that because operation of the proposed hydropower facility would divert most of the river flow through the project turbines, releases from the HBVs would be reduced or frequently eliminated, thereby resulting in commensurate losses in aeration at the project dam.

Article 404 required the licensee to (1) maintain a DO concentration of 7.0 mg/l downstream from the project, and (2) file, for Commission approval, a plan to monitor DO and water temperature in the project's tailrace in order to ensure compliance with the State's DO and temperature standards. The licensee's plan, filed with the Commission on July 15, 1996, fulfills the requirements of Article 404.

During the consultation period, USFWS and COE provided the licensee with various editorial and substantive comments concerning the required plan. The discussion below pertains to COE's comments that the licensee responded to in its July 11 letter to COE.

Monitoring Stations

The COE suggested that the pressure reducing valve and flow regulator proposed for use at Station 1 would physically change the conditions of the water.

The licensee's proposed design includes installing a Datasonde Probe to measure water quality at the intake. These probes are, to some degree, sensitive to pressure changes, and therefore, may yield inaccurate readings. However, problems of this nature can be reduced or eliminated by maintaining a nearly constant pressure in the flow cell. The licensee's proposal to install the monitoring probe at Station 1 in a stilling chamber

^{2/} The final EA was made a part of the license issued September 25, 1992.

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should reduce any effects of pressure changes, but is not likely to eliminate the problem.

As noted by the licensee, the impact of pressure changes in the system would result in DO readings being slightly lower than normal. This would, in effect, result in a conservative bias in the DO readings used to characterize baseline conditions. Nevertheless, should it become necessary, the licensee agreed to develop an algorithm that would be applied to the DO data to compensate for any pressure changes that may occur.

If the licensee's monitoring data shows a minor effect on DO readings from pressure changes, then there would be no need to develop an algorithm to compensate for such changes. However, if it appears that pressure changes in the system significantly affect the monitoring probes DO readings, then the licensee should develop and use the algorithm as proposed.

The COE expressed concern over the exact location of the monitoring probes at Stations 2 and 3, and the potential use of peristaltic pumps at these two stations.

The use of pumps to transport water from its withdrawal point to the monitoring probe would affect the chemical properties of the water. The licensee estimates that a pumping system could produce a 0.1 mg/l reduction in DO. As noted by the licensee, this reduction would likely be insignificant when compared to the biased DO readings that could occur during the equipment calibration process. Furthermore, while minor reductions in DO levels may occur, lower DO readings at Station 2, which is the primary station for monitoring compliance with Article 404, would err on the conservative side. Thus, where it concerns the level of reaeration that may be needed, more oxygen would be added to the water than would actually be required.

The licensee states that, because of time constraints in obtaining the necessary equipment and approvals, the monitoring probe at Station 2 will be located in the river for the first year of data collection. After the first year, the licensee proposes to move the monitoring probe inside the USGS gaging station. At Station 3, the licensee is proposing to place the monitoring probe directly in the river.

Locating the monitoring probes at Stations 2 and Station 3 directly in the river would eliminate the potential problems associated with using the peristaltic pumps, and thereby provide relatively unbiased DO data. However, because Station 2 will be used to permanently monitor compliance with Article 404, access and security become an important consideration over the long term. Moving the monitoring probe at Station 2 to inside the USGS gaging station would provide a secure location, and reduce any problems with tampering and vandalism.

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Therefore, during the first year of data collection, the licensee should place the Station 2 monitoring probe directly in the river, after which time, the probe should be permanently moved to inside the USGS gaging station (#03189600) for long-term monitoring. Also, the licensee should place the monitoring probe at Station 3 directly in the river.

Calibration and Maintenance

The COE suggests that a fourth probe be purchased, and be used as a backup. The COE is concerned that the primary probes may require factory service over the four-year study period, and that data would be lost while the probe(s) is being serviced.

The licensee plans to use the monitoring probes for approximately five months out of the year. This limited service time, coupled with proper storage and maintenance during the off season, should preclude the need for extensive factory service.

Furthermore, additional backup probes should not be purchased unless conditions warrant. The licensee's proposal to purchase additional units in the future, if warranted, is reasonable. Therefore, the licensee's proposed plan, which requires the use of three probes, is adequate at this time. If it appears that the units require considerably more factory service than expected, then, the licensee, as proposed, should purchase the needed additional units at that time.

Finally, COE expressed a concern about the licensee's service schedule. The COE states that probe fouling is a common problem, and that 30 days may be too long between services.

One of the more common problems associated with continuous DO monitoring is fouling of the gas-permeable membrane used on most sensors (Aquatic Systems Engineering, 1990).^{8/} Probe fouling reduces oxygen migration through the membrane, resulting in drift and increasing the frequency of site visits for maintenance.

The licensee concedes that probe fouling would result in inaccurate DO readings, but argues that the proposed field maintenance and calibration procedures should be sufficient to maintain data integrity. As proposed, these procedures would include weekly inspections during the first month of operation, with adjustments made thereafter, if conditions warrant.

^{8/} Aquatic Systems Engineering. 1990. Assessment and guide for meeting dissolved oxygen water quality standards for hydroelectric plant discharges. Electric Power Research Institute, Report GS-7001, Palo Alto, California. November 1990. 449 pp + appendices.

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The probe proposed to be used by the licensee has a stability rating of 30 days. However, field experience (Aquatic Systems Engineering, 1990) suggests that 30 days may be too long between services. Users of this type of probe cite a one- to three-week service schedule. While the licensee's proposed maintenance and calibration schedule conforms to the probe's specifications, it may not be adequate to prevent erroneous data resulting from probe fouling.

The licensee's maintenance and calibration schedule should be sufficient to monitor data integrity at this time. However, if at any time during the monitoring period it appears that DO data integrity is compromised by the 30-day service schedule, the service schedule should be modified, as appropriate, so as to minimize the reporting of erroneous DO data. The licensee should adjust the schedule in consultation with COE, USFWS, and WVDNR. Should the maintenance and calibration schedule be adjusted, the licensee should notify the Commission within 10 days of such changes, and include what conditions prompted the adjustment in the schedule.

Data Reporting Schedule

The licensee's proposed DO monitoring plan included a schedule for filing (1) the methods, results, and agency correspondence of Phase 1 monitoring; and (2) methods, results, conclusions, and agency correspondence of the Phase 2 monitoring. Based on the licensee's proposed schedule, Phase 1 monitoring would be completed by the fall of 1997, and the licensee's evaluation of Phase 2 monitoring results would be completed four months after completing the first two years of operation.

The licensee, by January 15, 1998, should file with the Commission a report concerning the Phase 1 DO monitoring results. This report should include a description of the evaluation methods used, results of the monitoring, and any relevant agency correspondence. Also, within four months of completing the first two years of commercial operation, the licensee should file with the Commission, for approval, a report on the Phase 2 monitoring, including comments of the COE, USFWS, and WVDNR on the results and recommendations.

The Phase 2 report should include, but not be limited to: (1) all water quality data collected; (2) the conditions during which DO was less than 7.0 mg/l; (3) the frequency, duration, and extent of low DO events; (4) the aeration techniques and operational modes evaluated; (5) the effects on DO of the various DO enhancement measures evaluated; and (6) any relevant agency correspondence concerning the Phase 2 monitoring report. The Phase 2 report should also include a description of the aeration technique(s) or operational procedures that are recommended, for Commission approval, to be included in the final operating plan.

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Prior to filing the Phase 1 and Phase 2 reports with the Commission, the licensee, as noted in the schedule, should submit the reports to COE, USFWS, and WVDNR for comment. Each agency should be given 30 days to comment. The licensee's filing for each report should include agency comments and the licensee's response to agency comments. Based on the Commission's review of the Phase 2 report, the Commission should reserve the right to require modifications to project facilities and/or operations to ensure maintenance of West Virginia's water quality standards.

The licensee's plan includes a schedule for filing reports concerning Phase 1 and Phase 2 monitoring. However, the licensee's plan does not include a mechanism for reporting violations of the State's DO standard during the Phase 2 studies, or after the final operating plan has been implemented.

Therefore, if the DO level, as measured by the approved monitoring studies, falls below 7.0 mg/l, the minimum required DO concentration under Article 404, the licensee shall file a report with the Commission within 30 days of the date of the incident. The report shall, to the extent possible, identify the cause, severity, and duration of the incident, and any observed or reported adverse environmental impacts resulting from the incident. The report shall also include: (1) operational data necessary to determine compliance with Article 404; (2) a description of any corrective measures implemented at the time of the occurrence, and the measures implemented or proposed to ensure that similar incidents do not recur; and (3) comments or correspondence, if any, received from the resource agencies regarding the incident. Based on the report and the Commission's evaluation of the incident, the Commission reserves the right to require modifications to project facilities and operations to ensure future compliance.

Implementation of the licensee's proposed DO monitoring plan, as modified above, would document baseline and post-construction DO levels in the Gauley River downstream from the project, and provide data for any decisions regarding the method of reaeration that may be needed to maintain water quality standards in the river. Therefore, the DO monitoring plan for the Summersville Project should be approved.

The Director Orders:

(A) The licensee's dissolved oxygen monitoring plan, filed with the Commission on July 15, 1996, as modified in paragraphs B thru E is approved.

(B) The licensee's maintenance and calibration shall include a 30-day interval between visits for servicing the DO monitoring probes. However, if at any time during the monitoring period it appears that DO data integrity is compromised by the

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30-day service schedule, the licensee, in consultation with the U.S. Corps of Engineers (COE), the U.S. Fish and Wildlife Service (USFWS), and the West Virginia Division of Natural Resources (WVDNR), shall modify the maintenance and calibration schedule, as appropriate, to minimize the reporting of erroneous DO data. Should the maintenance and calibration schedule be adjusted, the licensee should notify the Commission within 10 days of such changes, and include what conditions prompted the adjustment in the schedule.

(C) By January 15, 1998, the licensee shall file with the Commission a report concerning the Phase 1 DO monitoring. This report shall include a description of the evaluation methods used, all the results of the monitoring, and any relevant correspondence with COE, USFWS, and WVDNR on the Phase 1 report.

Prior to filing the report with the Commission, the licensee shall submit the report to COE, USFWS, and WVDNR for comment. Each agency shall be given 30 days to comment. The licensee's filing shall include agency comments and the licensee's response to agency comments.

(D) Four months after completing the first two years of commercial operation, the licensee shall file with the Commission, for approval, a report concerning the Phase 2 DO monitoring, including comments of the COE, USFWS, and WVDNR on the results and recommendations. This report shall include, but not be limited to: (1) all water quality data collected; (2) the conditions during which DO was less than 7.0 mg/l; (3) the frequency, duration, and extent of low DO events; (4) the aeration techniques and operational modes evaluated; (5) the effects on DO of the various DO enhancement measures evaluated; and (6) any relevant agency correspondence concerning the Phase 2 monitoring report.

The Phase 2 report shall also include a description of the aeration technique(s) or operational procedures that are recommended, for Commission approval, to be included in the final operating plan.

Prior to filing the report with the Commission, the licensee shall submit the report to COE, USFWS, and WVDNR for comment. Each agency shall be given 30 days to comment. The licensee's filing shall include agency comments and the licensee's response to agency comments. Based on the Commission's review of the report, the Commission shall reserve the right to require modifications to project facilities and/or operations to ensure maintenance of West Virginia's water quality standards.

(E) If the DO level, as measured by the approved monitoring studies, falls below 7.0 mg/l, the minimum required DO concentration under Article 404, the licensee shall file a report

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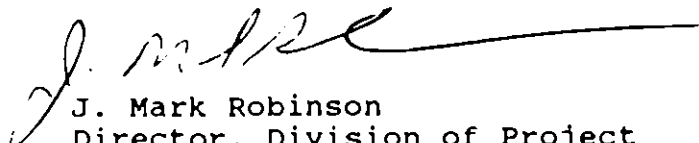
with the Commission within 30 days of the date of the incident. The report shall, to the extent possible, identify the cause, severity, and duration of the incident, and any observed or reported adverse environmental impacts resulting from the incident. The report shall also include: (1) operational data necessary to determine compliance with Article 404; (2) a description of any corrective measures implemented at the time of the occurrence, and the measures implemented or proposed to ensure that similar incidents do not recur; and (3) comments or correspondence, if any, received from the resource agencies regarding the incident. Based on the report and the Commission's evaluation of the incident, the Commission reserves the right to require modifications to project facilities and operations to ensure future compliance.

(G) Unless otherwise directed in this order, the licensee shall file an original and eight copies of any filing required by this order with:

The Secretary
Federal Energy Regulatory Commission
Mail Code: DPCA, HL-21.1
888 First Street, NE
Washington, DC 20426

In addition, the licensee shall serve copies of these filings on any entity specified in this order to be consulted on matters related to these filings. Proof of service on these entities shall accompany the filings with the Commission.

(F) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days from the date of issuance of this order, pursuant to 18 C.F.R. § 385.713.


J. Mark Robinson
Director, Division of Project
Compliance and Administration

76 FERC ¶ 62,245

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

City of Summersville, West Virginia) Project No. 10813-018

ORDER MODIFYING AND APPROVING
FLOW MONITORING PLAN
SEP 27 1996

On August 8, 1996, The City of Summersville, West Virginia (licensee), filed for Commission approval, a flow monitoring plan for the Summersville Project. This plan is required by Article 403 of the ~~project's~~ license. 1/ The Summersville Project is located on the Gauley River, in Nicholas County, West Virginia.

LICENSE REQUIREMENT

Article 403 of the license requires the licensee to file with the Commission, for approval, a plan to measure and report project flows and operation records to monitor compliance with the mode of operation stipulated in Article 402. 2/ The plan, as required by Article 403, must include: (1) the proposed location, design, and calibration of gaging equipment; (2) the method of flow data collection; (3) a schedule for implementing the plan; and (4) a provision for filing flow data with the Commission, the U.S. Corps of Engineers (COE), the U.S. Geological Survey (USGS), and the West Virginia Division of Natural Resources (WVDNR).

Article 403 requires the licensee to prepare the monitoring plan after consultation with USGS, COE, the National Park Service (NPS), and WVDNR. Further, Article 403 states that the Commission reserves the right to require changes to the plan. No land-clearing or land-disturbing activities shall begin until the licensee is notified that the plan is approved. Upon Commission approval, the licensee must implement the plan, including any changes required by the Commission.

LICENSEE'S PROPOSED PLAN

The licensee states that flow releases from Summersville Lake during project construction will continue to be dictated by

1/ See Order Issuing License issued September 25, 1992, 60 FERC ¶ 61,291.

2/ Article 402 requires the licensee to operate the Summersville Project as directed by COE, and that the licensee operate the project in such a way as to use the flows provided by COE. The licensee shall also maintain the minimum flow discharges at all times, as provided by COE.

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SEP 27 1996

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COE, with the flow discharged through up to four Howell-Bunger valves (HBV) to the Gauley River. The licensee also states that after construction on the project has been completed and generation commences, the flow monitoring plan described herein will be implemented.

The licensee's August 8, 1996 filing described, in detail, the actions that would be taken to comply with the requirements of Article 403.

Flow Monitoring

The licensee states that the Summersville Project will be operated as a run-of-river facility, with COE controlling the flow release rate and schedule. The licensee also states that, with its two turbine units, the project would have a minimum hydraulic capacity of 800 cubic feet per second (cfs) and a maximum capacity of 4,000 cfs.^{3/} Historical flow records indicates that river flow will be less than the minimum turbine capacity about 35 percent of the time, and be greater than the maximum turbine capacity about 13.5 percent of the time.

The licensee proposes to monitor flow releases downstream from Summersville dam using an existing outflow gaging station and acoustical flow measurements in the penstock.

The licensee states that total flow discharged by either the HBVs or the turbines will be monitored using the existing USGS gaging station (#03189600), located approximately 1,700 feet downstream from Summersville dam. ^{4/}

The licensee indicates that maintenance of the gaging station is currently performed by the USGS, and occurs quarterly with gage accuracy verified bi-annually. The licensee does not propose to alter the maintenance or calibration schedule that currently exists for the gaging station. The licensee indicates that the gaging station output will be directly linked to the Programmable Logic Computer (PLC), which will be located in the powerhouse. The licensee states that this design will allow flow conditions at the gaging station to be monitored hourly, as well as providing a mechanism to make alterations to flow releases as

^{3/} When COE releases flows less than 800 cfs, the turbines would be shutdown, and flow released through the existing Howell-Bunger valves (HBV), as presently occurs. Flows released by COE in excess of 4,000 cfs will also be discharged through the HBVs.

^{4/} The gaging station is currently used to monitor flow released from the project dam, and is operated/maintained by USGS under an agreement established with COE.

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directed by COE. Furthermore, the licensee states that the PLC will store all data, and facilitate data retrieval for compliance reporting.

In addition to using the USGS gaging station, the licensee proposes to instantaneously monitor the flow passing through the turbines by using acoustical flow measuring equipment installed in the penstock. The licensee states that the acoustical instrument output will be linked to the PLC, and will provide instantaneous data on flow passing through the two turbines. 5/ The licensee proposes to calibrate and maintain the acoustical equipment in accordance with the manufacturer's recommendations.

Compliance Monitoring and Reporting

The licensee proposes to maintain the flow records for verifying compliance with releases that are normally made by COE. The licensee also proposes to file a report with the Commission, annually, indicating any periods during which the hydropower project did not make releases in compliance with Article 402. 6/ In the event that an agency requests flow data, the licensee proposes to provide the information within 30 days of the request.

The licensee states that the flow data generated from the gaging station and penstock monitor will be recorded as maximum, minimum, and mean daily flows. The licensee also indicates that any period(s) during which the hydropower project discharges less than the minimum flow will be recorded. Hourly flow data will be maintained and available for review for the term of the project license.

Furthermore, the licensee states that in the event that the hydropower project's operations and resulting flows are temporarily modified by operating emergencies, or for short periods as agreed to by the licensee, COE, the U.S. Fish and Wildlife Service (USFWS), NPS, and WVDNR, the licensee will notify the Commission as soon as possible, but no later than 10 days after such an incident.

5/ The acoustical equipment will be located in the penstock upstream of both turbines, but downstream from the relocated HBV No. 3.

6/ Article 402 stipulates that the Summersville Project may use flows as provided by the COE, and maintain the minimum flow discharges at all times, as provided by COE.

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AGENCY COMMENTS

By letter dated June 19, 1996, the licensee provided COE, USGS, NPS, WVDNR, and the West Virginia Division of Environmental Protection (WVDEP) a draft copy of the project flow monitoring plan for their review and comment. By letters dated July 1, 1996, July 19, 1996, July 24, 1996, and July 26, 1996, WVDNR, COE, NPS, and USGS, respectively, responded to the licensee's request for comments. No comments were received from WVDEP.

The WVDNR and NPS, in reviewing the information provided in the draft plan, found the plan acceptable, and had no other comments. The COE provided mostly grammatical corrections to the draft flow monitoring plan, but did provide limited substantive comments. The COE states that historical data, which the licensee references on page 2 of the plan, has no relevance to future flow conditions or the proposed operating plan. The COE requested that the references to the historical flow data be removed from the plan.

The USGS stated that continuous records of streamflow for USGS gaging station No. 03189600 on the Gauley River below the Summersville dam, may no longer be maintained by USGS. The USGS commented that this could seriously affect the flow monitoring plan for the Summersville Project.

The USGS has indicated that many streamflow gages in West Virginia may be closed because of a cutoff of funding by the State. The USGS also indicated that some gages, including the USGS gage below the Summersville dam, that are partially funded by COE may continue to be used, but at a reduced level, to aid in flood management. However, USGS states that while these gages may continue to be used, the periodic measurements to verify the ratings and supplemental adjustments for computation of continuous streamflow records will no longer be available.

The USGS states that they are continuing to seek cooperative funding to operate the complete gaging program in West Virginia. The USGS has suggested that if willing, the licensee may wish to fund continuation of the streamflow record computations for the Gauley River below the Summersville dam. The USGS estimates this cost to be \$5,100 for the period between October 1996 through September 1997.

LICENSEE'S RESPONSE TO AGENCY COMMENTS

In a letter dated August 5, 1996, the licensee responded to COE's comments. The licensee did not respond to USGS's comments concerning the continued operation of USGS gage No. 03189600.

The licensee's August 8, 1996 filing incorporated all of COE's concerns regarding grammatical changes to the flow

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monitoring plan. However, the licensee did not remove the reference to historical flow information, as COE had requested. The licensee's August 5, 1996 letter to COE addressed the historical flow issue.

In the August 5 letter, the licensee acknowledged that historical data has no relevance to future flow conditions. The licensee states that the historical flow information is provided solely for the purpose of showing that the hydroelectric turbines proposed for use at the project do not have the capacity to modify either the high or low flows (historical or future) released from the Summersville dam.

DISCUSSION AND CONCLUSIONS

Article 403 required the licensee to file with the Commission, for approval, a plan to measure and report project flows and operation records to monitor compliance with the mode of operation stipulated in Article 402. The licensee's plan, filed with the Commission on August 8, 1996, fulfills the requirements of Article 403.

During the consultation period, COE and USGS provided the licensee with various editorial and substantive comments concerning the required plan. The discussion below pertains to COE's comments that the licensee responded to in its August 5 letter to COE, and USGS's comments that the licensee did not respond to.

Historical Flow Data

The COE states that technically, the historical flow data has no relevance to future flow conditions or the proposed operating plan. The COE requested that the reference to this information be removed from the flow monitoring plan.

While the historical flow data has no relevance to future flow conditions, the information does describe flow conditions in the river. Furthermore, as noted by the licensee, the information is helpful in characterizing the flow versus project operations relationship. Because the historical flow data does not directly affect the gaging requirements for, and the gaging system of, the proposed project, there is little need to remove the information from the plan.

USGS Gaging Station Operation

In their July 26, 1996 letter, the USGS indicated that the continuous records of streamflow for gage No. 03189600 below the Summersville dam may no longer be maintained by USGS. The USGS also stated that this could seriously affect the flow monitoring plan for the proposed project.

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The streamflow gage located directly below the Summersville dam is funded in part by USGS, with additional funding being provided by COE for flood management purposes. The USGS is responsible for the operation and maintenance of the gaging station, including the flow recording and gage calibration duties. The USGS, because of funding constraints, has indicated that the periodic measurements to verify the ratings and supplemental adjustments for computation of continuous streamflow records will no longer be available.

The licensee, in its flow monitoring plan filed on August 8, 1996, proposes to use the subject gaging station as one of two components to measure streamflow and determine compliance with Article 402. Of particular importance to monitoring compliance with Article 402 is the ability to obtain accurate, unbiased data from the gaging station. To discontinue calibration of, and flow recording from, the Summersville gaging station would reduce the ability of the licensee to monitor compliance with Article 402, and thereby hinder the licensee's ability to meet the requirements of Article 403.

The USGS indicates that they are continuing to seek cooperative funding to operate the complete gaging program for West Virginia. The USGS also indicates that if cooperative funding is not found, their funding for the Summersville gage would be discontinued by October 1, 1996. Because of the importance of this gaging station to measuring river flow in the Gauley River and flow releases from the Summersville dam, continuing to operate this gaging station at its full level would be important.

Therefore, if funding for the Summersville gage is discontinued, as suggested by USGS, the licensee should notify the Commission 30 days from receipt of information indicating that operation of the USGS gage maybe discontinued. In its notification filing, the licensee should include an alternative proposal, for Commission approval that will document compliance with Article 402 of the license. The filing should also include a discussion of any funding, operational, and/or maintenance considerations related to the continued use of the existing gaging station, a description of any new gaging equipment to be installed, and any relevant correspondence with COE, USGS, WVDNR, and WVDEP.

Compliance Reporting

In accordance with Article 403, the licensee proposes to file an annual report with the Commission indicating periods during which project operations, including minimum flows, are in violation with Article 402. Furthermore, the licensee proposes to notify the Commission no later than 10 days following an incident where project operations and minimum flows are

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alternative proposal, for Commission approval, that documents compliance with Article 402 of the license. The filing shall also include a discussion of any funding, operational, and/or maintenance considerations related to the continued use of the existing gaging station, a description of any gaging equipment to be installed, and any relevant correspondence with COE, USGS, WVDNR, and WVDEP.

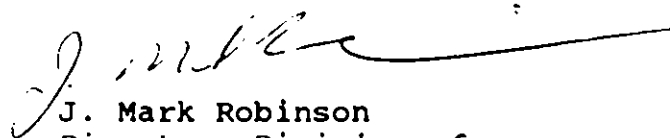
(C) If flows through the project, as measured by the approved gaging system, deviate from the flows released by COE through the Summersville dam and the flow requirements under Article 402, the licensee shall file a report with the Commission within 30 days of the incident. The report shall, to the extent possible, identify the cause, severity, and duration of the incident, and any observed or reported adverse environmental impacts resulting from the incident. The report shall also include: (1) operational data necessary to determine compliance with Article 402; (2) a description of any corrective measures implemented at the time of occurrence and the measures implemented or proposed to ensure that similar incidents do not recur; and (3) comments or correspondence, if any, received from the resource agencies regarding the incident. Based on the report and the Commission's evaluation of the incident, the Commission reserves the right to require modifications to protect facilities and operations to ensure future compliance.

(D) Unless otherwise directed in this order, the licensee shall file an original and eight copies of any filing required by this order with:

The Secretary
Federal Energy Regulatory Commission
Mail Code: DPCA, HL-21.1
888 First Street, NE
Washington, DC 20426

In addition, the licensee shall serve copies of these filings on any entity specified in this order to be consulted on matters related to these filings. Proof of service on these entities shall accompany the filings with the Commission.

(E) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days from the date of issuance of this order, pursuant to 18 C.F.R. § 385.713.


J. Mark Robinson
Director, Division of
Licensing and Compliance

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.

Project Nos. 10813-011 and 022 -3-

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 9/ 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.

9/ 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

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.

^{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. 19/ 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. 20/ No commenter disputes these conclusions. 21/

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

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

20/ See EA at p. 15.

21/ 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. 22/

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. 23/

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.

22/ 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.

23/ 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. 24/ 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, 25/ 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, 26/ 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.

24/ 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).

25/ 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).

26/ 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).

Project Nos. 10813-011 and 022 -10-

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. 27/ 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. 28/

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.

27/ See EA at pp. 21-22.

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

Project Nos. 10813-011 and 022 -11-

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...)

Project Nos. 10813-011 and 022 -12-

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).

Project Nos. 10813-011 and 022 -13-

outlet conduits from the Corps' Summersville Dam; (b) a powerhouse with two 40-MW turbine/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

Project Nos. 10813-011 and 022 -14-

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.

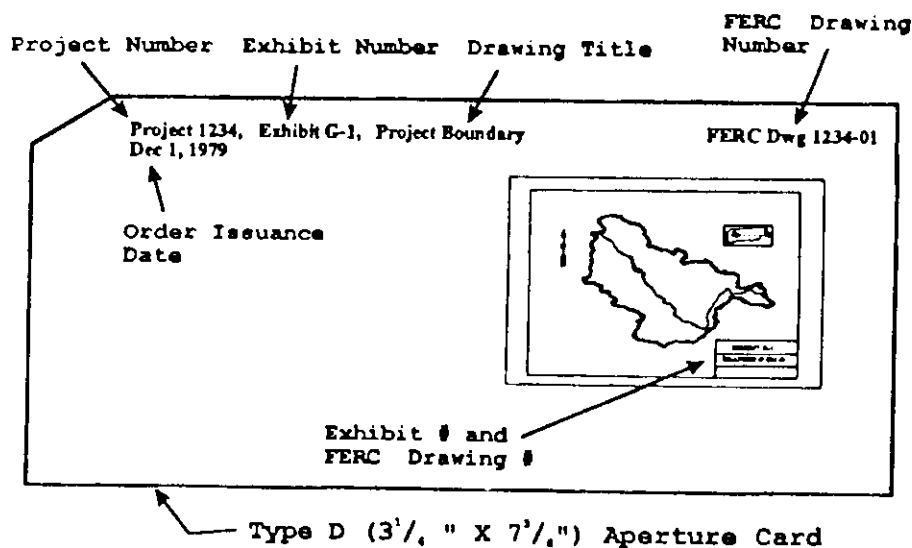


Figure 1. Sample Aperture Card Format

Project Nos. 10813-011 and 022 -15-

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,
Secretary.

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

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

City of Summersville, West Virginia) Project No. 10813-019

ORDER APPROVING RECREATION PLAN IN PART
AND REQUIRING SUPPLEMENTAL PLAN

NOV 22 1996

On August 29, 1996, the City of Summersville, licensee for the Summersville Project, FERC No. 10813, filed a recreation plan (plan) pursuant to article 410 of the license. The Summersville Project, located on the Gauley River in Nicholas and Fayette Counties, West Virginia, was licensed on September 25, 1992. 1/

BACKGROUND

Article 410 requires the licensee to implement the measures contained in the Memorandum of Understanding (MOU) among the National Park Service (NPS), the Town (now City) of Summersville, and Noah Corporation, dated July 27, 1991 and filed with the Commission on August 9, 1991. Article 410 further requires the licensee, at least 90 days before the start of land-disturbing activities, file for Commission approval a plan that contains: a description, a map, and final design drawings for the recreation facilities required in the MOU. Article 410 states "the licensee shall include in the plan a tailrace fishing access facility at or near the powerhouse. . . . The licensee shall prepare the plan after consultation with the NPS Gauley River National Recreation Area manager, the U.S. Army Corps of Engineers' (COE) Huntington District, the West Virginia Professional River Outfitters (WVPRO), and the American Whitewater Affiliation (AWA)."

In a letter dated July 15, 1996, the NPS requested the Commission review the requirements of article 410 of the license. The NPS was working with the licensee to fulfill the requirements, but was concerned about the timing of the review process. 2/

1/ 60 FERC ¶ 61,291.

2/ Pursuant to the MOU, the licensee is required 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 signs. No specific dates for these facilities are in the MOU.

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NOV 22 1996

The MOU specifically states the licensee will improve the "access trail to the kayak put-in and replace the existing rafting put-in prior to initiation of construction of the hydropower project proper." The MOU also states that the licensee will follow the recommendations of the Gauley River General Management Plan to be developed or its equivalent.

In a letter to the NPS dated August 8, 1996, the Director, Division of Project Compliance and Administration, stated the licensee would be permitted to submit, for approval, the final design plans for improving the access trail to the kayak put-in and replacing the existing rafting put-in prior to beginning construction activities. This would allow the NPS additional time to review the remaining facilities while allowing the licensee to begin construction. As a result, this order focuses only on the access trail to the kayak put-in and replacement of the existing rafting put-in. The licensee will be required to file a supplemental recreation plan which addresses the remaining issues in the MOU.

LICENSEE'S PROPOSAL

The licensee filed the plan on August 29, 1996. The plan includes provisions to replace the rafting put-in at a location directed by the NPS. The put-in would be a concrete launching pad located downstream of the dam. The licensee intends to start construction by November 1, 1996 and complete the construction in two weeks. 3/

The plan also includes provisions for replacing the kayak access trail. The NPS directed the licensee to reserve two existing flat rocks for kayak launching and to keep the area separate from the raft launching. The licensee plans to modify the existing path by adding curves to certain sections to reduce the slope. The path's natural appearance will be maintained by planting shrubbery in areas that are modified.

CONSULTATION AND LICENSEE'S RESPONSE

The licensee consulted with the NPS, the COE, the WVPRO, and the AWA. The NPS requested specific changes to the drawings which were incorporated into the licensee's filing.

The WVPRO commented on the location of the changing rooms,

3/ The Commission issued an order on October 18, 1996 amending the license. In order to allow the licensee ample time to prepare for the start of construction of the recreation facilities, the Commission staff is adjusting the time frame two weeks. Construction should begin by November 29, 1996.

restrooms, and picnic tables. These comments will be addressed in the supplemental filings describing those facilities. The WVPRO also requested the licensee increase the size of the lower staging area and provide electric power to outfitters. The licensee responded that these provisions are not part of the MOU. If it is possible to make the lower raft staging area larger during construction, the licensee would work with the NPS and WVPRO to leave a larger cleared area. The licensee further stated that providing electric power to outfitters is beyond the requirements of the article.

The AWA commented on the timing of construction, stating it was concerned that construction would impact the rafting season. The licensee responded that all facilities would be constructed so as not to disrupt any rafting activities pursuant to the requirements of the license.

The COE did not provide comments on the plan; however, in comments on a filing for article 409, ^{4/} the COE, in a letter dated August 26, 1996, stated it was concerned with the impacts of the recreation facilities, specifically the restrooms, on the COE's sanitation system. These comments will be addressed when the licensee files the supplemental plan.

DISCUSSION AND CONCLUSION

The provisions to construct the rafting put-in area and to improve the kayak access trail prior to initiation of construction will ensure minimal conflicts with recreationists during construction. The improvements will enhance recreational access to the river.

The recreation plan meets the requirements of article 410 in part. The licensee should file, within 18 months of this order, a supplemental recreation plan, for Commission approval, to address the remaining facilities required by the MOU. These facilities include, but are not limited to, construction of the gender separate restrooms and changing area facility, appropriate interpretation and information signs, picnic tables, and a tailrace fishing area. This supplemental recreation plan should be prepared in consultation with the NPS, COE, WVPRO, and AWA. The licensee should allow the agencies at least 30 days to comment and address any comments in the filing, including why any comment was not incorporated. If an agency does not comment, the licensee shall include its letter of request in the filing.

^{4/} Article 409 requires the licensee to file for Commission approval a visual resource mitigation plan.

The August 29 recreation plan proposing the construction of the rafting put-in area and the kayak access trail should be approved.

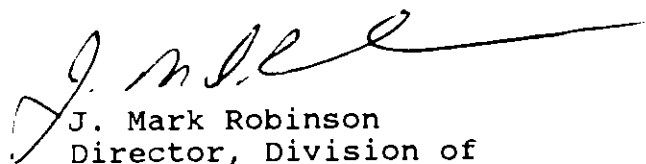
The Director orders:

(A) The recreation plan, filed on August 29, 1996, pursuant to article 410, is approved in part as modified by ordering paragraphs (B) and (C).

(B) The licensee shall construct the rafting put-in area and improve the kayak access trail beginning on November 29, 1996. Construction shall be completed by December 13, 1996.

(C) The licensee shall file, within 18 months of this order, a supplemental recreation plan, for Commission approval, to address the remaining facilities required by the Memorandum of Understanding with the National Park Service (NPS). These facilities include, but are not limited to, construction of the gender separate restrooms and changing area facility, appropriate interpretation and information signs, picnic tables, and a tailrace fishing area. This supplemental recreation plan should be prepared in consultation with the NPS, the U.S. Army Corps of Engineers, West Virginia Professional River Outfitters, and American Whitewater Affiliation. The licensee shall allow the agencies at least 30 days to comment and shall address any agency comments in the filing, including why any agency comment was not incorporated. If an agency does not comment, the licensee shall include its letter of request in the filing.

(D) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 C.F.R. § 385.713.


J. Mark Robinson
Director, Division of
Licensing and Compliance

78 FERC ¶ 62,140

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

City of Summersville

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Project No. 10813-023

ORDER APPROVING VISUAL RESOURCE PROTECTION PLAN

FEB 19 1997

On September 23, 1996, Gauley River Power Partners, L.P. (GRPP) filed, on behalf of the City of Summersville, licensee for the Summersville Project, FERC No. 10813, a visual resource protection plan. The plan was filed pursuant to article 409 of the license issued on September 25, 1992. 1/ Supplemental material was filed by GRPP on November 12, 1996. The Summersville Project is to be constructed on the Gauley River in Nicholas and Fayette Counties, West Virginia, and is to use surplus water or waterpower from the U.S. Army Corps of Engineers' (Corps) Summersville Dam.

BACKGROUND

Article 409 of the project license requires the licensee to file a plan to minimize the visual impacts of the powerhouse, new valve house, switchyard structures and equipment, and associated penstocks and flood release pipes. The plan is to further identify how the visual impacts of the project's transmission line will be minimized and how any conflicts with adjoining recreational uses will be addressed. The licensee was required to consult with the Corps' Huntington District, National Park Service (NPS), American Whitewater Affiliation (AWA), and West Virginia Professional River Outfitters (WVPRO) on the proposed plan.

THE PROPOSAL

The filed material states the licensee will primarily minimize views of project works from the nearby recreational facilities with vegetative plantings. The licensee has identified the primary vantage points of the project works to be from the commercial raft launch site just downstream of the project, and the access road which leads into the Gauley River National Recreation Area (GRNRA) and the recreational facilities immediately adjacent to the project area. The licensee proposes to use a mix of understory and canopy vegetation to screen views of project works from these vantage points. The vegetation will be compatible with native species currently found within the GRNRA and will be planted in a random manner, so as to appear as naturally occurring.

1/ 60 FERC ¶ 61,291 (1992).

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FEB 19 1997

Project No. 10813-023

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The powerhouse and other similar structures are to be constructed of concrete. The concrete will be color-toned to blend with the coloring of the natural bedrock formations surrounding the project. The roof of the powerhouse will be constructed at an elevation that is level with the recreation area parking facility and, as such, is not expected to create a significant visual impact prior to installation of the vegetative material. In addition, the supply/maintenance building to be constructed on the south side of the powerhouse will have metal siding of a neutral/natural color to blend with the surrounding landscape.

The project's transmission line will extend from the powerhouse, diagonally across the downstream face of the dam, to the top of the bank on the east side of the river. The transmission line will then follow a course inland from the river, primarily through undeveloped forest land, along Highway 19, and along an existing railroad right-of-way. The transmission line will also cross the nearby Meadow River downstream of the GRNRA. The licensee acknowledges this alignment will allow the transmission line to be visible to rafters launching at the area just downstream of the powerhouse, and at the point where it crosses the Meadow River, but states this alignment was established in conjunction with the NPS (the manager of the GRNRA) and is considered to have the least visual impact upon GRNRA users.

AGENCY COMMENTS

The licensee consulted with each of the agencies identified in article 409. The NPS filed comments that pertain to the vegetative screens that will be planted to block views of project works. The NPS identified plant species which it felt were more appropriate for the riparian zone in which the project is located. The NPS further stated that a detailed planting plan for vegetative screens should be approved by their agency prior to implementation at the project, as identified in the Memorandum of Understanding (MOU) required by article 410 of the project license.

The Corps filed comments that address the location of the transmission line across the face of the dam. The Corps' comments indicate that a different location should be considered to avoid visually impacting the existing recreational facilities and the overlook at the top of the dam. The Corps' comment letter, however, did acknowledge that the face of the dam may be "the only logical route for the power line to exit the gorge." The AWA did not file any comments and comments filed by the WVPRO principally request that they be consulted during implementation of the planting plan.

Project No. 10813-023

-3-

DISCUSSION

The licensee's plan adequately addresses all agency comments. The plan was modified to include the vegetative species recommended by NPS. Further, we concur with NPS that there are additional landscaping concerns which are to be addressed separately under the terms of the MOU, which was approved as part of the license under article 410. As such, we remind the licensee of these landscaping obligations and conclude that the visual resource protection plan, as filed, adequately meets the requirements of article 409.

With regard to the Corps' comments on the visual impacts of the proposed transmission line location, we find this issue has been addressed by previous Commission action. The location of the transmission line, as identified in the visual resource protection plan, was approved by the Commission's Order Amending License, Revising Annual Charges, and Lifting Stay, issued on October 18, 1996. 2/ Review of the above license amendment included a review of the visual impacts of the transmission line as proposed in the visual resource protection plan. This review concluded the transmission line would be visible to boaters and fishermen, but that the overall landscape character of the Meadow River Gorge and the aesthetic qualities of the dam face would not be significantly impacted by the proposed transmission line route. This review further concluded the proposed route would not constitute a major federal action significantly affecting the quality of the human environment. 3/

In addition to the above, ordering paragraph (H) of the October 18 order requires the licensee to consult with various agencies and affected land owners regarding the final design and placement of the transmission line. Given that this consultation could result in a need for additional measures to address the visual qualities of the transmission line, we will reserve the right to require changes to the visual resource protection plan.

Commission staff concludes the licensee has taken appropriate measures to minimize the visual impacts of the project and current location of the transmission line. The coloring of project works will blend with the surrounding environment and the vegetative material used for screening

2/ 77 FERC ¶ 61,046 (1996).

3/ See Final Environmental Assessment (EA) issued for the Summersville Hydroelectric Project, FERC No. 10813-011, October 1996. This EA was issued with the above cited order.

Project No. 10813-023

-4-

purposes will be consistent with plant species that occur naturally within the project area. The plan should therefore be approved.

The Director Orders:

(A) The visual resource protection plan, filed on September 23, 1996, and supplemented on November 12, 1996, is approved.

(B) The Commission reserves the right to require changes to the visual resource protection plan based on the final design plan for the transmission line and the results of consultation required by ordering paragraph (H) of the Order Amending License, Revising Annual Charges, and Lifting Stay, issued on October 18, 1996.

(C) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 CFR § 385.713.

A handwritten signature in dark ink, appearing to read "Kevin P. Madden", is written over a horizontal line.

Kevin P. Madden
Acting Director
Office of Hydropower Licensing

82 FERC ¶ 62,100

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

City of Summerville

)

Project No. 10813-024

ORDER APPROVING REQUEST FOR RELIEF OF ENDANGERED SPECIES
MONITORING PLAN PURSUANT TO LICENSE ARTICLE 407

MAY 4 1998

On August 30, 1996, the City of Summerville (the City), Licensee for the Summerville Project filed an Endangered Species Monitoring Plan (Plan), pursuant to license Article 407. 1/ On November 22, 1996, the City filed revisions which requested relief of the monitoring required by license Article 407. 2/ The Summerville Project is located on the Gauley River in Nicholas County, West Virginia.

On September 25, 1995 (supplemented on April 23 and July 15, 1996), the City of Summerville filed an application to amend its license. On October 18, 1996 the Commission granted the City's amendment and lifted the September 24, 1996 stay of the project license.

LICENSE REQUIREMENTS

License Article 407 requires the City to file a plan for protecting the federally-listed as threatened Virginia spirea (Spirea virginiana), the candidate species Barbara's buttons (Marshallia grandiflora), and their habitat. These plant species are to be protected from any land-clearing or land-disturbing activities related to construction of recreational facilities downstream of the powerhouse.

BACKGROUND

The Plan was timely filed with comments from the agencies. The Plan included measures to protect the two plant species from development of recreational facilities along the Gauley River to include two fisherman access trails on the east and west banks downstream of the powerhouse and an administrative access road.

The West Virginia Department of Natural Resources (WVDNR) and the U.S. Fish and Wildlife Service (FWS) concurred with the original Plan. By letter dated July 24, 1996, the U.S. Department of Interior's, National Park Service (NPS) stated that

1/ 60 FERC ¶ 61,291 (September 25, 1992).

2/ The City's request for relief was supplemented with additional information filed on June 2, 1997 and July 8, 1997.

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MAY 4 1998

Project No. 10813-024

-2-

it did not support the two fisherman access trails and the administrative access road. These downstream facilities would significantly put at risk important habitat and several rare species occurrences, according to NPS. The Virginia spirea and Barbara's buttons are both located downstream of the Summerville Dam. In response to the NPS, by letter dated August 12, 1996, the City stated that the administrative access road and the fisherman access trails were required by a MOA and the Section 401 Water Quality Certification (WQC). The City would consult with the WVDNR on acceptability of the NPS's recommendation.

REQUEST FOR RELIEF

By letter dated May 29, 1997, the City filed revisions to the Endangered Species Monitoring Plan. The revisions state that original protection measures are no longer needed because the NPS will not allow an administrative access road for trout stocking or paths for access beside the Gauley River (as indicated in the NPS's Gauley River Management Plan). The City, therefore, requests that the Commission remove the requirements of an Endangered Species Monitoring Plan. The City proposes to substitute fisherman access planned for the Muddlety Creek area on Summerville Lake instead of the administrative and fisherman access beside Gauley River.

AGENCY COMMENTS AND LICENSEE'S RESPONSES

By letter dated July 2, 1997, NPS provided comments on the City's proposal for relief of Article 407. In order to minimize impacts to Virginia spirea, Barbara's buttons, and their habitats, NPS recommends that the existing unimproved trail leading to the emergency spillway become an alternative trail which would improve access for fisherman and others. NPS recommends that this alternative trail be developed for primary access and secondary loop trails be constructed for river access to support fishing and other recreational interests. NPS will work with the licensee on preliminary design and alignment to ensure management objectives are met. The final design would be subject to NPS approval and would include development of an Endangered Species Monitoring Plan as required under license Article 407 prior to implementation.

By letter dated June 11, 1997, the FWS provided comments on the City's proposal for relief of license Article 407. FWS states that since the NPS has disallowed the construction of the trout stocking and fisherman access trails, no adverse effects will occur to federally-listed species or species of concern. In addition, except for an occasional transient species, no federally-listed endangered and threatened species or species of concern are known to exist in the immediate vicinity of the alternative proposal on Muddlety Creek on Summerville Lake.

Project No. 10813-024

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Therefore, 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 with the Service at this time. Should project plans change, or if additional information on listed and proposed species or species of concern becomes available, this determination may be reconsidered.

By letter dated September 26, 1997, the WVDNR states that since the original planned facilities downstream of the project dam will not be constructed due to constraints imposed by the NPS, the WVDNR will amend the Section 401 WQC. The revised WQC (dated October 17, 1997) deleted the original requirements and now states that the boat launch facility at Muddlety Creek will be constructed in lieu of the access road and two angler access trails.

DISCUSSION AND CONCLUSIONS


Conditions of Article 407 assume that the downstream recreational facilities will be constructed as recommended in a MOA between the City of Summerville, and/or their agent, the Noah Corporation, and the WVDNR, to include the Section 401 WQC, filed September 17, 1991. The WVDNR has now amended the WQC.

The City would serve no useful purpose in monitoring construction-related impacts to Virginia spirea and Barbara's buttons along the Gauley River because the City no longer proposes any ground-disturbing activity in this area. In addition, the FWS confirms that no effect to federally-listed species or species of concern is likely to occur in the alternative recreation site of Muddlety Creek. Therefore, the licensee's request for relief from the license requirements of Article 407 should be approved.

The Director orders:

(A) The Licensee's request, filed June 2, 1997, for relief from monitoring of endangered species vegetation required by license Article 407, is approved.

(B) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of this order, pursuant to 18 C.F.R. §385.713.



Carol L. Sampson
Director

Office of Hydropower Licensing

84 FERC ¶ 62,008

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

City of Summersville, West Virginia) Project No. 10813-035

ORDER APPROVING FINAL TRANSMISSION LINE DESIGN PLAN
(Issued July 2, 1998)

On April 20, 1998, and supplemented on May 4, 1998, 1/ Gauley River Power Partners, L.P. (GRPP) filed, on behalf of the City of Summersville, licensee for the Summersville Project, FERC No. 10813, the final transmission line design plan (plan). This plan was filed pursuant to article 414 contained in the Order Amending License, Revising Annual Charges, and Lifting Stay, issued on October 18, 1996 (October order). 2/ The Summersville Project is to be constructed at the U.S. Army Corps of Engineers' (Corps) Summersville Dam on the Gauley River in Nicholas and Fayette Counties, West Virginia.

BACKGROUND

On September 25, 1995, and supplemented April 23 and July 15, 1996, the licensee filed an application to amend its license to revise the route of the project's transmission line, and reconfigure and relocate the project's powerhouse. The project was licensed on September 25, 1992. 3/ The licensed project included an eight-mile-long, 138-kilovolt (kV) transmission line, running to a substation belonging to Monongahela Power Company, to whom 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.

Summersville proposed to amend its license in order to reduce project costs and to reflect a power purchase agreement it had entered into with Appalachian Power Company (APCo). Summersville proposed 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. 4/

-
- 1/ The May 4, 1998 filing contained two corrected maps. The licensee had inadvertently omitted the pole locations for one section of the line in the April 20 filing.
- 2/ 77 FERC ¶ 61,046 (1996)
- 3/ 60 FERC ¶ 61,291 (1992)
- 4/ Following its original September 25, 1995 amendment application, Summersville supplemented its application on April 23, 1996, to revise the route of the transmission

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Project No. 10813-035

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In the October order, the Commission approved the revised powerhouse and realigned transmission line route. Due to concerns raised by property owners along the newly approved route, this order also amended the license to include article 414. Article 414 states:

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, right-of-way (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).

LICENSEE'S PROPOSAL

The licensee's proposed final transmission line route starts near the top of the new powerhouse building below Summersville Dam. The line crosses the Gauley River paralleling Route 129 for approximately 1/3 mile. The proposed line turns south and runs along Highway 19. It crosses Highway 19 at Mt. Lookout Road continuing south across the Meadow River. Once it crosses the Meadow River, it parallels a railroad track and finally connects with the APCo Power Company substation in Fayette County near the beginning of Glade Creek.

The licensee's final transmission line design plan includes four minor changes to the route approved in October, 1996. These

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.

Project No. 10813-035

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changes were either made to address concerns from property owners or by the licensee to further minimize visual impacts of the transmission line on the Meadow River and Glade Creek area. These proposed minor changes are as follows:

1. Segment #1- The licensee moved the transmission line 400 feet to the east for approximately 3600 feet to address concerns from the property owner. This realignment avoids a property owner's proposed home site.

2. Segment #2- This change involves five parcels of property south of Mt. Lookout Road. The landowners requested this change to route the transmission line away from a pond and to accommodate future development of the property. The line was adjusted approximately 200 feet to the east for about 2600 feet.

3. Segment #3- These proposed changes involve the area next to the Meadow River. On the east side of the river, the licensee proposes to move the line 250 feet to the south for approximately 1 mile. This change would allow the line to span the river at a height elevation which would eliminate the ROW clearing on the east bank (except for very tall trees). The line would also cross the river at a sharper angle to reduce the amount of clearing visible from the river.

4. Segment #4- The licensee proposes to move the transmission line approximately 100 feet so it falls within the existing 100-foot railroad right-of-way that runs beside the Meadow River and Glade Creek. This section is approximately 2.8 miles long. This change would reduce the amount of clearing needed. In addition, this segment would avoid two properties.

The plan includes a description of the measures the licensee will take to minimize visual impacts. These measures include revegetating the ROW, vegetative screening, locating poles at a higher elevation at road and river crossings to make the lines and poles less visible, changing alignment of the line to minimize long tunnel views, and use of a helicopter to pull the transmission lines across the Meadow River to minimize ground disturbance.

The licensee filed maps showing the affected properties, any residences, the ROW limits, and pole locations. It further states that the cleared section of the ROW will provide access for construction and maintenance, hence no new access roads will be necessary.

Pursuant to article 414, the licensee included its raptor protection plan, and phase spacing, configuration, and grounding practices. It also included a construction schedule. The licensee plans to begin construction of the transmission line during the last 6 to 9 months of project construction which is scheduled to

Project No. 10813-035

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begin by October, 1998. The ROW construction will take approximately 6 months and will begin in January, 2000. The interconnection at the dam and substation will be completed by July, 2000. In addition, the licensee will avoid any endangered species, specifically Virginia Spirea. The transmission line will also not impact any cultural resources.

CONSULTATION

The licensee consulted with the affected property owners, the FWS, the WVSHPO, and WVDNR. In addition, on its own accord, the licensee consulted with the National Park Service (NPS), the American Whitewater Affiliation (AWA), and the Mt. Nebo-Mt. Lookout Property Protection Association (Association). The WVSHPO and WVDNR stated the proposal was acceptable. The FWS did not provide any comments.

Several of the property owners, the AWA, and the Association filed comments including requests to bury the line, to move the line off their property, to use the transmission line route approved in the original license, or to use a revised route such as the one proposed by the Association during a previous proceeding on the license amendment. These comments have been considered in several proceedings and do not require further consideration. 5/

The licensee worked with several property owners to adjust the transmission line across a particular property. None of these changes affect new property owners or resources not previously considered in the environmental assessment issued with the October 1996 order.

The NPS and AWA noted a Rails-to-Trails proposal is being considered along the Chesapeake and Ohio railroad right-of-way on the Meadow River. These commenters were concerned that the transmission line would be obtrusive.

DISCUSSION AND CONCLUSION

When the Commission approved the transmission line route, it understood that minor modifications may be necessary once the line was surveyed. The Commission also understood that some modifications would be necessary to meet the needs of property owners, hence the addition of article 414 to the license.

5/ See 77 FERC ¶ 61,046, 78 FERC ¶ 61,051, and 80 FERC ¶ 61,004.

The final transmission line design plan meets the requirements of article 414. The final alignment does not result in any new impacts to the environment. Impacts resulting from the construction of the transmission line were evaluated as part of the license amendment and included in the environmental assessment. Segments #1 and #2, proposed by the licensee, were agreed to by the property owners. These changes would reduce the impacts to the affected property owners. Segments #3 and #4 reduce the visual impact on the Meadow River by minimizing the amount of forest clearing. They also reduce impacts to certain property owners by moving the transmission lines off of these properties onto a property that would be impacted by another portion of the transmission line route. ^{6/} The Commission staff considers these changes to be minor modifications permitted under article 414 and beneficial because they reduce the visual impacts of the line and accommodate landowners.

Regarding the proposed Rails-to-Trails conversion along a portion of the line, there is no current agreement or sale of property for this proposal. The transmission line design was approved prior to the initiation of this proposal. However, the Commission staff is sensitive to the proposal and believes the transmission line will not adversely affect the Rails-to-Trails conversion because the transmission line would be located on less than 1/2 mile of the 14.7 miles of abandoned railroad. In addition, the transmission line is not incompatible with trails as trails are often incorporated into transmission line ROWs. ^{7/}

The licensee is working with property owners to reduce the visual impacts from the construction of the transmission line. The measures the licensee intends to take include use of wooden poles which would blend with the surrounding trees and planting vegetative screening. Article 405 of the license required planting of vegetation as part of the transmission line management plan. The WVDNR provided a list of the plants the licensee should use to provide biomass for wildlife. The licensee agreed to provide a list of the species used to the NPS for comment.

The final transmission line design plan fulfills the requirements of article 414. The measures the licensee proposes

^{6/} The property owner did not object to the new section on the property.

^{7/} Trail professionals accept that trails follow natural corridors as well as man-made features such as abandoned railbeds, canals, and other public rights-of-ways. (Little, Charles, 1990. Greenways for America, Baltimore, Johns Hopkins University Press)

Project No. 10813-035


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along the transmission line such as vegetative screening and pole placement will adequately mitigate the visual impacts. The licensee states it will use sound engineering practices during the construction of the line. The licensee's proposal should be approved.

The Director orders:

(A) The Final Transmission Line Design Plan, filed on April 20, 1998 and supplemented on May 4, 1998, pursuant to article 414 is approved.

(B) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 CFR § 385.713.


Carol L. Sampson
Director
Office of Hydropower Licensing

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

City of Summersville

Project No. 10813-044

ORDER AMENDING LICENSE

(Issued November 5, 1999)

On July 19, 1999, the Gauley River Power Partners filed on behalf of the City of Summersville (Licensee), an Application for an Amendment to its License for the Summersville Hydroelectric Project, FERC Project No. 10813. The hydroelectric project is to be located at the existing Corps of Engineers' (COE) Summersville Dam on the Gauley River in Fayette and Nicholas Counties, West Virginia. The licensee proposes to modify the section of the project's transmission line as it leaves the project's electrical substation adjacent to the powerhouse. The transmission line has not been constructed yet.

The project's transmission line route under the license, originates from the project's substation on the eastern riverbank, and runs in front of the Dam's Howell-Bunger valves to the western riverbank. The COE brought to the attention of the licensee that there would be ice formation on the transmission line caused by the spray from the Dam's Howell-Bunger valve discharges. During detailed engineering of the transmission line, and based on the COE's recommendation, the design of the transmission line allowed for a 2.5-inch build up of ice. In order to avoid the effects from long-term stress on the transmission lines and larger and costlier support structures required to withstand this tension, the licensee looked for an alternative that could resolve the icing problem.

To reduce the impacts of the ice build up on the transmission line, the licensee is proposing to move the line from in front of the Howell-Bunger valves to a pole structure behind the existing valve house. The transmission line then will cross the base of the dam and river to the western bank to coincide with the second line segment of the approved route. The changes will be entirely on COE's land within the vicinity of the dam, and within the project boundary. The transmission line modifications will reduce the line tension from the ice build up, eliminate two sets of poles on the eastern riverbank, and reduce tree clearing.

The licensee consulted with the American Whitewater Affiliation, the COE, the National Park Service, the West Virginia Professional Rafting Outfitters, the State Historic Preservation Officer, and the West Virginia Department of Natural Resources. No one objected to the proposed modifications.

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Historic Preservation Officer, and the West Virginia Department of Natural Resources. No one objected to the proposed modifications.

The modifications would have slightly less impact on the environment because they would reduce the number of poles needed and the amount of tree clearing. In addition, the relocated section would be closer to the base of the dam and would be consistent with the licensee's approved visual resource protection plan.¹

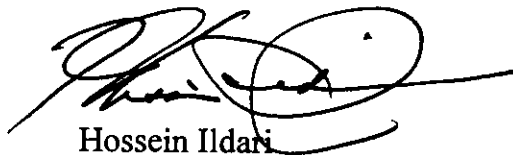
Based upon our review of the filing and agency comments, we conclude that the proposed modifications to the transmission line are minor and would slightly decrease the project's visual impact compared to the approved route. Therefore, this order approves the proposed modifications to the transmission line.

The Director orders:

(A) The amendment of license, which was filed on July 19, 1999, is approved effective the first day of the month in which this order is issued.

(B) Within 90 days of the date of issuance of this order, the licensee shall file revised exhibit G drawings to show the approved modifications to the transmission line.

(C) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 C.F.R. §385.713.

A handwritten signature in black ink, appearing to read 'Hossein Ildari', with a large, stylized flourish extending from the end of the signature.

Hossein Ildari
Chief
Engineering Compliance Branch

¹ See 78 FERC ¶ 62,120-Order Approving Visual Resource Protection Plan issued on February 19, 1997.

90 FERC ¶ 62,229

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

City of Summersville, West Virginia

Project No. 10813-046

ORDER APPROVING SUPPLEMENTAL RECREATION PLAN

(Issued March 30, 2000)

On November 18, 1999, the City of Summersville, licensee for the Summersville Project, FERC No. 10813, filed a supplemental recreation plan (plan) pursuant to article 410 of the license and the Order Approving Recreation Plan and Requiring Supplemental Recreation Plan issued November 22, 1996.¹ The Summersville Project, located on the Gauley River in Nicholas and Fayette Counties, West Virginia, was licensed on September 25, 1992.²

BACKGROUND

Article 410 requires the licensee to implement the measures contained in the Memorandum of Understanding (MOU) among the National Park Service (NPS), the Town (now City) of Summersville, and Noah Corporation, dated July 27, 1991, and filed with the Commission on August 9, 1991. The MOU 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 signs. No specific dates for installation of these facilities are in the MOU. The licensee shall prepare the plan to implement the measures in the MOU after consultation with the NPS Gauley River National Recreation Area manager, the U.S. Army Corps of Engineers' (COE) Huntington District, the West Virginia Professional River Outfitters (WVPRO), and the American Whitewater Affiliation (AWA).

¹ 77 FERC ¶ 62,108 (1996)

² 60 FERC ¶ 61,291 (1992).

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Project No. 10813-046

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The first part of the MOU, including the installation of the whitewater raft launching facility and the upgrade of the access trail to the existing kayak launching area, was approved in November, 1996. This order also required the licensee to file a supplemental plan.³

LICENSEE'S PROPOSAL

The supplemental plan includes provisions to construct gender separate restrooms and changing facilities. These facilities will be housed in one building which contains a storage area and men's and women's restrooms with flush toilets and sinks and a separate changing area. Special provisions were designed into the building to reduce maintenance during the off-season.

The licensee will install a new sewage line and lift station on COE property which will connect to the COE facilities. In addition, a new surge tank will be added between the new facilities and the existing sewage lift station. Once the facilities are built, the COE will accept ownership and assume operating responsibility.

The licensee will also provide twelve picnic tables and will work with the NPS to coordinate their placement. It will install interpretive and informational signage. The licensee will also provide a handicapped tailrace fishing facility. This facility will be a 25-foot long platform that will overhang the water by five feet. Access will be via a gently graded path that will connect to the parking area at the north end of the NPS park. The licensee states it will complete implementation of the recreation plan by November, 2000.

CONSULTATION

The licensee consulted with the NPS, the COE, the WVPRO, and the AWA. The WVPRO did not object to the plan. The COE's comments were incorporated into the plan. The NPS provided numerous comments on the plan. The licensee incorporated the majority of the comments into the plan. The licensee did not incorporate several

³ Originally the MOU required the license to, among other things, repair riverbank erosion at the project. The NPS and the licensee entered into the Commission's Dispute Resolution Process. The resulting agreement, dated August 3, 1999, requires the licensee to upgrade the COE's existing sewage system by providing a new sewage line and lift station. In exchange, the NPS deleted the requirement for the licensee to repair riverbank erosion and limited the costs for design review to \$15,000.

Project No. 10813-046

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comments stating they were outside the scope of the plan. These include the NPS's request for a storage area for lawn and maintenance equipment, a baby changing station, and sensor operated water flow devices.

DISCUSSION AND CONCLUSION

The licensee's plan meets the requirements of the MOU as amended by the Dispute Resolution Agreement. The plan will provide additional recreational facilities and sanitary facilities in conjunction with the NPS and COE.

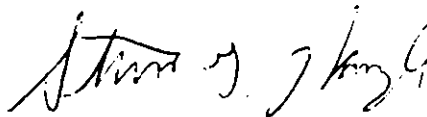
Commission staff agrees with the licensee in its incorporation of the NPS' comments. Staff believes the request for a baby changing area, lawn and maintenance equipment storage area, and sensor operated water flow devices are outside the scope of the MOU and should not be required in the plan. The supplemental recreation plan meets the requirements of article 410 and should be approved.

The Director orders:

(A) The supplemental recreation plan, filed on November 18, 1999, pursuant to article 410, is approved. The licensee shall complete construction of the facilities by November 30, 2000.

(B) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 C.F.R. § 385.713.

Sincerely,



for Fred E. Springer
Director
Division of Hydropower Administration
and Compliance

92 FERC 62,276

**UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION**

City of Summersville

Project No. 10813-048

ORDER APPROVING REVISED EXHIBITS

(Issued September 28, 2000)

On April 7, 2000, Gauley River Power Partners, L.P., on behalf of the City of Summersville, licensee for the Summersville Hydroelectric Project, FERC No. 10813, filed revised exhibit G drawings for the Commission's approval. The exhibits were filed pursuant to ordering paragraph (B) of the Order Amending License issued on November 5, 1999.¹ The project is to be located at the existing U.S. Army Corps of Engineers' Summersville Dam on the Gauley River in Fayette and Nicholas Counties, West Virginia.

On November 5, 1999, the Commission approved a modification of a section on the proposed transmission line, as it leaves the project's electrical substation adjacent to the powerhouse. Ordering paragraph (B) of the order required the licensee to file for approval revised exhibit G drawings depicting the approved modifications to the transmission line.

The licensee filed two revised exhibit G drawings; one exhibit drawing showing the entire transmission line, and the other showing the project area. The exhibits adequately show the approved modifications on the transmission line, and conform to the Commission's rules and regulations. The revised exhibit G drawings replace exhibits G-1 and G-2 drawings, labeled 10813-011 through 013 on the license. This order approves revised exhibit G-1 and G-2 drawings for the Summersville Project.

¹See, 89 FERC ¶62,101.

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The Director orders:

(A) The following revised exhibit G drawings, filed on April 7, 2000, conform to the Commission's rules and regulations and are approved and made a part of the license.

EXHIBIT	FERC. DRAWING No.	FERC. DRAWING TITLE	SUPERSEDING
G-1	10813-014	TRANSMISSION LINE MAP	10813-11, 10813-12
G-2	10813-015	PROJECT PLAN	10813-13

(B) Within 90 days of the date of issuance of this order, the licensee shall file three original sets of aperture cards of the approved drawings. All aperture cards should be reproduced on silver or gelatin 35 mm 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 (10813-014 and 10813-015) shall be shown in the margin below the title block of the approved drawings. After mounting, the FERC Drawing Number should be typed in the upper right corner of each aperture card. Additionally, the Project Number, FERC. Exhibit (i.e., G-1), Drawing Title, and date of this order should be typed in the upper left corner of each aperture card. See Figure 1.

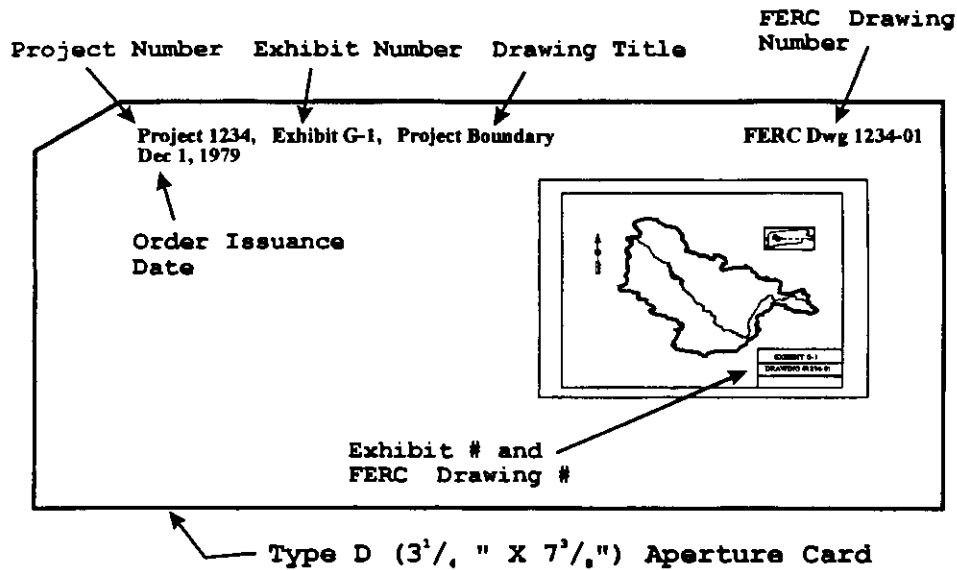


Figure 1. Sample Aperture Card Format

Two original sets of aperture cards should be filed with the Secretary of the Commission. The remaining set of aperture cards should be filed with the Commission's New York Regional Office.

(C) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 C.F.R. § 385.713

Mohamad Fayyad
Compliance Team Lead, Group 2
Division of Hydropower Administration
and Compliance

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

City of Summersville

Project No. 10813-053

ORDER APPROVING AS-BUILT TRANSMISSION
LINE DRAWING UNDER ARTICLE 315

(Issued October 17, 2001)

On June 1, 2001, Gauley River Power Partners, L.P.(GRPP), on behalf of the City of Summersville, licensee for the Summersville Hydroelectric Project, FERC No. 10813, filed an as-built exhibit G drawing for the Commission's approval. The exhibit was filed to comply with license article 315.¹ The project is located on the Gauley River in Fayette and Nicholas counties, West Virginia.

BACKGROUND

On October 18, 1996, the Commission issued an Order Amending License, revising Charges, and Lifting Stay for the Summersville Hydroelectric Project to include construction of a 9.9-mile-long, 69-kV transmission line, to connect with the nearest Appalachian Power Company's substation.²

On December 27, 2000, the Commission issued an Order Approving As-Built Transmission Line Drawings.³ On March 25, 2001, Mr. Jack C. McClung filed a petition for late intervention and request for rehearing. The filing stated that as-built transmission line and pole locations across the McClung property were different from that previously approved by the Commission and the changes were without McClung's prior knowledge or consent.

On March 27, 2001, GRPP and Mr. McClung entered into an agreement in which GRPP would replace the double pole structures with single pole structures for both Structures 84 and 85, and Mr. McClung would accept the transmission line as modified

¹60 FERC ¶ 62,1291, issued September 25, 1992, Order Issuing License.

²77 FERC ¶ 61,046 (1996).

³93 FERC ¶ 62,243 (2000).

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and drop all legal actions relating to transmission line modifications.⁴ These modifications were completed in accordance with the agreement in mid-April 2001. The easement route remains unchanged, as previously approved.

REVIEW

We reviewed the as-built exhibit G-8 drawing which shows single pole structures for both Structures 84 and 85. The exhibit conforms to the Commission's rules and regulations, and is approved by this order.

The Director orders:

(A) The following exhibit drawing is approved and made part of the license:

FERC No.	Exhibit No.	Title	Superseding
10813-25	G-12	69 kV Power Line	10813-21

(B) The superseded exhibit drawing is eliminated from the license.

(C) Within 90 days of the date of issuance of this order, the licensee shall file three original sets of aperture cards of the approved drawings. All aperture cards should be reproduced on silver or gelatin 35 mm microfilm. All microfilm should be mounted on Type D (3 1/4" x 7 3/8") aperture cards.

Prior to microfilming, the FERC Drawing Number (10813-25) shall be shown in the margin below the title block of the approved drawing. After mounting, the FERC Drawing Number should be typed on the upper right corner of each aperture card. Additionally, the Project Number, FERC Exhibit (G-12) Drawing Title, and date of this order should be typed in the upper left corner of each aperture card. See Figure 1.

⁴An agreement between Gauley River Power Partners, L.P. and Mr. Jack C. McClung on transmission line pole structures modifications, filed October 16, 2001.

Project Number	Exhibit Number	Drawing Title	FERC Drawing Number
Project 1234, Dec 1, 1979	Exhibit G-1,	Project Boundary	FERC Dwg 1234-01

Order Issuance Date

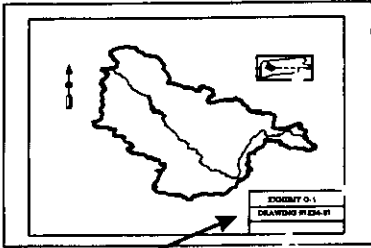


Exhibit # and FERC Drawing #

Type D (3 1/4" X 7 3/8") Aperture Card

Figure 1. Sample Aperture Card Format

Two original sets of aperture cards should be filed with the Secretary of the Commission. The remaining set should be filed with the Commission's New York Regional Office.

(D) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 C.F.R. § 385.713.



Mohamad Fayyad
Engineering Team Lead
Engineering and Jurisdiction Branch
Division of Hydropower Administration
and Compliance

98 FERC ¶ 62, 179
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

City of Summersville, West Virginia

Project No. 10813-059

ORDER APPROVING REVISED SIGNAGE PLAN
PURSUANT TO ARTICLE 410

(Issued March 15, 2002)

On February 7, 2002, the City of Summersville, licensee for the Summersville Project, FERC No. 10813, filed its revised signage plan (plan) for the project's recreation area pursuant to article 410 of the license. The Summersville Project, located on the Gauley River in Nicholas and Fayette Counties, West Virginia, was licensed on September 25, 1992.¹

Article 410 requires the licensee to implement the measures contained in the Memorandum of Understanding (MOU) among the National Park Service (NPS), the Town (now City) of Summersville, and Noah Corporation, dated July 27, 1991, and filed with the Commission on August 9, 1991. The MOU 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.² The licensee was also required to install a new restroom and changing facility, picnic tables, and interpretive and informational signs. No specific dates for installation of these facilities are in the MOU. The licensee was required to consult with the NPS Gauley River National Recreation Area manager, the U.S. Army Corps of Engineers' (COE) Huntington District, the West Virginia Professional River Outfitters (WVPRO), and the American Whitewater Affiliation (AWA).

The licensee's plan includes copies of the interpretive and informational signage and a map showing the placement in its recreation area.

¹ 60 FERC ¶ 61,291 (1992).

² The first part of the MOU, including the installation of the whitewater raft launching facility and the upgrade of the access trail to the existing kayak launching area, was approved in November, 1996. This order also required the licensee to file a supplemental recreation plan which was approved March 30, 2000 (90 FERC ¶ 62,229)

The licensee consulted with the NPS, the COE, the WVPRO, West Virginia Department of Natural Resources, and the AWA. The NPS provided numerous comments on the plan. The licensee states it worked with the agencies to revise the signage plan to meet the needs of the public and the agencies. The licensee incorporated the comments into the design and placement of the signs as described in the plan.

The interpretive signs provide information on the recreation site and whitewater rafting. The information signs will explain the rules and regulations of the recreation site as well as provide safety information. The licensee's signage plan meets the requirements of the MOU and article 410 and should be approved.

The Director orders:

(A) The revised signage plan, filed on February 7, 2002, pursuant to article 410, is approved.

(B) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 C.F.R. § 385.713.

John E. Estep
Division of Hydropower Administration
and Compliance

100 FERC ¶ 62,137

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

City of Summersville

Project No. 10813-060

ORDER APPROVING REVISED EXHIBIT F DRAWINGS

(Issued August 22, 2002)

On February 5 and subsequently on August 14, 2002, Gauley River Power Partners, L.P., on behalf of the City of Summersville, licensee for the Summersville Hydroelectric Project, FERC No. 10813, filed revised Exhibit F drawings for Commission approval. This filing is in compliance with Article of 315 of the license.¹ The project is located on the Gauley River in Fayette and Nicholas counties, West Virginia.

The revised exhibit F-1 drawing shows the arrangement of project site, and drawings F-2 and F-3 depict powerhouse sections. Our review found that the revised drawings adequately show the authorized project features, which conform to the Commission's rules and regulations. This order approves the revised exhibit F drawings. Ordering paragraph (C) requires the filing of aperture cards of the approved drawings.

The Director orders:

(A) The following drawings are approved and made part of the license:

Exhibit No.	FERC No.	Drawing Title	Superseding
F-1	10813-26	Site Arrangement	10813-8
F-2	10813-27	Embedded Piping - Section 6	10813-9
F-3	10813-28	Plant Arrangement - Powerhouse Section	10813-10

(B) The superseded exhibit drawings are eliminated from the license.

(C) Within 90 days of the date of issuance of this order, the licensee shall file three original sets of aperture cards of the approved drawings. The aperture cards should

¹60 FERC ¶61,291, Order Issuing License, September 25, 1992.

Project No. 10813-060

-2-

be reproduced on silver or gelatin 35 mm microfilm. All microfilm should be mounted on Type D (3 1/4" x 7 3/8") aperture cards.

Prior to microfilming, the FERC Drawing Number (10813-26, -27 and -28) shall be shown in the margin below the title block of the approved drawing. After mounting, the FERC Drawing Number should be typed on the upper right corner of each aperture card. Additionally, the Project Number, FERC Exhibit (F-1, F-2, and F-3), Drawing Title, and date of this order should be typed on the upper left corner of each aperture card. See Figure 1.

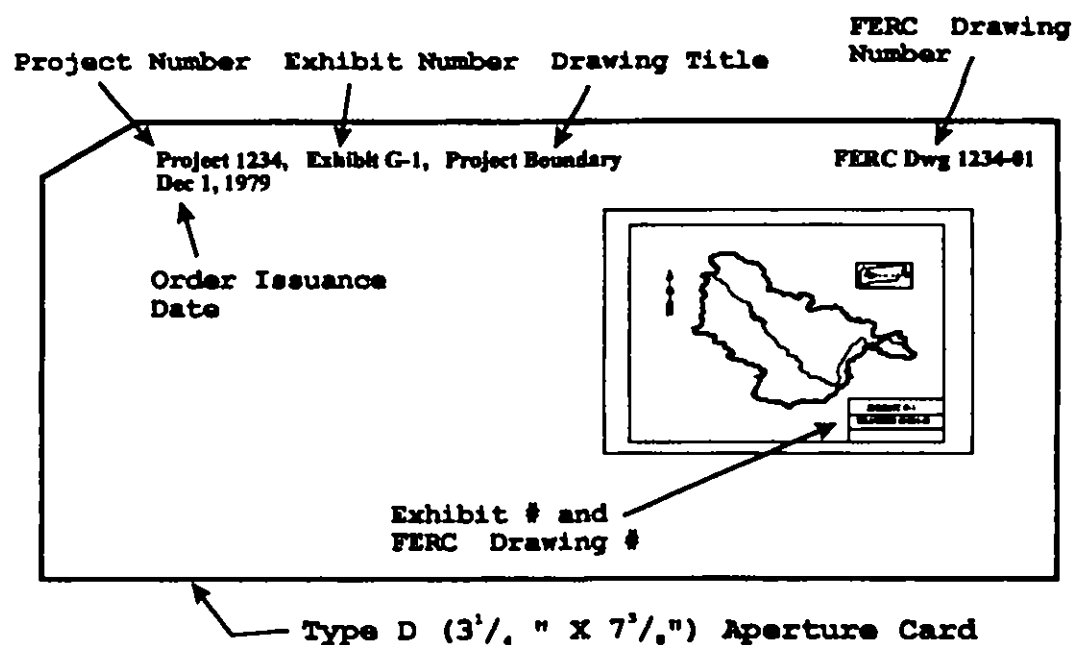


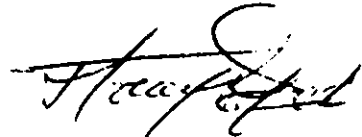
Figure 1. Sample Aperture Card Format

Two original sets of aperture cards should be filed with the Secretary of the Commission. The remaining set should be filed with the Commission's New York Regional Office.

Project No. 10813-060

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(D) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 C.F.R. § 385.713.

A handwritten signature in black ink, appearing to read 'Mohamad Fayyad', is positioned above the printed name and title.

Mohamad Fayyad
Engineering Team Lead
Engineering and Jurisdiction Branch
Division of Hydropower Administration
and Compliance

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION
101 FERC ¶ 62,071

City of Summersville

Project No. 10813-057

ORDER APPROVING REVISED EXHIBITS

(Issued October 31, 2002)

On January 17, 2002, Gauley River Power Partners, L.P., on behalf of the City of Summersville, licensee for the Summersville Hydroelectric Project, FERC No. 10813, filed a revised exhibit A for the Commission's approval. The exhibit was filed pursuant to Article 315 of the license.¹ The project is located at the existing U.S. Army Corps of Engineers' Summersville Dam on the Gauley River in Fayette and Nicholas Counties, West Virginia.

BACKGROUND

The proposed project as authorized in the license consists of: one 17-foot diameter penstock, connected to the existing # 3 butterfly valve at the outlet conduit of the Corps facility; two penstock bifurcations to the powerhouse; two Francis hydraulic turbines for a total installed capacity of 80 MW; a new valve house with the relocated # 3 Howell-Bunger valves; a tailrace; a 10-mile-long, 69- kV transmission line connecting the project to the Appalachian Power Company Substation; and appurtenant facilities.

Article 315 in the license requires the licensee, within 90 days after completion of construction of the project, to file for Commission approval revised exhibits A, F and G describing the project facilities as built. The exhibits F and G were previously filed and approved by the Commission.²

¹See, 60 FERC ¶ 61,291, Order Issuing License. (September 25, 1992)

² See, 100 FERC ¶ 62,137, Order Approving Revised Exhibit F Drawings, and 92 FERC ¶ 62, 276, Order Approving Revised Exhibits.

Project No. 10813-057

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REVIEW

The revised exhibit A accurately describes the project features as authorized in the license. The revised exhibit A complies with the requirements of Article 315 of the license, and conforms to the Commission's rules and regulations. This order approves the revised exhibit A, and revises the project description in the license to reflect its as-built condition.

The Director orders:

(A) The following revised exhibit A, consisting of 4 pages, describing the as-built mechanical, electrical and transmission equipment, filed on January 17, 2002, conforms to the Commission's rules and regulations and is approved and made a part of the license. The superseded exhibit A is eliminated from the license.

(B) The project description found in ordering paragraph (B)(2) of the license for the Summersville Project is revised to read as follows:

The project consists of: (a) one 17-foot diameter penstock, connected to the existing # 3 butterfly valve at the outlet conduit of the Corps facility; (b) two penstock bifurcations to the powerhouse; (c) two Francis hydraulic turbines for a total installed capacity of 80 MW; (d) a new valve house containing the relocated # 3 Howell-Bunger valves; (e) a tailrace; (f) a 10-mile-long, 69 kV transmission line connecting the project to the Appalachian Power Company Substation; and (g) appurtenant facilities.

Project No. 10813-057

- 3-

(C) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 C.F.R. § 385.713

Mohamad Fayyad
Engineering Team Lead
Engineering and Jurisdiction Branch
Division of Hydropower Administration

and Compliance

UNITED STATES OF AMERICA 116 FERC ¶ 62, 173
FEDERAL ENERGY REGULATORY COMMISSION

City of Summersville, West Virginia

Project No. 10813-074

ORDER APPROVING PHASE 2 DISSOLVED OXYGEN MONITORING REPORT
AND APPROVING AND MODIFYING FINAL OPERATING PLAN
PURSUANT TO ARTICLE 404

(Issued August 30, 2006)

On March 1, 2005, the City of Summersville, West Virginia (licensee) filed its Phase 2 Dissolved Oxygen Monitoring Report pursuant to license article 404 for the Summersville Project¹ and the Commission's September 25, 1996 Order Modifying and Approving Dissolved Oxygen Monitoring Plan.² On January 30, 2006, the licensee filed its final operating plan, a component of the Phase 2 report. The project is located on the Gauley River, in Nicholas County, West Virginia.

BACKGROUND

Article 404 of the license requires the licensee to maintain a minimum dissolved oxygen (DO) concentration of at least 7.0 milligrams per liter (mg/l) in the Gauley River immediately downstream of the project tailrace during project operation.

Article 404 also requires the licensee to prepare a plan to install, operate, and maintain permanent, continuously recording water temperature and DO monitoring devices to monitor DO concentrations and water temperature in the project tailrace. The licensee is to prepare the monitoring plan after consultation with the U.S. Corps of Engineers (Corps), the U.S. Fish and Wildlife Service (FWS), and the West Virginia Division of Natural Resources (WVDNR).

A plan filed pursuant to article 404 was modified and approved in the Commission's September 25, 1996 order. The order approved, in part, a study of baseline water quality conditions (Phase 1), a description of evaluation methods, and copies of resource agency comments. The Phase 1 report was filed in June 1999.

¹ 60 FERC ¶ 61,291 (1992).

² 76 FERC ¶ 62,228 (1996).

The order also required, under paragraph (D), the filing of, for Commission approval, a monitoring report for the first two years of project operation (Phase 2). The report is to include, but not be limited to, the water quality data collected, descriptions of low DO events, descriptions of aeration techniques and operational modes and the effects of DO enhancement measures, and copies of any correspondence from the Corps, FWS, and WVDNR. The Phase 2 report is to include, also for Commission approval, a description of the aeration technique(s) or operational procedures for use in a final operating plan.

On September 11, 2003, and February 1, 2005, the licensee received extensions of time for filing the Phase 2 dissolved oxygen monitoring report, due to equipment failures, and also to allow time for data completion and agency consultation.

The licensee's Phase 2 report was filed on March 1, 2005, but did not include the required information regarding a final operating plan, and also did not include any resource agency comments. The licensee therefore was granted a final extension of time, for the purpose of coordinating with the agencies and writing the final operating plan, and filing it for Commission approval by January 31, 2006.

LICENSEE'S PHASE 2 REPORT

Dissolved Oxygen Monitoring

Data were recorded hourly, and included upstream, tailrace, and downstream water levels, flows in cubic feet per second (cfs) from the two generating units and from the Howell-Bunger (HB) valves in the dam, percent gate openings, and DO readings collected from two water quality monitoring stations. The first monitoring station used is located in a collection system cross-connected between the penstocks of the project's two turbines. The second is located at an existing U.S. Geological Survey gaging station on the Gauley River, approximately 1,750 feet downstream of the project valve house and power plant. Monitoring data was recorded through the project's SCADA system.

Phase 2 Monitoring Results and Conclusions

The licensee's March 1, 2005 Phase 2 dissolved oxygen monitoring report included DO monitoring data and operational data recorded during the period of June 2002 to October 2004, in tabular format. The licensee reported that several techniques were used to enhance DO in the Gauley River, and the data provided indicate that DO seldom falls below 7.0 mg/l during project operation. Both natural aspiration of turbine flow and air injection was tested. It was found that natural aspiration provided good results at high flow rates. The installation of the air injection equipment greatly increased

Project No. 10813-074

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DO uptake at higher flow rates. Augmentation of turbine flows using releases from the HB valves did not enhance DO concentrations to levels expected.

The licensee concluded that discharge aeration would likely be needed in certain instances to meet water quality standards downstream of the project during periods of extremely low flows combined with higher temperatures. During periods of low flows and low DO concentrations in the reservoir, flow releases less than the project's turbine capacity would be made through the HB valves at the dam. This would ensure that water quality could be maintained during low-flow conditions and when the project was not operating. During times of low upstream DO and project operation, the primary means of DO enhancement should be through either natural aspiration, air injection, or both. The licensee concluded that partial discharge through the HB valves, and/or turbine shutdown should be considered as secondary means of ensuring adequate DO concentrations. When DO concentrations are 7.0 mg/l or greater, study results showed that project operation could continue without enhancement. The licensee proposed that, by implementing these measures, adequate DO concentrations could be maintained in the Gauley River.

LICENSEE'S FINAL OPERATING PLAN

In its January 30, 2006 final operating plan, the licensee proposes to continue to use the water quality monitoring stations described in its Phase 2 report. Therefore, the downstream location would continue to be located at the USGS gaging station downstream of the project. The licensee notes that previous measurements have confirmed that there is little variation between DO measurements taken there and measurements taken directly from the tailrace. Monitoring equipment would be calibrated according to the manufacturers' guidelines, and would be calibrated and inspected every 30 days. Calibration and maintenance information would be available to the WVDNR, West Virginia Department of Environmental Protection (WVDEP), and FWS upon request.

During the period of June 1 through October 31, DO monitoring data would be transmitted to the project powerhouse, where it would be visually displayed and monitored. If DO concentrations were to fall below 7.0 mg/l for more than one hour while the project was on line, the licensee would operate the project using one or more re-aeration measures for the next 8 hours. If DO concentrations could be brought into compliance within the 8-hour period, the project would continue to be operated with the enhancement measure while DO concentrations were monitored. If, at the end of the 8-hour-period, DO concentrations do not meet 7.0 mg/l, generation would be shut down and all flow would be diverted through the HB valves. For public safety, there would be a lag time of 15 minutes between when shutdown occurs and the opening of the HB

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valves. If the licensee was not able to restore DO concentrations within the 8-hour period, it would notify the WVDNR via telephone within 48 hours of the incident, and then notify the WVDEP, FWS, the Commission, and the WVDNR via letter within 30 working days.

The project's SCADA system would store real-time DO concentration data from the two monitoring locations for 30 days. Hourly data would be permanently archived. Printed copies of DO data would be available at the powerhouse and upon request.

The licensee indicates that, each fall, it would compile the year's monitoring data and file copies with the WVDNR, WVDEP, FWS, the Corps, and the Commission. The licensee would include a summary of any incidents in which DO concentrations could not be maintained at 7.0 mg/l. The summary would include descriptions of methods used in attempting to restore DO concentrations, including project shutdowns and passage of flows through the HB valves. In addition, the licensee proposes to file with the WVDNR, FWS, and the Commission, by December 15 of each year, an annual report on water quality monitoring. The report would include DO data collected, and identification, frequency, duration, and reasons for times DO could not be maintained at 7.0 mg/l.

AGENCY CONSULTATION

The licensee indicated in its Phase 2 report that the report was being filed concurrently with the WVDNR, FWS, and the Corps for comment. Comments were only received from the WVDNR, dated April 4, 2005. The WVDNR indicated that there were missing and unexplained negative measurements in the report, and that it did not include adequate discussion of the effects of the licensee's DO enhancement measures. The WVDNR also found that the report inadequately described a course of action, rather than including a proposed operating plan, and did not discuss continuance of monitoring stations or equipment maintenance.

In a later filing made November 3, 2005, the licensee stated that no further comments on the Phase 2 report had been received. The licensee noted, however, that it had received emails and verbal indications from the FWS and Corps that those agencies would defer comments on a final operating plan to the WVDNR and WVDEP.

Both the WVDNR and the WVDEP provided comment letters dated January 25, 2006. The WVDNR stated that the purpose of the Phase 1 and Phase 2 studies, and the final monitoring plan, are ultimately to ensure that operation of the Summersville Project will not result in low DO in the Gauley River. The WVDNR indicated that the plan adequately addresses that concern. The WVDEP provided the same comment. However,

Project No. 10813-074

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the WVDEP indicated that the December 15 annual report proposed by the licensee should also be filed with the WVDEP-Division of Water and Waste Management.

DISCUSSION AND CONCLUSION

The licensee's Phase 2 Dissolved Oxygen Monitoring Report, filed March 1, 2005, did not include an in-depth analysis of DO monitoring data or DO enhancement measures. It did, however, identify successful enhancement measures to be used during project operations, which were carried through into the licensee's final operating plan.

The licensee's final operating plan, filed January 30, 2006, describes the monitoring methods and enhancement measures that would be used to successfully maintain required DO levels downstream of the project in the Gauley River. The monitoring data included in the Phase 2 report indicates that the measures could maintain downstream DO concentrations required by license article 401.

In its operating plan, the licensee describes two annual water quality monitoring reports in its final operating plan. The second report would be filed with the WVDNR, FWS, and the Commission, by December 15 of each year. This report should also be filed with the WVDEP-Division of Water and Waste Management, as requested by that agency. When this report is filed with the Commission, it should include copies of any correspondence received from the WVDNR, WVDEP, FWS, or the Corps regarding DO monitoring or maintenance for the subject year.

As indicated in the Commission's September 25, 1996 order, if the DO concentrations fall below those required by the project water quality certificate or license article 404, the licensee shall file a report with the Commission within 30 days of the date of the incident, to include the information specified in that order. Based on the report and the Commission's evaluation of the incident, the Commission reserves the right to require modifications to project facilities and operations to ensure future compliance.

Implementation of the licensee's final operating plan, as modified above, should ensure maintenance of required DO concentrations downstream of the Summersville Project, and provide the licensee, the agencies, and the Commission with data to monitor the effectiveness of the licensee's DO enhancement measures. Therefore, the licensee's Phase 2 Dissolved Oxygen Monitoring Report and final operating plan should be approved.

Project No. 10813-074

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The Director orders:

(A) The City of Summersville, West Virginia's (licensee) Phase 2 Dissolved Oxygen Monitoring Report and its final operating plan, filed March 1, 2005, and January 30, 2006, for the Summersville Project, pursuant to license article 404 and the Commission's September 25, 1996 order, are approved, as modified by paragraphs (B) and (C), below.

(B) The water quality monitoring report, which the licensee indicates in its final operating plan will be filed with the West Virginia Division of Natural Resources (WVDNR), U.S. Fish and Wildlife Service (FWS), and the Commission by December 15 of each year, shall be filed at the same time with the West Virginia Department of Environmental Protection (WVDEP)-Division of Water and Waste Management.

(C) The copy of the water quality monitoring report that is filed with the Commission by December 15 of each year shall include copies of any correspondence received from the WVDNR, WVDEP, FWS, or the Corps of Engineers regarding DO monitoring or maintenance for the subject year.

(D) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 C.F.R. § 385.713.

George H. Taylor
Chief, Biological Resources Branch
Division of Hydropower Administration
and Compliance

Appendix 1.4 – Operating Plan (October 2001)

GAULEY RIVER POWER PARTNERS, L.P.

General Partner:
Gauley River Management Corp.

10,813
W.VA.

P-10813

Transmittal Letter

FERC License No. 10813-WV

FERC License: **Article 308 – Operating Plan**
 Article 308 – Operating Agreement

Date Submitted: October 1, 2001

Date Approved: _____

FILED
OFFICE OF THE SECRETARY
01 OCT 15 PM 4:50
FEDERAL ENERGY
REGULATORY COMMISSION

Mr. Ken Halstead
U.S. Army Corps of Engineers
Huntington District
502 8th Street
Huntington, WV 25701-2070

FERC - NYRO
RECEIVED

OCT 9 - 2001

NEW YORK, NY

Comments:

We are submitting for your approval, seven (7) copies of the revised Final Draft (10/01/01, Rev 4) of the Operating Plan, and seven (7) copies of the revised Final Draft (10/01/01, Rev 8) of the Operating Agreement. The documents are being submitted for the Summersville Hydroelectric Project as required by the FERC License Article 308.

The attached documents supercede the versions of the documents that were most recently submitted on 26 April 2001. The Operating Plan and Operating Agreement were recently revised to incorporate the proposed automation of HBV Nos. 1 & 2, which was determined to be necessary to mitigate the impacts on the water level of the plunge pool as observed during the testing of HBV No. 3. The actual modifications to the control logic, computer programming, and controls for HBV Nos. 1 & 2 have not yet been performed. In general terms, the modifications that are proposed for HBV Nos. 1 & 2 are similar to those that were made to HBV No. 3 to coordinate the operation of HBV No. 3 with the operation of the turbines. The proposed modifications have been discussed and agreed to by the GRPP's Plant Manager and the COE's Resource Manager at the Summersville Dam, and the Operating Plan and the Operating Agreement reflect the agreed upon modifications. The GRPP is currently moving forward with the implementation of the proposed modifications, and the modifications should be completed within the next two to three months.

While the attached Operating Plan is provide in its entirety, inclusive of the drawings contained in the Appendices, the drawings are not current in that they do not show the proposed changes to the control logic, or modifications to the controls of HBV Nos. 1 & 2. The Appendices are to contain copies of as-built construction documents, and we anticipate that those documents will not be ready until the first quarter of 2002, after the modifications to HBV Nos. 1 & 2 have been completed. As soon as the as-built documents are available, copies will be provided to the COE for inclusion into the Operating Plan and the Operating Agreement.

Mr. Ken Halstead

October 1, 2001

2.

As agreed to on 7 December 2000, the GRPP is in the process of preparing a plan to monitor the movement of the penstock branches to the powerhouse and turbines. Information on the proposed concept for the monitoring plan will be submitted to the COE in early November 2001 for review and discussion purposes. Upon agreement of the means and methods for monitoring the penstock movement, a formal plan will be prepared and submitted to the COE for final review and approval. The approved monitoring plan will be included as Appendix E to the Operating Plan. We understand that monitoring plan can be developed separately from the Operating Plan and without holding up the approval of the Operating Plan or the signing of the Operating Agreement.

If you have any questions on the Operating Plan or the Operating Agreement, do not hesitate to call either: Paul Cyr, Kleinschmidt Associates, (803) 822-3177 or, Tony Whitehair, Catamount Energy Corporation, (802) 772-6770. Please provide a copy of your comments/approval to: Tony Whitehair, Catamount Energy Corporation, 71 Allen Street, Suite 101, Rutland, VT. 05701-4570; and Paul Cyr, Kleinschmidt Associates - 101 Trade Zone Drive Suite 21-A, West Columbia, SC 29170.



Paul E. Cyr, P.E.
Project Manager
Kleinschmidt Associates

For:

Gauley River Power Partners, L.P. on behalf of the Licensee

cc: Tom Duxbury - GRPP
Charles Whitehair - GRPP
Wayne Van Den Burg - GRPP
Jim Price - Noah
Anton Sidoti, - FERC NYRO (3 copies)

— REVISED FINAL DRAFT —
October 1, 2001

FERC-NY20
PROJECT

OCT 9 - 2001

OPERATING AGREEMENT

NEW YORK, NY

THIS OPERATING AGREEMENT ("Operating Agreement") is made as of the _____ day of _____, 2001, by and between the City of Summersville, West Virginia ("Licensee") and the United States Army Corps of Engineers, Huntington District ("Huntington District").

RECITALS

A. On September 25, 1992, the Federal Energy Regulatory Commission ("FERC") issued Licensee a license ("License") to construct, operate, and maintain the Summersville Hydroelectric Project, FERC No. 10813 ("Hydropower Project") at the Summersville Dam ("Dam"), a federal facility located on the Gauley River, which is operated and maintained by the Huntington District.

B. On August 31, 1993, Licensee and the Huntington District entered into a memorandum of agreement ("MOA") for access privileges to the Dam and associated federal facilities, as required by Article 306 of the License.

C. Article 308 of the License requires the Licensee to enter into an operating agreement with the Huntington District in order to protect "Federal Interests" and to provide reasonable rules and regulations pertaining to operations of the Hydropower Project.

D. The parties desire to enter into this Operating Agreement to satisfy the requirements of Article 308 of the License.

NOW THEREFORE, incorporating by this reference the foregoing recitals and in consideration of the mutual covenants contained herein, Licensee and the Huntington District hereby agree to the following:

ARTICLE 1

DULY AUTHORIZED AGENT

Licensee shall have the right to operate and maintain the Hydropower Project through a duly authorized agent. Licensee shall provide notice to the Huntington District specifying the name of its agent, who shall be authorized to act on Licensee's behalf in carrying out Licensee's

responsibilities and obligations under this Operating Agreement and in supervising the operation and maintenance of the Hydropower Project (each party so designated shall be referred to as "Agent" and hereafter, references to the term "Licensee" shall be deemed to include both Licensee and Agent).

ARTICLE 2

COOPERATION

The parties shall cooperate in the coordinated operation of the Dam and the Hydropower Project (a) to protect Federal Interests, including fluctuations of the Summersville Lake and fluctuations of flows released from the Dam for all authorized project purposes, including maintaining water quality, fish and wildlife conservation, recreation, and flood control, and (b) to allow for the generation of electric energy at the Hydropower Project.

ARTICLE 3

PHYSICAL LOCATION AND DESCRIPTION

The Hydropower Project is located on the south side of the Gauley River, downstream and adjacent to the Dam's outlet structure. The Hydropower Project contains two vertical Francis turbines and generators and is rated at 80 MW at 4,000 cfs and 235 feet of net head. The Hydropower Project is more particularly described in the operating plan attached hereto as Exhibit A and by this reference made a part hereof ("Operating Plan").

ARTICLE 4

OPERATIONAL REQUIREMENTS

Section A. IN GENERAL

1. Licensee shall operate the Hydropower Project in accordance with this Operating Agreement, the Operating Plan and the License, as each may be amended from time to time. In the event of an emergency or other unusual situation which threatens the safety of the Dam, the public, or other Federal Interests, Licensee shall operate the Hydropower Project according to the direction of the Huntington District to address such situation.

2. Licensee acknowledges that the primary purposes of the Dam are flood control, lake and downstream recreation, fish and wildlife conservation, water quality control

and whitewater recreation, as described in the Huntington District's water control plan ("Water Control Plan"). The Huntington District reserves the rights to revise, modify, or amend the Water Control Plan from time to time in the future in accordance with authorized project purposes. The Licensee will be given advance notice of, and an opportunity to comment on, proposed changes to Water Control Plan. The Licensee will be required to conform to any future modifications of the Water Control Plan.

Section B. SPECIFIC OPERATIONAL DETAILS

1. Licensee shall operate the Hydropower Project as a run-of-river project, utilizing the flows that are determined to be released from the Dam in accordance with the Water Control Plan.

2. Licensee shall notify the Huntington District's resource manager for the Dam ("Resource Manager"), or his designee, as set forth in the Operating Plan (a) prior to the planned starting or stopping of a generating unit within the Hydropower Project, (b) as soon as possible whenever a generating unit is subject to an emergency shutdown, (c) of any change in generator operation that affects the discharge of water through the Hydropower Project and the flows required to be released from the Dam, (d) if Licensee cannot maintain the flows to be released from the Dam, through the Hydropower Project, as required by the Water Control Plan.

3. Subject to the terms, conditions and limitations set forth in the Water Control Plan, the Huntington District will permit the flows to be released first through the Hydropower Project as set forth in the Operating Plan. If the flows that are determined to be released from the Dam cannot be maintained by the Hydropower Project, the Huntington District will attempt to release any or all flows that are necessary through discharge devices under the control of the Huntington District. The Huntington District shall also make a reasonable effort to provide (a) advance notice of any scheduled changes in required releases from the Dam, and (b) prompt after-the-fact notice of any unscheduled changes in required releases from the Dam.

4. The parties acknowledge that operation of the Dam and Hydropower Project may be affected by unusual, severe or emergency conditions on the Gauley River and agree to work together to minimize adverse impacts to their respective operations from such conditions.

5. The Huntington District shall include Licensee in the notification plans for the Dam's "Emergency Action Plan." Following notification by the Huntington District that the

Emergency Action Plan has been activated, Licensee shall operate the Hydropower Project as directed by the Huntington District for as long as is necessary for the Huntington District to address the emergency.

ARTICLE 5

INSPECTION

Licensee shall permit the Huntington District to inspect the Hydropower Project as a part of the Huntington District's "Periodic Inspection and Continuing Evaluation of Completed Civil Works Structure Program."

ARTICLE 6

COMMUNICATION NETWORK AND INFORMATION EXCHANGE

The Huntington District and Licensee shall communicate as often as necessary (a) to coordinate the operation of the Hydropower Project and the Dam, and (b) to keep each other advised of any adverse river and weather conditions which may affect the elevation, flows and fluctuations in elevation of the river or of a pending or threatened emergency affecting human life or property, according to the procedures set forth in the Operating Plan.

ARTICLE 7

MAINTENANCE AND CONSTRUCTION ACTIVITY

1. The Huntington District, as opposed to the Licensee, retains the authority to perform routine maintenance, repair and new construction activities on the Dam and associated equipment and structures. Licensee shall provide the Huntington District with access to the Hydropower Project as necessary for the performance of all authorized activities.

2. Licensee shall be responsible for the operation and maintenance of (a) all mechanical, civil, and site work constructed as part of the Hydropower Project, as more particularly described in the Operating Plan, and (b) modifications made to the Dam as part of the construction of the Hydropower Project, including the penstock, penstock drain and vent valves, penstock support piers, concrete structure for Howell-Bunger Valve No. 3 ("HBV No. 3"), all electrical and control interfacing of HBVs Nos. 1, 2, and No. 3 to the Hydropower Project's control system, and all controls and switches installed as part of the Hydropower

Project to allow backup power from the Huntington District's standby generator to be provided to HBVs Nos. 1, 2, and No. 3.

3. The Huntington District shall be responsible for the operation and maintenance of (a) Butterfly Valve No. 3 (which serves as the guard valve for the hydropower project) and HBVs 1, 2, and 3No. , including associated mechanical operators, machinery, electrical devices, ladders and work platforms, (b) all other physical elements and components of the Dam, outlet structure and associated valves, machinery, power supplies, and controls, and access road to the outlet structure, and (c) all water level monitoring devices used to monitor the water levels of the Summersville Lake and the gage station downstream of the Dam.

4. Licensee acknowledges that relocation of HBV No. 3 during construction of the powerhouse for the Hydropower Project may affect the costs of crane service if maintenance involves removal or installation of HBV No. 3 in one piece, and agrees to reimburse the Huntington District for any net increases in such crane costs which are attributable to the relocation of HBV No. 3 in accordance with the Operating Plan.

ARTICLE 8

OTHER RESPONSIBILITIES OF THE PARTIES

1. Licensee shall be solely responsible for and shall hold the Huntington District harmless from and against any and all damages, losses, liabilities, obligations, penalties, claims, demands, costs and expenses (including, without limitation, reasonable attorneys' fees) which may at any time be imposed upon, incurred by or asserted or awarded against the Huntington District.

ARTICLE 9

GENERAL CONDITIONS

1. This Operating Agreement may not be amended except by a writing signed by both parties, nor shall observance of any term of this Operating Agreement be waived except with the written consent of the party against whom enforcement is sought.

2. This Operating Agreement may be executed in any number of counterparts, each of which shall be deemed an original, and all of which taken together shall constitute one and the same Operating Agreement.

3. All provisions contained in this Operating Agreement are severable and the invalidity or unenforceability of any provision shall not affect or impair the validity or enforceability of the remaining provisions of this Operating Agreement.

4. The descriptive headings of the paragraphs of this Operating Agreement are inserted for convenience only and do not constitute part of this Agreement.

5. Any notice required or permitted to be given under this Operating Agreement shall be sufficient if in writing and given by hand-delivery or by first class mail, UPS, FedEx, or similar service, addressed as follows:

In the case of Licensee, to:

In the case of the Huntington District, to:

or to such other address as a party may hereafter designate by notice to the other.

8. The Operating Plan is a technical document representing the current requirements for the operation and maintenance of the Hydropower Project as it relates to the Dam. The Operating Plan may be modified from time-to-time in the future upon the mutual agreement of the parties, without need for further amendment on this Operating Agreement.

ARTICLE 10

SAVING CLAUSE

Nothing in this Operating Agreement shall be deemed as a waiver of any requirement or obligation imposed upon the Licensee by the terms and conditions of the License or any amendments to the License issued by the Federal Energy Regulatory Commission.

WITNESS the following signatures and seals as of the date set forth on page 1 above.

CITY OF SUMMERSVILLE, WEST VIRGINIA

HUNTINGTON DISTRICT

By _____

By _____

Mayor

Colonel, Corps of Engineers
District Engineer

Clerk

revised FINAL DRAFT 10/01/01

FILED
OFFICE OF THE SECRETARY

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**FEDERAL ENERGY
REGULATORY COMMISSION**

GAULEY RIVER POWER PARTNERS

SUMMERSVILLE HYDROELECTRIC PROJECT

FERC No. 10813-WV

**FERC - NYRO
RECEIVED**

OCT 9 - 2001

NEW YORK, NY

OPERATING PLAN

OCTOBER 2001

revised FINAL DRAFT 10/01/01

GAULEY RIVER POWER PARTNERS
SUMMERSVILLE HYDROELECTRIC PROJECT
FERC No. 10813-WV

OPERATING PLAN

OCTOBER 2001

Prepared by:

KLEINSCHMIDT ASSOCIATES
West Columbia, South Carolina

revised FINAL DRAFT 10/01/01

**OPERATING PLAN
SUMMERSVILLE HYDROELECTRIC PROJECT
FERC No. 10813-WV**

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OPERATING PLAN
SUMMERSVILLE HYDROELECTRIC PROJECT
FERC No. 10813-WV

INTRODUCTION

As required by the Project's License, Article 308, the Project Licensee, the City of Summersville, West Virginia has entered into a Memorandum of Agreement with the United States of America, acting by and through the Department of the Army, Corps of Engineers for the operation of the Summersville Hydroelectric Project. This Operating Plan was prepared as an Exhibit to the MOA which was entered into on _____ 2001.

Periodically and without impact on the MOA, revisions can be made to the Operating Plan, subject to the approval by both the Licensee and the Corps of Engineers, to reflect the actual operation of the Hydroelectric Project. Subsequent revisions to this Operating Plan were made and approved by the following individuals on the dates as noted:

Revision	Date	For the	For the
		Corps of Engineers	Gauley River Power Partners
1			
2			
3			

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1.0 DESCRIPTION OF HYDROELECTRIC PROJECT

The Summersville Hydroelectric Project (Project) is located at the Army Corps of Engineers' (COE) Summersville Dam. The Project License No. 10813-WV from the Federal Energy Regulatory Commission (FERC) is held by the City of Summersville West Virginia, and the Project is operated and maintained by the Gauley River Power Partners L.P. (GRPP). The Project will be a run-of-river station, generating power only with flows that are required to be released by the COE's operation of the Summersville Dam. The COE's congressionally authorized project purposes for the Summersville Dam include flood control, pollution abatement, fish and wildlife enhancement, and recreation. The COE's operational control of the Summersville Dam and the flows released from the dam will not be altered or adversely impacted by the implementation and operation of the Project as mandated by the Project's License. Flow will be discharged through the Project as directed by the COE per License Articles 309 and 402 .

Project structures located adjacent to the COE's facilities include a powerhouse with two hydroelectric turbine-generators, a substation, and a transmission line. The powerhouse and substation are located on the right riverbank, off of and downstream of the dam. The transmission line extends across the downstream side of the dam. The Project's powerhouse connects to the COE's discharge tunnel at Conduit No. 3 via a penstock. The arrangement of the Project site is shown on the attached contained in Appendix A, Figure A-1, and the arrangement of the Project structures is shown in Appendix A, Figures A-2 through A-6. A set of record drawings of the Project, as prepared by Black & Veatch, will be provided to the COE for informational and record purposes.

The Project's generating equipment consists of two vertical Francis turbines each rated at 55,350 Hp at 2,272 cubic feet per second (cfs) and 235.1 ft net head. Each turbine is direct coupled to a 44.4 MVA, 257.1 RPM generator. Each of the turbines has the capacity to discharge flows of approximately 700 to 2,300 cfs if operated individually and depending on the lake elevation. Jointly, the turbines have a combined discharge capacity of up to 4,000 cfs. The two turbines will regulate their discharges via adjustable wicket gates.

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The single guard valve for the Project is the COE's existing butterfly valve (BFV) in Conduit No. 3. The construction of the Project by connecting to Conduit No. 3 required the relocation of the existing Howell-Bunger Valve No. 3 (HBV No. 3), to the north side of the powerhouse and downstream of the existing outlet structure.

The turbines will be operated utilizing flows to be released from the dam by the COE as required per the COE's Water Control Plan. Generally described, the Project will control the release of flows between 700 cfs and 4,000 cfs by discharging the required flows through the powerhouse turbines and without having to initiate operation of any of the HBVs. Flows of between 700 cfs and 4,000 cfs will be released first through the Project turbines. Flows below 700 cfs and above 4,000 cfs will be controlled by the COE and released through HBVs Nos. 1, 2, 3 or 4 as directed by the COE. The operating mechanisms for the turbines are controlled automatically, with operations monitored remotely.

The controls for HBVs Nos. 1 and 2, and the relocated HBV No. 3 are electronically interfaced to the turbine controls to ensure that flows in the river are automatically maintained in the event of an unscheduled turbine shut down. .

The COE will continue to operate HBVs Nos. 1, 2 and 4 for flood control releases and/or other project purposes. The flood control operations of the relocated HBV No. 3 will be performed by either the COE or by the GRPP under the direction of the COE. HBV No. 3 will be the last valve to be opened and the first valve closed in order to coordinate with turbine operations.

The GRPP is responsible for maintenance of Project equipment and structures, including the penstock and support piers, the concrete structure housing HBV No. 3, and modifications to the controls for HBVs Nos. 1, 2, and 3. In general, the GRPP will maintain all items that were constructed or installed as part of the Project. The COE is responsible for maintaining all of the HBVs and guard valves, and all structures and equipment associated with the Summersville Dam that were not constructed or installed as part of the Project. The hydroelectric plant does not have individual guard valves for either the turbines or HBV No. 3. The turbines and HBV No. 3 will use the existing BFV No. 3 as the sole guard valve. For extended service outages, the

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turbines and HBV No. 3 may be dewatered for servicing via the installation of individual maintenance bulkheads immediately upstream of the unit to be removed from service.

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2.0 OPERATIONS

2.1. Project Operation

The Project is designed as an unmanned run-of-river hydroelectric power station, capable of utilizing flow releases of between 700 and 4,000 cfs. Generally described, for flows between 700 cfs (minimum hydraulic capacity for a single turbine) and 4,000 cfs (combined hydraulic capacity of both turbines) the flows will be released first through the Project turbines. Flows of less than 700 cfs and in excess 4,000 cfs (high flows) will be discharged as directed by the COE through the available HBV(s). A description of the turbine and HBV control logic is contained in Appendix B, Figure B-6.

The Project will be operated to utilize only the flows to be released at the dam by the COE to comply with their reservoir and flow management policies as required by their Water Control Plan. The COE is responsible for monitoring the lake level and establishing the flows to be released at the dam either through the Project or via the existing HBVs. The GRPP will not determine nor dictate the volume of flow to be released from the dam or the extent of time in which the flows will be released. Flows not discharged through the turbines will be discharged first through HBVs Nos. 1 or 2 then lastly through HBV No. 3.

The controls for HBVs Nos. 1, 2, and 3 were modified to allow the operation of the valves to be controlled via the turbine control computer (Project Digital Control System, Project DCS). The interfacing of the valves with the Project DCS was required to provide optimum control of the water levels in the plunge pool and minimal interruption of flow release from the dam in the event of an emergency shutdown of a turbine(s). For flows of less than 700 cfs or greater than 4,000 cfs, the flows will be released through any of the four HBVs, as determined and directed by the COE. The operation of HBVs 1, 2, and 3 may be controlled via the Project DCS or manually controlled by the COE using existing (unmodified) controls. The operation of HBV No. 4 remains manually controlled by the COE using controls that were not modified for the Project. The Project DCS will select one HBV (the "Selected HBV") from HBVs 1, 2,

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and 3, as authorized by the COE, to automatically control flow release during an emergency shutdown. The Selected HBV(s) are the only valves that can be automatically operated by or, controlled from the Project DCS (see Section 2.7 Howell-Bunger Valves).

2.1.1 Normal Operating Conditions

The turbines can be manually controlled or operated in either of two automated modes: (1) flow control, when the turbine discharge is maintained at a constant flow and the elevation of the lake is allowed to vary to maintain the specified flow discharge or (2) lake level control, where the level of the lake is maintained within specified tolerances and the flow through the turbines is automatically adjusted to maintain the level of the lake. Within the limits of the turbines discharge capacity, the turbines and turbine controls have the capability to maintain the lake level to plus or minus one-inch. The rate of change (ramping) in lake level, flow release, or downstream stage level will be as dictated by the COE to comply with their reservoir and flow management policies. Via the Project DCS, the discharge from the turbine(s) or, HBVs Nos. 1, 2, or 3 will be adjusted in increments and timing as directed by the COE (see Section 2.3.5 Ramping Rates).

In the event that the Project (any combination of turbines and the Selected HBV cannot maintain the required flow release or lake level, the Project DCS will alarm the condition to the on-call powerhouse operator who will notify the COE and jointly they will determine how the flow or lake level will be maintained, and which HBV(s) will be used to release the required flows. The COE will provide GRPP personnel with keys to access and manually operate HBVs No.1 and No.2 in the event that the operation of the HBVs cannot be controlled via the Project DCS and COE personnel are not available to manually operate the valves. GRPP personnel may not access or operate either HBV without the authorization of the COE's Resource Manager or his designee (see Section 2.7 – Howell-Bunger Valves). The GRPP has provided the COE with the means to activate an "emergency stop - panic button" that is capable of stopping all flow releases from

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the turbines and the HBV(s) set in automatic mode by the COE personnel (see Section 2.9 – Turbine Shutdown).

Individually the turbines have a minimum discharge capacity of approximately 700 cfs, and a maximum discharge capacity of approximately 2,300 cfs. The total combined discharge capacity of the turbines is approximately 4,000 cfs. Actual flows through the turbines are dependent of the level of the lake and the available head. For releases of less than 700 cfs, the COE may discharge and regulate the flows using any of the HBVs. For releases in excess of 4,000 cfs, the COE will discharge and regulate the flows using any of the HBV provided one HBV is closed and set in the automatic mode. In consultation with the Project's Plant Manager, the COE may direct the GRPP to discharge a portion of the flow (above 4,000 cfs) through the any HBV, with flows discharged lastly through HBV No. 3. A description of the turbine and HBV control logic is contained in Appendix B, Figure B-6.

Based on the flow duration curve developed from the USGS Gage Station No. 03189600 at the Gauley River downstream of the dam, the turbines will operate approximately 65 percent of the time (5,700 hours per year). The flow duration curve indicates that flows will be less than turbine's minimum capacity (700 cfs) 33 percent of the time (2,900 hours per year) and the powerhouse will not operate. Flows will exceed the combined turbine capacity (4,000 cfs) approximately 13.5% of the time (1,200 hours per year), requiring releases through the HBVs in addition to turbine releases.

The controls for HBV Nos.1, 2, and 3 were modified to provide an electronic interfacing with and control via the Project DCS (see Section 2.7 – Howell-Bunger Valves) or, any of the valves can be manually operated using pre-Project procedures. The interfacing of the valves with the Project DCS was required to provide optimum control of the water levels in the plunge pool and minimal interruption of river flows in the event of a shutdown of the turbine(s). Whenever the turbine(s) shutdown, the Project DCS will automatically open the

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Selected HBV to maintain river flows to the pre-shutdown flow (see Section 2.1.3 – Minimum Flow, and Section 2.9 – Turbine Shutdown).

2.1.2 High Flow Condition

Flow releases from the Summersville Dam of between 700 – 4,000 cfs, the hydraulic capacity of the turbines, will be released through the turbines available for operation. If the Project has limitations on turbine availability, the GRPP may release a portion or all of the flows through the Selected HBV.

For the purposes of the Project and this Operating Plan, flow releases in excess of 4,000 cfs are considered to be “high flows”. High flow releases will be controlled by the COE and released first through HBV Nos. 1, 2, and/or 4 or, in consultation with the Project’s Plant Manager the COE may direct the GRPP to discharge a portion of the flow (above 4,000 cfs) through HBV No. 3, which would be the Selected HBV. Under high flow releases, HBV No. 3 would normally be the last valve to discharge and the first valve to be shutoff due to the impact on power generation as a result of increased headlosses to the turbines. COE reserves the right to begin operation of HBV No. 3 after HBV No. 1 and No. 2 have reached 90% opening. The discharge capacity of HBVs 1, 2, or 3, while dependent on the lake level, is considered to be 6,000 cfs per valve.

River flow data from the Gauley River Gage Station indicates that flows will exceed the maximum turbine discharge capacity of 4,000 cfs approximately 13.5% of the time (1,200 hours per year). The data further indicates that river flows in excess of 10,000 cfs (both turbines and one HBV discharging) and 16,000 cfs (both turbines and two HBVs discharging) are exceeded 2.0% and 0.5% of the time (respectively 175 and 45 hours per year). For releases of greater than 16,000 cfs, and with the lake at or above elevation 1685, one or more of the turbines may have to be shutdown (to provide for transient surge protection) and the flow released through the Selected HBV. Generally, during high flow conditions, HBV No. 3 is the last valve from which flows are released, and it is

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the first valve to be closed when flows recede. On receding high flows, turbines that may have been shutdown will be restarted as soon as flow conditions are acceptable to the COE and the COE permits the turbine(s) restart.

Based on the results of transient surge analyses that were performed for the Project, the turbines will cease discharging before the lake level reaches the elevation of the dam's emergency bypass spillway. To maintain a transient surge pressure at BFV No. 3 that is below a static pressure equivalent to the lake at elevation 1710, both turbines can remain in operation until the lake reaches elevation 1685 at which point one turbine must be shut down, with the second turbine being shut down when the lake reaches elevation 1688.

Due to possible changes in the condition of the Summersville dam and appurtenances, the COE may from time to time redefine the safe operating conditions for both the dam and the hydroelectric project. The Project shall be operated as directed by the COE in compliance with safe operating conditions (also see Section 2.4.2 - Project and Operational Safety). The redefining of safe operating conditions may result in changes in the highest lake level in which the Project can be operated.

For a small local flood (freshet) upstream of the dam whose outflow could be managed if limited to a maximum turbine discharge of 4,000 cfs, the COE may choose to allow the Project to operate in the lake level control mode. When operated in the lake level control mode the Project DCS will adjust the turbine discharges, within their hydraulic capacity, to release the necessary flow to maintain the desired reservoir level. The COE would monitor the turbine release, the lake level, and river conditions downstream and release more flow through HBVs other than the Selected HBV if desired.

For high flow releases from the dam, the COE will coordinate the releases with the GRPP as outlined in Section 2.3.2 - Communications, High Flow Conditions. If the available turbines are discharging at full capacity and are being

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operated in the flow control mode, the COE can activate HBVs other than the Selected HBV to comply with their Water Control Plan.

If the HBVs are operated without coordinating with the powerhouse operator while the available turbines are being operated in the lake level control mode, the actual discharge from the turbines may be decreased (due to increased headlosses in the power tunnel and due to changes in the headpond level). When in the lake level control mode, the Project DCS will automatically adjust the turbines' discharge to maintain a given (target) lake level within a fixed operating band. If the HBVs are operated presumptively to lower the reservoir (to provide a "hole" for flood storage), the lower level of the reservoir may cause the Project DCS to respond by reducing the turbines' discharge up to and including the automatic shutting down of the turbines. An example of this situation would be initiated when COE personnel observe an increase of inflow into the lake at the Craigsville, WV stream gage. In this case, outflow is increased to attain a temporary lower lake elevation, whereby the increase in inflow can be controlled in a manner so as not to exceed the current lake elevation requirement .

Prior to the COE releasing flows through any HBV, the COE will communicate their discharge plans to the on-call powerhouse operator and instruct the operator to operate the turbines in either: 1) the flow control mode and to increase the turbines discharge to the maximum capacity within a specified period of time; or 2) in the lake level control mode, with the COE dictating the target elevation of the lake. When the COE reduces the dam release to protect against downstream flooding, they will first terminate releases through the HBV(s) then they will instruct the powerhouse operator as to the required turbine flow with ramping rates as determined by the COE.

Under high flow conditions of between 4,000 cfs and 16,000 cfs, the operation of the Selected HBV will be coordinated with and controlled via the Project DCS to provide for a discharge from the dam in the event of a turbine shutdown (see Section 2.4.1 – Recreational and Public Safety, Section 2.7 -

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Howell-Bunger Valves, and Section 2.9 - Turbine Shutdown). Under high flow conditions, HBV No. 3 would be the last valve operated and the first valve to be shutdown.

The automated operation of any turbine or HBV by the Project DCS will initiate the automatic sounding of a warning horn located on the powerhouse (see Section 2.4.1– Recreational and Public Safety). The horn on the powerhouse is not activated automatically by the manual operation of any of the four HBVs. Prior to manually operating any of the HBVs, the operating personnel should activate the warning horn located on the COE's outlet structure, and initiate operation of the HBVs per the COE's operating procedures.

If the penstock to the turbines and HBV No. 3 is dewatered when a high flow event occurs, the penstock could be rewatered and HBV No. 3 returned to service in a few hours as described in Section 3.4.1 – Short Term Dewatering.

2.1.3 Minimum Flow

The COE is required to maintain a minimum flow release of 100 cfs at the Summersville Dam at all times. The minimum flow requirement will not be affected by the Project's operation as the turbines have a minimum discharge capacity of 700 cfs, and can not operate at discharges significantly below the minimum discharge capacity. Flows below 700 cfs must be released through the HBVs. As indicated in Section 2.1.1 – Project Operation, Normal Operating Conditions, the flows to be released from the dam through the Project will be determined by the COE as dictated by downstream conditions and/or lake level in accordance with the COE's Water Control Plan for the Summersville Dam.

River flow data from the Gauley River Gage Station located below the Summersville Dam indicates that the flows will be less than the turbine's minimum discharge capacity approximately 33% of the time (2,900 hours per year). The turbine's minimum discharge capacity will not be known exactly until

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they have been tested in operation. Their minimum discharge capacity will vary slightly with the level of the lake.

Flow (low) releases below 700 cfs will be controlled by the COE and may be discharge through any of the HBVs. Low flows released from any HBV should be released from a valve that is scheduled to be exercised (see Section 2.11 – Valve Exercising).

When the powerhouse's turbines are operating, flows in the river will be maintained even in the event of a shutdown (normal or emergency) of the turbine(s). The controls for HBVs Nos. 1, 2, and 3 have been modified and electronically integrated to the Project DCS to automatically operate (open) a HBV in the event of a turbine shutdown (see Section 2.7 – Howell- Bunger Valves and Section 2.9 – Turbine Shutdown). In the event that a HBV is activated via the Project DCS, there will be a time delay before flows are released from the valve. During the delay, there may be no flow being discharged from the dam or powerhouse . The delay is necessary for safety reasons, to allow the public time to egress the plunge pool downstream of the HBV (see Section 2.4.1 – Recreational and Public Safety).

2.2 Monitoring

The Project is designed to be monitored and operated remotely, and is considered to be an unmanned powerhouse. GRPP intends to operate the powerhouse with local personnel consisting of two powerhouse operators, one of which will also be the Plant Manager and lead operator. The operating personnel will reside in the local vicinity of the powerhouse, generally within one-half hour travel time. The powerhouse will normally be tended in the daytime hours, eight hours a day, five days a week to allow for communication with the COE and to perform routine maintenance and equipment checks.

The Plant Manager will be the primary individual to communicate with the COE

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(see Section 2.3 -- Communications). When the powerhouse is not manned (whether operating or shutdown) there will be a plant operator on-call 24-hours a day, seven days a week. The COE is provided with an "emergency stop - panic button" that is capable of stopping all flow releases from the turbines and all HBVs that are set for automated control by the COE (see Section 2.9 -- Turbine Shutdown). The "panic button" is intended for use by COE personnel in the event that flows from the Project must be stopped immediately and the COE cannot contact the on-call powerhouse operator to have the shutdown initiated.

During the six weekends associated with whitewater activities, the GRPP will provide operating personnel at the powerhouse during the main rafting hours. The personnel will be provided to insure a quick response to operations to adjust flow releases in the event of an emergency situation occurs during the whitewater activities, and to minimize (flow) impacts on the rafting activities.

The Project will be operated and controlled by a Project DCS (Digital Control System) that includes two computer (operating) terminals, one remote and one local (powerhouse). The remote computer is portable and will be in the possession of the on-call powerhouse operator. The Project will also have two remote, limited status monitoring consoles (status consoles). One of the status consoles will be located at the COE's Operation Center at the Summersville Dam, the other located at the GRPP's operations headquarters in Rutland, VT.

The operation of the turbines and the Selected HBV can be fully controlled through the Project DCS either from the powerhouse (local control) or from the remote operating computer.. While the Project DCS has the capability to allow the startup of the turbines from the remote operating computer, the normal operating procedure would be to startup the turbines in the manual mode from the powerhouse (local) computer.

The Project DCS will provide the powerhouse and remote operating computers with the capabilities to monitor the status of all turbine-generator operations, river flow, lake level, lake level rate of change, DO, unit generation, and other status information

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normally associated with the operation of a hydroelectric plant. The Project DCS will also provide the status (gate opening/discharge rate) conditions of the Selected HBVs.

The GRPP's status console will provide status condition of lake level, lake level rate of change, total powerhouse discharge, unit generation, generation hours, mode of turbine-control (lake level or flow control), river flow, and gate position of the Selected HBV. The COE's status console will provide status of river flow, total powerhouse discharge, lake level, turbine-control (lake level or flow control), unit output, lake level rate of change, and the gate position of the Selected HBV. Attached in Appendix B as B-series figures, are logic diagrams and one-line diagrams for the control and operation of the Project turbines and HBVs Nos. 1, 2, and 3.

River flows will be monitored hourly using data from the existing Gauley River Gage Station located downstream of the dam. Total flow to be released from the dam will be established by the COE, with turbine flows set via the Project DCS and measured by calibrated Winter-Kennedy taps located in each of the turbines.

Dissolved oxygen levels (DO) will be monitored at two locations; in the penstock upstream of the turbines, and in the river at the Gauley River Gage Station. The Project DCS will monitor and record water quality. See Section 2.5 – Water Quality, for a description of the means of Project operation to maintain water quality.

The Project DCS will notify the on-call powerhouse operator in the event of equipment problems or a turbine shutdown, or in the event that the turbines or the Selected HBV cannot maintain the required flow discharge or lake level. The Project DCS will also automatically notify, if need be, the GRPP office in the event of a turbine shutdown. After confirming that river flows are being maintained and after assessing the cause of a turbine shutdown, the on-call powerhouse operator will notify the COE of any turbine shutdown (see Section 2.3.3 – Communications, Turbine Shutdown). In the event that river flows have not resumed / are not being maintained (i.e. none of the HBVs were activated / opened), the on-call powerhouse operator shall notify the COE immediately, before assessing the cause of the turbine shutdown or problem with the operation of the

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HBVs. If COE personnel are not available to manually operate any of the HBVs to maintain the river flows, the COE's Resource Manager may authorize the powerhouse operator to unlock and access the COE's outlet structure to manually operate a HBV to maintain river flows (see Section 2.7 Howell-Bunger Valves).

The Project DCS will automatically initiate a normal or emergency shutdown as required. In the event that the Project DCS initiates a turbine shutdown, the Project DCS will also automatically activate (open) the Selected HBV as necessary to maintain the pre-shutdown river flow. If the turbine(s) are shutdown either automatically or manually, the turbine controls will be locked out and the turbine(s) can only be restarted manually at the powerhouse. If a HBV is activated by the automated shutdown sequence of the Project DCS, the HBV can be adjusted or closed either manually on-site or, manually through the Project DCS's local or remote control computers.

2.3 Communications

2.3.1 Routine and Normal Operating Conditions

With respect to the Project, normal operating conditions are associated with flows being discharged from the dam or Project that are less than 4,000 cfs, the approximate combined hydraulic discharge capacity of the turbines (see Section 2.1.1 – Operations, Normal Operating Conditions).

The Plant Manager will be the primary contact with the COE and will contact the COE's Resource Manager at the Summersville Dam's Operation Center at least twice a week to plan long term flow releases and other operational issues that may affect flow releases from the dam or powerhouse. The on-call powerhouse operator will also contact the COE's Summersville Operation Center at the beginning of each day, to confirm the release requirements for the day.

Part of the normal and routine communications between the GRPP and the COE will also include: discussions of the GRPP plans to maintain the quality of

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the flows being released from the Project (see Section 2.5 – Water Quality); and during the rafting season, particularly during the fall and the Gauley River Festival, the routine discussions will include identifying the main rafting dates and scheduling the timing and duration of the flow (volume) to be released on those dates.

The Plant Manger and the COE's Resource Manager will routinely review, monitor, and discuss the timing of the flow transfer from the turbines to the HBVs and associated impacts on public safety and maintaining of river flow and water levels in the plunge pool. The time delays and duration in transferring flow from the turbines to the HBVs will be adjusted as necessary to address any safety and/or flow maintenance issues (see Section 2.4 – Safety). The Plant Manger and the COE's Resource Manager will also routinely observe and discuss any ongoing stagnation of the plunge pool, and discharge flows from the HBVs as necessary to minimize stagnation and maintain safe water levels in the plunge pool (see Section 2.5 – Water Quality, and Section 2.4.3 – Safety, Plunge Pool Water Level).

As part of the routine communications, the Plant Manager and the COE's Resource Manager will discuss and schedule for the exercising of all of the HBV's (see Section 2.11 - Valve Exercising). The Plant Manager and the COE's Resource Manager will also discuss and schedule for planned dewatering of the penstock and turbines and other outages that may be required for maintenance, inspection, or testing of either the Project's or COE's facility. The scheduling of the planned outages is especially important if the outage impacts the generation of electricity or the release of flows from the dam (see Section 3.0 – Maintenance). As necessary and able, the Plant Manger and Resource Manager will prepare and update a five-year plan to identify and schedule long term outages .

Attached, as Appendix C is a contact list of the GRPP's operating personnel and management. The COE will be provided with an updated list of the GRPP contact personnel whenever there has been a change in personnel or contact

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information. At a minimum the GRPP will review and reissue their list annually. The Plant Manager will provide the COE's Resource Manager with a monthly roster of the operator on-call schedule.

Attached, as Appendix D is a list of COE personnel to be contacted by the GRPP personnel as part of routine or emergency communications. The GRPP will be provided with an updated list of the COE's contact personnel whenever there has been a change in personnel or contact information. At a minimum the COE shall review and reissue their list annually .

2.3.2 High Flow Conditions

With respect to the Project, high flows are considered to be any discharge from the dam or Project that exceeds 4,000 cfs, the approximate combined hydraulic discharge capacity of the turbines.

During high flow conditions, the frequency of communication between the COE and the on-call powerhouse operator and the Plant Manager may increase as necessary in response to the COE's requirements for the adjustment of flows to be released from the dam.

If the COE's status console indicates that the powerhouse is operating at full discharge capacity and is on lake level control, then the COE's operation personnel should contact the on-call powerhouse operator to coordinate adjustment of the turbine(s) and HBV flow releases. Increasing the discharge through any of the HBVs may result in the lowering of the lake. HBV No. 3 will be the last valve to discharge when under high flow conditions, because the increased flow through the penstock will result in a reduction of head and discharge capacity on the valve and the Project turbines.

When the turbines are being operated on lake level control, the Project DCS will automatically adjust the turbines' discharge (increase or decrease) in

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order to maintain the specified (target) lake level (see Section 2.1.2 – Project Operations, High Flows). If the COE wants to release more than 4,000 cfs from the dam, the on-call powerhouse operator should be notified and instructed to operate the turbines in the flow control mode.

If the COE's status console indicates that the powerhouse is operating on flow control and the turbines are discharging at full available capacity (4,000 cfs), the COE may operate any HBV, other than the Selected HBV, freely and as necessary without need to coordinate with the on-call powerhouse operator. Operation of HBV No. 3 must be coordinated with the on-call powerhouse operator as discharging through HBV No. 3 will increase the headlosses to the turbines and thereby reduce their discharge capacity. Even during high flow conditions, one HBV must be maintained to operate as the Selected HBV to allow for the automated transfer of discharge to the valve in the event of an automated shutdown of a turbine. When the turbines are operating in flow control mode, the operation of HBVs Nos. 1, 2, & 4 does not significantly affect the turbine(s) discharge. With the powerhouse operating in flow control mode, the Project DCS will adjust the turbine discharges to maintain a fixed flow while allowing the lake level to fluctuate. When operating in the flow control mode, the COE will determine the changes in discharge flows necessary to achieve/maintain the desired lake levels.

2.3.3 Turbine Shutdown

In the event that the Project DCS initiates a shutdown of the turbine(s), whether it is a normal shutdown or an emergency shutdown, the on-call powerhouse operator will be notified automatically and immediately via direct dial pager and the remote operator's computer. The status consoles at the GRPP's office and the COE's Summersville Dam Operation Center will also indicate that the turbine(s) have shutdown. After confirming that river flows are being maintained, and after assessing the cause of a turbine shutdown, the powerhouse operator will notify the COE of the turbine shutdown. In the event that river

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flows have not resumed/are not being maintained (i.e. the Selected HBV did not open), the on-call powerhouse operator shall notify the COE immediately, before assessing the cause of the turbine shutdown or problem with the operation of the HBV . If COE personnel are not available to manually operate a HBV to maintain the river flows, the COE's Resource Manager may authorize the powerhouse operator to unlock and access the COE's outlet structure to manually operate a HBV to maintain river flows (see Section 2.7 – Howell Bunger Valves).

As the turbine(s) shutdown, the Project DCS will automatically open a HBV (Selected HBV) to maintain the pre-shutdown river flow. Discharge of flow from the Selected HBV will be delayed and an audible warning will be sounded as a public safety measure prior to the start of discharging from the HBV (see Section 2.4.1 – Recreational and Public Safety, and Section 2.7 – Howell-Bunger Valve). During the delay, there may be no flow being discharged from the dam or powerhouse . During the six weekends associated with the whitewater activities, the GRPP will provide operating personnel at the powerhouse during the main rafting hours (see Section 2.4.1 – Recreational and Public Safety). The Project is equipped with, and the COE has access to an “emergency stop - panic button” that is capable of stopping all flow releases from the turbines and the HBVs that are selected by COE personnel for automated control by the Project DCS (see Section 2.9 – Turbine Shutdown). The panic button is intended for use by COE personnel in the event that flows from the Project must be stopped immediately, and the COE cannot contact the on-call powerhouse operator to have the shutdown initiated.

2.3.4 Emergency Action Plan

The Summersville Hydroelectric Project does not impound any water with its equipment; therefore an Emergency Action Plan will not be prepared specifically for the Project. The maximum discharge that could be released at the Project would be limited to the flow that could be discharged as a result of the failure of the penstock. The flow resulting from a failure of the penstock would

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be less than the combined discharge from two of the HBVs (12,000 cfs).

The impoundment is managed and regulated by the COE, and the COE maintains a Dam Safety Plan (DSP, also referred to as an Emergency Action Plan by other federal, state, and local agencies) for the dam. The DSP contains the procedures for notification of downstream users of pending problems at the dam. The COE's DSP should be modified to include the GRPP as a contact (see Appendix C for GRPP contact personnel) when the DSP is being revised, tested, or activated. COE notification should include both the Plant Manager and the GRPP's operation's headquarters in Rutland, VT. If the COE must activate the DSP, the on-call powerhouse operator should be notified and instructed to operate the turbines in the flow control mode and also instructed as how much flow the turbines should be discharging or, the target lake level the COE wants to achieve.

In the event that there is a partial, total, or progressive failure of the Project penstock, the on-call powerhouse operator will manually activate the Project's warning horn to warn users to egress the plunge pool area. After activating the warning horn, the on-call operator shall immediately contact the COE for activation of the DSP. A partial or total failure of the penstock would potentially be identified by the on-call powerhouse operator as a reduction of flow through the turbines coupled with an increase in flow at the USGS Gage Station downstream of the dam without a corresponding change in flows from the HBVs, and as a reduction in pressure in the turbine which will result in a low-pressure trip (shut down) of the turbine.

2.3.5 Ramping Rates

The current COE Water Control Plan dictates the ramping rates and water levels to be maintained for the lake and at the Gauley River Gage Station.. To comply with the COE's operating directives and ramping rate(s), the Project will adjust the discharge of the turbines and / or the HBVs being controlled via the Project DCS in increments and timing as directed by the COE.

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During the first two years of operation, the ramping of the turbine discharge during daylight hours may be performed manually in the discharge control mode to comply with the COE's release requirements. During night hours when ramping is not as significant a concern, the GRPP may operate the turbines in the lake level control or flow control modes as directed by the COE. When ramping of the flows is required, the COE shall provide the flow release and time schedule to the Plant Manager or the on-call powerhouse operator.

After the first two years of operation, the GRPP may modify the turbine logic control sequence to automatically perform the ramping of flows to meet the COE's requirements.

2.4 Safety

2.4.1 Recreational and Public Safety

The Project is designed to be remotely operated, and is considered to be an unmanned powerhouse. In the event of a shutdown of the turbine(s) (normal or emergency), the Project DCS will automatically initiate the opening of the Selected HBV to maintain the pre-shutdown river flow.

GRPP intends to operate the powerhouse with local personnel, and the powerhouse will normally be tended in the daytime hours, eight hours a day, five days a week for routine communication with the COE and to perform routine maintenance and equipment checks. During the six weekends associated with whitewater activities, the GRPP will provide operating personnel at the powerhouse during the main rafting hours. The personnel will be provided to ensure a quick response in operations to adjust flow releases in the event of an emergency situation that has occurred with the whitewater activities, and to minimize (flow) impacts on the rafting activities.

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The Project will be equipped with visual signs and an audible device to warn the public when a HBV or turbine(s) will be activated. The warning is required primarily to provide the public with time to egress the plunge pool / tailrace area immediately downstream of the HBV and powerhouse, and vacate the downstream waters edge along the riverbanks. A warning horn will be located on the powerhouse and will operate automatically and independent of the COE's existing warning system. The horn will sound automatically whenever there is a change in discharge from the Project through either the turbines or the HBVs. The horn on the powerhouse will sound to warn of pending discharge from only the HBV that is selected for automated control by the Project DCS. The warning horn on the powerhouse will not sound automatically when the operation of the HBVs is being manually controlled without using the Project DCS.

Upon the initial startup of a turbine(s) the warning horn (electric) will sound to notify the general public in the area immediately downstream of the powerhouse that the powerhouse will start discharging. When the turbines are in operation, the warning horn will also sound whenever there is an increase (or decrease) in turbine discharge of 100 cfs within the preceding half-hour.. A change in discharge of 250 cfs results in less than a six-inch change in stage level at the Gauley River Gage Station.

The flows released from the dam can also quickly change the level of the lake. When at summer pool (El. 1652' with 2,790 surface acres), a one-inch change in lake level over a one-hour period of time is equivalent to a change in inflow or outflow of approximately 2,800 cfs. At winter pool (El. 1575' with 928 surface acres) a one-inch change in lake level in one hour is equivalent to a change in inflow or outflow of 935 cfs.

In the event of a shutdown of the turbine(s) under normal or emergency conditions, the Project DCS will automatically open the Selected HBV and within six minutes (with the lake at summer pool level) the flows in the river will be restored to pre-shutdown discharges. Under a normal shutdown the turbines will

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stop discharging in thirty seconds to two minutes (actual time to be determined during the commissioning tests of the turbines), and under emergency conditions the turbines will stop discharging in less than 15 seconds. The Project is equipped with and the COE has access to an "emergency stop - panic button" that is capable of stopping all flow releases from the turbines or the HBVs that are selected by the COE for automated control by the Project DCS (see Section 2.9 – Turbine Shutdown). The panic button is intended for use by COE personnel in the event that flows from the Project must be stopped immediately and the COE cannot contact the on-call powerhouse operator to have the shutdown initiated.

When the Project DCS initiates a turbine shutdown sequence, the warning horn will automatically sound to notify the general public to vacate the plunge pool/tailrace area as the Selected HBV is about to begin discharging. After the sounding of the warning horn, there will be a 15 second delay before flow is released from the Selected HBV. During the delay, there may be no flow being discharged from the dam or powerhouse. After the 15 second delay, the Selected HBV will automatically commence discharging to 200 cfs (3% open). The 200 cfs discharge will be held for 30 seconds, after which time the discharge from the Selected HBV will increase to match the turbine discharge at the time of the shutdown. The time required to restore the river flow to pre-shutdown conditions is determined by the speed at which a HBV can open and is also dependent on the lake elevation. At summer pool levels, the approximate time for a HBV to increase discharge from 200 cfs to match various turbine discharges is shown in the table that follows. Under winter pool conditions, the time to achieve the required discharge will be slightly longer.

Turbine Discharge - cfs	Valve Opening Time – minutes
1,000	1.0
2,300	3.0
4,000	5.0

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As part of communications between the Plant Manager and the COE's Resource Manager, they will routinely review and discuss the timing of the flow transfer from the turbines to HBV 1, 2 or 3 and the associated impacts on public safety and maintenance of river flow and water levels in the plunge pool (2.3.1 – Communications, Routine and Normal Operating Conditions). The time delays and duration in transferring flow from the turbines to the Selected HBV will be adjusted as necessary to address any safety and/or flow maintenance issues .

Warning signs will be placed and maintained by the GRPP along the powerhouse and access trails to the tailrace and the plunge pool. The signs will state the meaning of the warning horn and the need to immediately leave the tailrace and plunge pool area. Highly visible boundary marking posts will be installed along water's edge on both sides of the river at the outlet of the plunge pool into the river. The posts will be located at least 100 feet downstream of the impact zone of the jet from HBV No. 3. The posts will delineate the upstream area that should be evacuated when the horn is sounded.

2.4.2 Project and Operational Safety

The powerhouse will be equipped with a fire and intrusion system. Activation of the system will be alarmed and displayed at the powerhouse operator's two control stations. In addition the security system will automatically page the on-call powerhouse operator. All safety and intrusion systems will be tested for operability twice a year (see Section 3.3 - Testing).

The Project's substation and powerhouse will be located within a fenced and secured area. The COE will be provided with keys to allow authorized personnel access to HBV No. 3 and to the diversion tunnel (see Appendix A, Figure A-1)

During the life of the Project and the Summersville Dam, operational

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deficiencies may develop with the Summersville Dam or appurtenances that could require the COE to determine or otherwise redefine what the "safe" operating conditions are for both the dam and hydroelectric project. Examples of such conditions may include limitations (in discharge or lake levels) due to condition or operability of the BFVs or HBVs; intake structure, gate, racks, and operators etc.; power tunnel and penstock upstream of the BFV; or main dam. Then, if those safe operating conditions are exceeded, the COE may not operate the affected feature, not even for Corps of Engineers purposes, unless otherwise directed by the District Commander. During the period of unsafe operating conditions, the operation of the hydroelectric project may also have to be modified until safe operating conditions are restored.

If as a result of the COE's redefining the safety operation of the Summersville Dam, the hydroelectric project continues operating with compromised safety, then the COE will not be held liable for damages sustained to the hydroelectric Project.

In the absence of the District Commander's direction to disregard the safe operating conditions of the Summersville Dam, the affected feature will not be operated until the lake and/or flow conditions recede to safe operating conditions.

2.4.3 Plunge Pool Water Levels

During the initial startup of the turbines and HBV No. 3 in June 2001, it was observed that the discharge from HBV No. 3 and the turbines changed the water level of the plunge pool from the pre-Project levels. Discharges from the relocated HBV No. 3 lowered the water level of the plunge pool, and discharges from the turbines raised the water level of the plunge pool. The change in water levels was attributed to the discharge for HBV No. 3 eroding and expanding the area of the plunge pool. The river flows for which the changes in water level of the plunge pool were observed are within the hydraulic capacity of the turbines (700 – 4,000 cfs).

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The lowering of the plunge pool's water level due to the operation of HBV No. 3 is thought to be the result of HBV No. 3 not having a deep enough pool in which to dissipate the energy remaining in the valve's discharge jet. It is anticipated that as the valve is allowed to discharge, its discharge will erode the rock of the riverbed to create a bottom that is deep enough to dissipate the jet's energy (as had occurred from the pre-Project operation of the HBVs). The lowering of the water level in the plunge pool was determined to have negative impacts on water quality and public safety.

The increase in water levels in the plunge pool when flows are discharged from the turbines is also attributed to the eroding action of the discharge from HBV No. 3. As the valve's discharge expands the plunge pool by eroding and displacing the rock of the riverbed, the displaced rock is deposited at the outlet of the plunge pool and resulted in a damming of the water level in the plunge pool under normal operating flows. The sudden increase in the water level in the plunge pool that occurs when flows are transferred from HBV No. 3 to the turbines was determined to impact public safety.

To prevent the lowering of the plunge pool water level when transferring flows from the turbines to HBV No. 3, the controls for HBVs Nos. 1 and 2 were modified to allow automated operation of those valves via the Project DCS. When the Project DCS must maintain river flows by transferring flows from the turbines to a HBV, the transfer would be made to the Selected HBV (see Section 2.7 – Howell-Bunger Valves, and Section 2.9 – Turbine Shutdown).

To prevent significantly increasing the water level of the plunge pool above pre-project levels, the eroded rock that is deposited along the outlet of the plunge pool must be periodically removed. The removal of such material was first performed in August 2001. It is anticipated that the bottom of the plunge pool and the water level in the plunge pool will stabilize after HBV No. 3 has been allowed to erode a plunge pool with sufficient depth to dissipate the energy

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in the discharge jet. The GRPP's Project Manager and the COE's Resource Manager will monitor the water level of the plunge pool and if necessary, the GRPP will remove the rock deposited at the outlet of the plunge pool to maintain the water level of the plunge pool. Prior to removing any of the eroded rock, the GRPP will request and obtain permission from the COE and obtain the necessary environmental permits needed to allow work in the river to remove the rock. It is anticipated that any eroded material would not be removed more frequently than on an annual basis. It is further anticipated that, depending of the volume and duration of flows released by the HBVs, the erosion of the plunge pool and changes in water level should stabilize within a short period of time.

2.5 Water Quality

The powerhouse is equipped with devices capable of automatically monitoring and recording DO and water temperature. The devices monitor the water quality prior to being discharged through the turbines, and in the river at the Gauley River Gage Station downstream of the dam.

In accordance with the Project's Water Quality Certification from the State of West Virginia and the Project's FERC License Article 404, the GRPP will provide means to enhance the DO of the powerhouse discharge, immediately downstream of the Project tailrace, to meet water quality requirements in the months of June through October. The Project's turbines are designed to aspirate or allow oxygen injection to enhance DO levels. The aspiration and oxygen injection systems will be manually regulated by the powerhouse operator, based on the flows being discharged and the water quality data provided by the DO monitoring equipment.

If it is determined that the aspiration and oxygen injection systems are not increasing the DO to the required level, the GRPP may request that the COE divert and release a portion of the Project flows through a HBV other than the Selected HBV. Alternatively, the turbines may be shutdown and all flows discharged through a HBV selected by the COE until the water quality of the inflow has changed to allow the Project

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to meet the required DO levels. If the GRPP requests the COE to release flows through an HBV to meet the DO levels, the powerhouse operator will notify the COE of the flow required to be released (see Section 2.3.1 – Normal Communications). Any flow released through an HBV to maintain DO levels will be subtracted from the total flow being released from the dam (total flow as determined by the COE) and will not be available to the turbines for generating purposes. The GRPP will not request the COE to increase the total flows released from the dam to provide the Project with “additional” water in order for the Project to comply with its requirements for DO enhancement. A detailed description of the water quality monitoring is contained in the *Proposed Dissolved Oxygen Monitoring Plan*, July 11, 1996.

Historically HBV No. 4 has been maintained at 10% open at all times to minimize valve corrosion problem and also to prevent stagnation of the plunge pool. Upon the implementation of Project operation HBV No. 4 will normally be closed when the turbine(s) are operating, and the COE will exercise HBV No. 4 on a monthly basis (see Section 2.11 – Valve Exercising). With the Project in operation it may not be necessary to maintain HBV No. 4 or any other HBV in a partially open position to minimize stagnation of the plunge pool. It is anticipated that the turbine discharge will cause sufficient circulatory motion in the plunge pool to prevent stagnation. During the first two years of the Project’s operation, the operational impact on stagnation of the plunge pool will be continually observed. If stagnation occurs, continuous or periodic releases from HBV No. 4 may be required, with HBV No. 4 maintained in the smallest opening practical to minimize stagnation. Observation or monitoring of the plunge pool for stagnation will be performed for the life of the project, with continuous or periodic releases from HBV No. 4 implemented as necessary to minimize stagnation .

2.6 Butterfly Valves

The existing BFV No. 3 (which presently serves as the guard valve for HBV No. 3) will also serve as the guard valve for the two turbines and the relocated HBV No. 3. The turbines and HBV No. 3 will not have individual guard valves. If a turbine or HBV No. 3 must be removed from service and maintained in a dewatered condition for an

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extended period of time (generally considered to be more than seven days), then BFV No. 3 will be closed and a maintenance bulkhead will be installed immediately upstream of the HBV or turbine to be removed from service (see Section 3.4.2 – Extended Term Dewatering).

The controls for the BFV were not modified or otherwise interfaced with the Project DCS. BFV No. 3 will remain manually controlled, with control performed by the COE. If the GRPP needs to have the valve closed and locked out for maintenance or inspection of the Project, they will contact the COE's Resource Manager at the Summersville Dam or the Reservoir Control Section in the Huntington District Office to coordinate operation (see Section 2.3.1 – Normal Communications).

As part of the Project construction, by-pass piping was installed downstream of BFV Nos. 1 & 2 to allow the filling of the Project penstock (see Appendix A, Figure A-7 & A-8). The dual by-pass was required to allow the penstock to be refilled from whichever BFV is open, allowing one of the two BFVs to be closed.

2.7 Howell-Bunger Valves

As part of the Project's construction, the GRPP relocated the existing HBV No. 3 to a separate branch off of the main penstock on the north side of the powerhouse (see Appendix A, Figure A-1). The valve does not have a separate guard valve; the existing BFV No. 3 will serve as the guard valve for the HBV and both turbines.

Also as part of the Project construction, the controls for HBVs Nos. 1, 2, and 3 were modified to electronically interface with the Project DCS, allowing the operation of any of the three valves to be controlled by or through the Project DCS. The primary and backup power sources to all three valves were not changed, and remain through the COE's existing primary and backup power sources. There were no changes to the controls or operating mechanisms for HBV No. 4. HBV No. 4 does not interface with the Project DCS, and operation of the valve will be performed locally by the COE per their operating procedures.

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The layout of HBV No. 3 was not redesigned. The only modification to the valve's layout was the inclusion of a longer length of penstock transitioning from the main penstock's diameter to the valve's nine-foot diameter. The relocation of the valve or the redesign of the controls will not affect the rate of travel for the HBV, and based on a physical model study, the relocation had a negligible impact on the valve's discharge capacity.

The method / means to mechanically operate HBV Nos. 1, 2, and 3 were not modified. Only the valves' controls and position indicators were modified to allow the valves' operation to be coordinated with the turbine operations, with the valves' operation being monitored and capable of being controlled by the Project DCS. Each HBVs' operational control was modified by equipping the valve with a manually operated, Manual – Automatic – Lockout, "control selector switch" (CSS) located on a control panel in the COE's valve house. With the CSS in the Manual mode, a valve can be operated only locally by the use of hand controls located at the valve and at the control panel in the COE valve house. With the CSS in the Automatic mode, each valves' operation can be controlled automatically by or manually through the Project DCS. The Lockout position of the CSS allows the valve to be removed from service for maintenance or other purposes. The COE's personnel will be responsible for determining and setting the operating position (mode) of the valves' CSS.

In the manual control mode, the operation of a valve is controlled in the same manner as was used prior to the construction of the Project. In the manual control mode, a valve's operation can be controlled at two locations, locally at the valve itself or from controls in the COE's existing valve house. When a valve is to be operated in the manual control mode, the setting of the valve's CSS to the Manual position will prevent the valve from being controlled remotely or automatically via the Project DCS.

With the CSS in the Automatic mode, HBV Nos. 1, 2, and 3 can be controlled individually, either automatically by or, manually from the Project DCS. The Project DCS will select one HBV (the Selected HBV) from among the HBVs with their CSS set

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in the Automatic position by COE operators to allow the valve to be operated as necessary to maintain flow releases in the river in the event of a normal or emergency turbine shutdown. When the CSS for more than one HBV is set in the Automatic position, the Project DCS will identify the available valves and select and designate one valve as the "Selected HBV", using a protocol hierarchy for selecting the valve in the order of HBV No. 1 then No. 2 and lastly No. 3. If the Selected HBV does not operate as directed by the Project DCS, the Project DCS will designate another HBV from those remaining with their CSS set in the automatic mode, as the Selected HBV, using the above protocol hierarchy. If no HBV has its' CSS set in the Automatic mode or, if no HBV in the Automatic mode operates as required, the Project DCS will annunciate and alarm the condition to the on-call Plant Operator. To prevent a HBV from operation by or through the Project DCS, the valve's CSS must be positioned to Manual or Lockout. Included in Appendix B are B-series figures that shown the logic and one-line diagrams of the control, monitoring, and power schematics for HBV Nos. 1, 2, and 3 as installed for the construction of the Project.

When operating in the automatic mode, the Project DCS would automatically operate (open) the Selected HBV during a turbine shutdown to maintain the pre-shutdown river flow (see Section 2.9 - Turbine Shutdown and Section 2.10 - Backup Power). The Selected HBV will be activated (opened) in a delayed, controlled fashion to allow for public safety. In the initial early stage of activation, the HBV will not discharge flow in order to allow warning the public to egress the plunge pool downstream of the valve (see Section 2.4.1 – Recreational and Public Safety). If a HBV is activated by the Project DCS shutdown sequence, then the valve can be adjusted or closed manually, either on-site or via the Project DCS.

The COE will train GRPP operators in the procedures for the manual (on-site) operation of HBVs Nos. 1, 2, and 3. The COE will also provide keys and any security codes needed to access and manually operate the HBVs in the event that COE personnel are not available to perform such function. GRPP personnel may not access or operate any HBV without the authorization of the COE's Resource Manager or his designee. The keys to the outlet structure and the valve controls will remain under lock and key in the

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powerhouse.

The COE has been provided with access to an "emergency stop - panic button" that is capable of stopping all flow releases from the turbines or any HBV whose CSS has been set by the COE to the Automatic position (see Section 2.9 – Turbine Shutdown). A panic button is located in the COE valve house and at the COE's Operation Center at the dam. The panic button is intended for use by COE personnel in the event that flows from the Project must be stopped immediately and the COE cannot contact the on-call powerhouse operator to have the shutdown initiated .

The control modifications also included the addition of equipment to provide electronic feedback (to the Project DCS) of the position of HBVs Nos. 1, 2, and 3. The valves were also equipped with time-out (dropout) devices that will shutdown a valve's operation if no hood movement is detected, in the event that the actuator's gears are stripped or there is other disconnection between the actuator and the HBV. An alarm will sound at the Project DCS in the event that movement of the valve does not occur or, movement is stopped before it reaches the desired open position. In the event that river flows have not resumed or are not being maintained (i.e. no HBV opened), the on-call powerhouse operator shall notify the COE immediately, before assessing the cause of the turbine shutdown or problem with the operation of the HBV. If COE personnel are not available to manually operate a HBV to maintain the river flows, the COE's Resource Manager may authorize the powerhouse operator to unlock and access the COE's outlet structure to manually operate a HBV to maintain river flows.

In the event of high flow releases (flows in excess of turbine capacity, approximately 4,000 cfs) the operation of the HBVs should be coordinated with the operation of the turbines (see Section 2.3.2 - Communications, High Flow Conditions). The COE should notify the on-call powerhouse operator of their intention to operate any of the HBVs. The relocated HBV No. 3 will normally be the last valve to discharge, and the first valve to be shut down . This is necessary to optimize turbine efficiency and to minimize headlosses to the turbines. COE reserves the right to begin operation of HBV No. 3 after HBV No. 1 and No. 2 have reached 90% opening.

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The status of the position of the Selected HBV can be monitored via the status consoles in the COE's Operation Center at the Summersville Dam, GRPP operations headquarters in Rutland, VT, and the Project DCS.

2.8 Turbine Startup

The Project's two turbines will operate as run-of-river, per the flow release and operating schedule as established by the COE. The turbines cannot be operated independent of the utility grid, and are equipped with hydraulic gate positionors (not governors). The Project DCS has the capability to allow the startup of the turbines from the remote operating computer, although the normal operating procedure would be to startup the turbines in the manual mode through the Project DCS from the powerhouse (local) computer. The turbines can be shutdown automatically by the Project DCS or, they can be shutdown manually using either the powerhouse or remote operating computers. Prior to the turbine's start, an audible warning will be sounded to warn the public of the ensuing release (or increase) of flows, to allow them to egress the plunge pool and tailrace. The audible warning will also sound whenever the powerhouse discharge increases 100 cfs within the preceding half-hour (see Section 2.4.1 – Recreational and Public Safety).

2.9 Turbine Shutdown

The Project DCS will automatically shutdown the turbines due to low flow (less than 700 cfs) conditions, mechanical or electrical problems, or emergency conditions. For any shutdown sequence, the turbine controls will automatically activate (open) the Selected HBV to maintain the pre-shutdown river flow Automatic mode by COE personnel (see Section 2.7 – Howell Bunger Valves). The Selected HBV is designated by the Project DCS from the valve(s) whose CSS has been set to the

A normal shutdown sequence occurs as a result of flows being reduced to below the turbine's minimum discharge or due to a non-emergency mechanical or electrical

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problem. A normal shutdown sequence may be initiated manually by the powerhouse operator or automatically by the Project DCS. Under a normal shutdown sequence, a turbine will stop discharging in thirty seconds to two minutes (actual time to be determined during the commissioning tests of the turbines).

Emergency shutdowns can be initiated because of a generator load rejection where the generator becomes isolated from the utility electrical grid, lighting strikes, loss of station electrical supply or other electrical interruptions, mechanical problems including loss of cooling water, lubricating oils, or loss of hydraulic or electric controls. For normal shutdowns and most emergency shutdowns, the shutdown sequence will not result in any increase in the turbine's discharge capacity. If an emergency shutdown is initiated due to a closure of an electrical breaker that isolates the turbine from the power grid (load rejection), then the turbine's speed and discharge will increase. If a single turbine was operating at a full (100%) gate discharge of 2,300 cfs, and the turbine is isolated from the power grid, the turbine's discharge would increase to 2,500 cfs (8.7% increase in discharge) at maximum speed (maximum flow / no load). For load rejections at gate openings that are less than 100% (open), the corresponding increase in flow will also be less than 10% greater than the pre-load rejection discharge. To protect the mechanical equipment from damage, emergency shutdowns will result in the stopping of the turbine(s) discharge in approximately fourteen seconds.

For any turbine shutdown sequence, the Project DCS will automatically activate the opening of the Selected HBV (see Section 2.7 - Howell Bunger Valve) to maintain the pre-shutdown river flows. For public safety, there will be a delay before the HBV begins discharging and an audible warning will sound (see Section 2.4.1 - Recreational and Public Safety).

The Project is equipped with, and the COE has access to, an "emergency stop - panic button" that is capable of stopping all flow releases from the turbines and all of the HBVs that have been selected by COE personnel for automated control by the Project DCS. The panic button (key operated) would be activated in the event that there is an immediate need to stop or reduce the river flows, as may be necessary to initiate a river

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rescue. A "panic button" is located on the valve control panel inside of the COE outlet structure, and at the COE's Operation Center at the dam.

The panic button would be activated by COE personnel only if the powerhouse is not tended and if the COE cannot make contact with the on-call powerhouse operator to shutdown the turbines. The HBVs that would be automatically closed by the Project DCS as a result of the activation of the panic button are only those valves whose CSS has been set to the Automatic mode by COE personnel (see Section 2.7 – Howell-Bunger Valves). The controls for HBV No. 4 do not interface with the Project DCS therefore, the discharge from HBV No. 4 will not change when the panic button is activated. If the panic button is activated, the restoration of discharge of river flows must then be performed by manually operating one of the HBVs or, by GRPP personnel restarting the turbine(s). The keys to the panic button will remain under lock and key in the COE's office at the Summersville Dam to prevent accidental or unauthorized operation of the panic button.

In the event of any mechanical or electrical problems or any shutdown of a turbine, the Project DCS will automatically page the on-call powerhouse operator. Notice of the shutdown will also be evident on the Project's two control computers and the status consoles located at the GRPP's office and the COE's Operation Center at the Summersville Dam. The computers and consoles will show that the operational status of the individual units (kW output) has changed to 0 kW with flow being discharged (valve position and flow will be shown) from the Selected HBV.

The turbine control computer will automatically and immediately alarm all problems and/or turbine shutdown to the on-call powerhouse operator, and within the limits of the programming for the Project DCS, will identify (annunciate) the cause of the problem/shutdown. If a turbine shuts down for other than the preprogrammed conditions, there will not be an annunciated cause for the shutdown and the on-call powerhouse operator will go to the powerhouse to determine the cause of the shutdown. One such unannunciated cause for a shutdown could be the failure of the penstock.

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In an event where the flow releases cannot be stopped due to a penstock failure or the turbine wicket gates cannot be closed to shutdown the turbine, then the COE will be requested to close BFV No. 3 to stop the release of flow through the penstock. In such an event, the on-call powerhouse operator will contact the COE per Appendix D to request immediate closure of BFV No. 3. The powerhouse penstock is equipped with a vacuum breaker located downstream of the BFV No. 3.

2.10 Backup Power

Station service power for the powerhouse is obtained through the Project's transmission line that connects to the Appalachian Power Company's distribution grid at the Mt. Nebo Substation at the Meadow River Mine. Backup power to the Project is provided via the GRPP's 175 KW standby diesel generator located in the powerhouse substation. The standby generator is equipped with an auto start and automatic transfer switch to provide power to the powerhouse and Project DCS in the event of a loss of station service power.

The Project DCS is equipped with an uninterruptable power supply (UPS) to maintain control power and allow a controlled shutdown of the turbines in the event of a loss of station service power. Upon loss of station service power, the Project DCS will automatically initiate an emergency shutdown of the turbines. The turbines' hydraulic actuators/gate positioners are capable of three close-open cycles without the need of electrical power.

Primary power for the operation and control of all four of the HBVs is provided via the COE's electrical connection to the Allegheny Power Systems, Inc. (APS), and backup power to all four of the HBVs is provided by the COE's standby generator. The controls and power wiring to HBV Nos. 1, 2, and 3 were modified to allow the HBVs to interface with, and be activated and controlled by or through the Project DCS. No modifications were made to either the controls or power wiring to HBV No. 4.

Modifications to the electrical controls and power supply to HBV Nos. 1, 2, and 3

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were necessary to allow the HBVs to interface with and be controlled by the Project DCS, for a HBV to open automatically in the event of a turbine shutdown. The automated opening of the HBV is necessary to maintain the pre-shutdown river flows. The turbine(s) will automatically shutdown as a result of loss of station service power, load rejection, mechanical or electrical problems, or low flow (see Section 2.9 – Turbine Shutdown).

To interface the operation of HBV Nos. 1, 2, and 3 for control by the Project DCS, the GRPP added an automatic transfer switch and installed auto start capability to the COE's standby generator to insure the availability of power for the operation of any of the three HBVs. If there is a loss of station service power to the Project, the GRPP standby generator and the Project DCS UPS will provide the necessary power to initiate operation of the COE's standby generator and control the operation of a HBV. The power to operate HBV 1, 2, or 3 is provided by the COE's primary or standby power sources.

Whether the Project DCS is operating from station service power or off of backup power, the Project DCS is designed to start up the COE's standby generator only if there is no power to the HBVs from the COE's primary power source (APS), and the Project DCS has an immediate need to operate a HBV to maintain river flows. If the Project DCS starts up the COE's standby generator, the standby generator will automatically shutdown (up to) 30 minutes after startup. The running time of the generator is adjustable, with the duration based on the amount of time required to initiate the necessary audible warnings and safely operate a HBV (see Section 2.4.1 – Recreational and Safety).

None of the Project's generating equipment, controls or Project DCS receives power from the COE's standby generator. Included in Appendix B, as B-series figures are the one-line diagrams for the Project and the HBVs as modified to interface with the Project DCS.

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2.11 Valve Exercising

The GRPP will, through normal operations or otherwise, operate to test and verify the operability of all of the control devices associated with HBV Nos. 1, 2, or 3 for interfacing and control by the Project DCS. The valves will be operated at least twice a year under flowing conditions though at least one continuous close-open-close cycle, discharging up to 4,000 cfs to verify operability of all control devices over the full range of valve travel. The COE is responsible for exercising all HBVs and BFVs to minimize valve corrosion.

From historic flow records it appears that the exercising of the HBVs and BFVs regulated by the COE could routinely be performed in the winter-spring months or whenever flows exceed the hydraulic capacity of the turbines (4,000-cfs) or, during the summer months when flows are less than the minimum discharge capacity of the turbines (700-cfs). Based on historic flow records for the Gauley River Gage Station, the hydraulic capacity of the turbines is exceeded annually 13.5% of the time (1,200 hours per year), and there is insufficient flow to operate the turbines for 33% of the time (2,900 hours per year). To prevent corrosion of the valves, the COE reserves the right to exercise (by discharging) all four HBVs one time per month each, not to exceed a 2% opening, as conditions require. The valves will be opened to 2% gate, allowed to discharge for five (5) minutes and then closed. The scheduling of the time to exercise all of the HBVs will be included as part of routine communications between the Plant manager and the COE's Resource Manager .

Historically HBV No. 4 has been maintained at 10% open at all times to minimize valve corrosion problem and also to prevent stagnation of the plunge pool. Upon the implementation of Project operation, HBV No. 4 will normally be closed when the turbine(s) are operating, and the COE will exercise HBV No. 4 on a monthly basis. Operation of HBV No. 4 to minimize stagnation of the plunge pool is addressed in Section 2.5 – Water Quality.

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3.0 MAINTENANCE & DEWATERING

3.1 Maintenance

The GRPP is responsible for maintenance of Project equipment and structures, including the penstock and support piers, the controls to HBV Nos. 1, 2, and 3 that interface with the Project DCS, and the concrete structure housing HBV No. 3. In general, the GRPP will maintain all items that were constructed or installed as part of the Project's construction. The COE is responsible for maintaining all of the HBVs and BFVs, and all structures and equipment associated with the Summersville Dam that were not constructed or installed as part of the Project.

As part of the routine weekly communications (see Section 2.3.1 – Communications, Routine and Normal Operating Conditions) the Plant Manager and the COE's Resource Manager will discuss and schedule for planned outages for either the Project or COE's facility as may otherwise impact the generation of electricity or the release of flows from the dam. As necessary and able, the Plant Manager and Resource Manager will prepare and update a five year plan to identify and schedule long term outages.

3.1.1 Hydroelectric Project

During the first two years of operation, the powerhouse may be shutdown and dewatered more frequently than normal to accommodate adjustments, modifications, and corrective work on the equipment. Under normal operations throughout the life of the project/license, it is anticipated that the powerhouse would be shutdown and dewatered annually to allow for routine inspections and maintenance.

Neither the two turbines or the relocated HBV No. 3 will have separate guard valves. To dewater the penstock and turbines requires the closing of BFV No. 3. When the BFV is closed (and locked-out to prevent operation), HBV No. 3

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and the two turbines will not be immediately available for discharge (see Section 3.4 - Dewatering). The COE will be responsible for the opening and closing of BFV No. 3.

During the first two years, the frequency and duration of time required for shutdown and dewatering is unknown. GRPP will coordinate any shutdown(s) and dewatering(s) with the COE to schedule and minimize when and how long HBV No. 3 would be removed from service.

For routine annual inspections, it is anticipated that the project would be dewatered for a period of less than one week (includes time for dewatering and rewatering). For extended maintenance or modifications, which require a longer dewatered time, maintenance bulkheads will be installed to minimize the amount of time the penstock is dewatered and HBV No. 3 or a turbine is out of service. There are two identically sized bulkheads for use to isolate the turbines, and there is a separate larger diameter bulkhead for use to isolate HBV No. 3 (see Section 3.4 - Dewatering). All four of the Summersville Dam' HBVs and BFVs will be periodically exercised (see Section 2.11 - Valve Exercising).

To disassemble the generating equipment, a tracked crane will be positioned on the powerhouse roof. The roof is designed for a live load of 1,000 psf. The roof was designed with a crane truck path capable of supporting lifting of the 110-ton generator rotor and the weight of a 260-ton crane (Manitowoc 888 Series 2, see Black & Veatch drawing S5008).

3.1.2 COE Facilities

The COE is responsible for the maintenance of all HBVs and BFVs and associated operators and equipment, and other COE equipment and facilities not constructed or installed by the GRPP as part of the Project. GRPP will test HBV Nos. 1, 2, and 3 and the turbines twice a year to ensure that the controls operate to allow the equipment to interface properly with the Project DCS. GRPP will also

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maintain the electrical elements and controls required to interface HBV Nos. 1, 2, and 3 with the Project DCS.

Neither the two turbines or the relocated HBV No. 3 will have separate guard valves. To dewater the penstock and turbines requires the closing of BFV No. 3. When the BFV is closed (and locked-out to prevent operation), HBV No. 3 and the two turbines will not be immediately available for discharge (see Section 3.4 - Dewatering). The COE will be responsible for the opening and closing of BFV No. 3.

Access to HBV No. 3 for maintenance by the COE is via the roof of the powerhouse. The COE is responsible for providing all personnel and equipment, including crane service, necessary to perform required maintenance of HBV No. 3 and associated equipment. The roof of the powerhouse has sufficient load bearing capacity for the crane and HBV but, the outrigger width is limited. Based on information obtained during the construction of the Project, the weight of HBV No. 3 when lifted as a single unit was estimated to be 50 tons including rigging. If HBV No. 3 must be removed as a single unit there may be a difference in crane costs compared to what would be required if HBV No. 3 were located in the COE's outlet structure. This differential may be positive or negative, depending on the type of crane deployed and the duration of the deployment. The COE is responsible for documenting the cost differentials and GRPP will reimburse the COE for the net positive difference in costs over time. The COE shall coordinate with the GRPP for scheduling equipment and crane access across the powerhouse roof to HBV No. 3.

3.2 Inspections

GRPP will perform routine operational inspections of the condition of the Project's substation, generating equipment, standby generator, penstock, site security, etc. as necessary for the operation of the Project. The routine inspections will be performed by the powerhouse operator, checking on lubrication, operation, leakage, and other

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indicators of possible problems. The inspection will not include the dam, intake structure, any of the BFVs or HBVs, their equipment and appurtenances, or other equipment and structures whose operation and maintenance are the responsibility of the COE.

GRPP will also perform a detailed annual inspection of all of the mechanical and electrical equipment, structures, and civil works that are part of the Project. GRPP will submit inspection reports to the FERC as required by their License, and a copy of the reports will be provided to the COE. The criteria for inspecting and maintaining the powerhouse, the civil site, generating and operating equipment, and the substation will be determined by the GRPP based on industry standards and professional judgement. The criteria for inspecting and maintaining the penstock, penstock support piers, and the HBV structure concrete will be based on COE standards and professional judgement as jointly determined by the COE and the GRPP. GRPP may utilize the services of outside engineers to assist in the annual inspections. The GRPP will notify the COE of the schedule for the annual inspections so that the COE can have representatives involved if desired. As part of the inspection the GRPP will adjust the Project's lake level and river stage gauges as necessary to calibrate to the COE's equipment.

An internal inspection of the penstock and turbine spiral case would be performed, as a minimum, approximately every five years, coinciding with the COE's dewatering and inspection of the power tunnel, BFVs and the HBVs. The GRPP may utilize the services of others to assist in the inspection of the water passages and/or generating equipment. The COE may inspect the penstock, HBV No. 3, and BFV No. 3 whenever the penstock is dewatered, provided that the penstock is dewatered for a sufficient amount of time to allow access and inspection. Access to the interior of the penstock is via manways in both of the turbines' spiral cases, a manway in the penstock within the limits of the COE outlet structure, and via access through HBV No. 3. The location of the manways are shown in Appendix A, Figure A-7. Scheduling of the dewatered outages will be discussed as part of routine communications between the Plant Manager and the COE's Resource Manager (see Section 2.3.1 – Communications, Routine and Normal Operating Conditions).

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As part of the inspection program, the GRPP will establish survey points on the penstock to monitor movement (horizontal or vertical) that may result from any expansive growth of the powerhouse concrete. The penstock survey will be performed every five years (or as defined in the monitoring plan), with the frequency of the survey modified as necessary if growth or movement is documented. Included as Appendix E, is the initial plan for monitoring any movement of the penstock. The location of the monitoring points and the methods used to perform the monitoring and evaluation of the data have been prepared in consultation with, and approval of the COE. The COE will be provided with a copy of the monitoring data, findings, and conclusions within 90 days of completion of the monitoring period. If the data indicates that there may be a potential for significant movement, then the GRPP and the COE will evaluate the need for additional monitoring, testing or remedial measures, and separate document(s) will be prepared as necessary to address those needs.

3.3 Testing

GRPP will perform a semi-annual test of the communications system, including testing of the audible warning system that affects public safety. As part of the test, the GRPP will inspect the warning signs and will make repairs as necessary. The GRPP will also operate or otherwise perform semi-annual tests of the controls and operation of HBV Nos. 1, 2, and 3 and the COE's standby generator to insure that the valves' controls, power supply, and operation interface with the Project DCS (see Section 2.11 – Valve Exercising).

3.4 Dewatering

To dewater the turbines will require the dewatering of the penstock and HBV No. 3. The GRPP will coordinate the schedule and duration of any dewatering with the COE. Except for emergency situations, it is anticipated that the dewatering would be scheduled to occur during the low flow months when there is insufficient flows to operate the turbines (flows less than 700 cfs).

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To dewater the penstock or Project will require the closing and lockout of the existing BFV No. 3 and closing the draft tube gates to both turbines. Neither of the two turbines or the relocated HBV No. 3 will have their own guard valve, the existing BFV No. 3 serves as the guard valve for both turbines and HBV No. 3. When BFV No. 3 is closed, both turbines and the HBV No. 3 will be removed from service and the penstock will be drained through the HBV No. 3 and drain valves (6" diameter) in the penstock and turbine spiral cases to both turbines. The COE will be responsible for the closing and locking out of BFV No. 3. The penstock is equipped with a vacuum breaker that, depending on the rate of draining (i.e., opening of HBV No. 3) would operate automatically while dewatering the penstock. A dual by-pass piping system (8-inch diameter) is provided to allow the filling of the penstock from downstream of BFV Nos. 1 & 2, allowing the penstock to be filled even if one of the BFVs is closed (see Appendix A, Figures A-7 and A-8 for valve locations).

The penstock is also equipped with a 6" diameter drain that is located in the upper length of the penstock (closed off with a blind flange), upstream of the bifurcation to Turbine No. 2. When sand bagged to create a 6 to 12 inch depth of water over the drain, the drain should discharge the leakage from BFV No. 3 that was estimated in 2000 to be approximately 400 gpm. The upper drain is not required for use to dewater the penstock. The drain would be used only if the bulkhead to Turbine No. 1 were being removed/installed.

3.4.1 Short Term Dewatering

Dewatering the water passages for routine inspection/maintenance is estimated to take approximately six to eight hours. Four to five hours to drain the water passageways with two to three hours to close the draft tube gates and remove access hatches to the penstock and/or the turbine spiral case. To rewater the Project, it is estimated that it will take eight to ten hours; three to four hours to close-up the turbines and remove the draft tube gates, and four hours to fill the water passageways. For routine inspections of both turbines, it is anticipated that

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the project would be dewatered for a period of one-week (including time for dewatering and rewatering).

The major steps to dewatering the water passages are:

1. Shutdown and secure the turbine-generating equipment,
2. Close BFV No. 3 and the by-pass valves from BFV Nos. 1 and 2 to the penstock,
3. Partially open HBV No. 3 to allow water levels in the penstock to free drain to tailwater (invert of HBV No. 3 is more than fifteen feet above normal tailwater),
 - Depending on the rate of opening of the NBV, the penstock's two vacuum relief valves (located in COE's outlet structure) may automatically open to minimize negative pressures in the penstock.
4. Partially open the turbine wicket gates, and open the drain lines from the penstock and turbine spiral case into the draft tube,
5. Lower the draft tube gates,
6. Start the station dewatering pumps.

The powerhouse's dewatering pumps are connected to the essential motor control center which receives power from the station service or from the Project's standby generator.

The major steps to rewatering the water passages are:

1. Close HBV No. 3 and all hatches into the water passages,
2. Open 3" air vent in penstock and the 2" air vents located in each of the two vacuum relief valves,
3. Rewater the draft tubes with all drain lines open and the turbine wicket gates partially open,
4. When water level in the penstock equals the level of the

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- tailrace, raise the draft tube gates,
5. Close turbine wicket gates and all drain lines between the penstock, turbine and draft tube.
6. Open the normally closed eight-inch valves that will by-pass flows around BFVs Nos. 1 and 2 to fill the penstock.
7. Close 3" penstock air relief vent and air relief vent in each of the two vacuum relief valves.

During a routine inspection/maintenance dewatering, if a storm event occurs where the COE requires the penstock to be rewatered to reactivate HBV No. 3, it is estimated that the penstock could be rewatered and the HBV returned to service within twelve to fourteen hours of notice. The estimated time includes an allowance for Project personnel to reach the site, remove maintenance/inspection equipment; close the access hatches, and rewater the water passages.

3.4.2 Extended Term Dewatering

Neither the two turbines or the relocated HBV No. 3 will have separate guard valves. To dewater the penstock and turbines requires the closing of BFV No. 3. When the BFV is closed (and locked-out to prevent operation), HBV No. 3 and the two turbines will not be immediately available for discharge. The COE will be responsible for the opening and closing of BFV No. 3.

If a turbine or the HBV No. 3 is to be removed from service and left in a dewatered condition for more than seven days, a maintenance bulkhead will be installed upstream of the turbine(s) or HBV No. 3 (see Appendix A, Figures A-3 and A-5) to be removed from service thereby allowing the remaining turbine(s) or valve to be put back in service. There is a removable spool piece located in a pit immediately upstream of each turbine and the HBV No. 3, where the maintenance bulkhead would be installed. The Project has two identically sized and interchangeable bulkheads for the turbines, and one larger diameter bulkhead for

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HBV No. 3. Once the bulkhead is installed, the penstock can be rewatered and the remaining turbine(s) or HBV No. 3 would be returned to service.

The removable spool pieces consist of a short length of "penstock" with flanges and Dresser (type) couplings to allow ease of removal. The distance between the flanges is wide enough to accommodate the possible future installation of a guard BFV. The spool pieces and bulkheads are designed for a static pressure based on the reservoir at El. 1733' (approximately 370' of static head).

It is estimated that it will take 24 to 32 hours to install or remove a single spool piece and bulkhead, including dewatering and rewatering all water passages. Removal and installation of the spool pieces and bulkheads requires bringing in a mobile crane.

LARGE-FORMAT IMAGES

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JOB: A327	DIGITAL CONTROL SYSTEM	SHEET 2 of 42	
DESIGN.: MSU	APPLICATION SOFTWARE	EDITION DATE: 11/22/99	
APPRD. FGA	TOP LEVEL DESIGN	REV. DATE: 01/26/2000	

SUMMERSVILLE HYDROELECTRIC PROJECT

Digital Control System

Application Software -
Top Level Design

B-6

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JOB: A327	DIGITAL CONTROL SYSTEM	REV. DATE: 01/26/2000	
DESIGN.: MSU			
APPRD. FGA			
	APPLICATION SOFTWARE TOP LEVEL DESIGN		

Water Flow Control

Type: Monitoring and command
Process unit: PLC
Level: 1

Description

This control is implemented through two types of routines. The first one is in charge of the following tasks:

- Take the operator setpoint and validate it, comparing this value to limits flow values according several conditions (units in automatic control mode or off mode, Howell Bunker Valve availability, Min.-Max. Flow limits values, etc).
- Distribute the water flow setpoint value: different flow ranges are predefined according the setpoint values for dividing the total flow among unit turbines and Howell Bunker Valve.
- Transfer these distribution flow values to individual flow control routines, one for each element to be controlled (unit 1, unit 2 and HBV #3).

These individual flow control routines -the second type- acquire each individual flow value -transferred from the main routine- and take the correspondent equipment to this flow value. This is made opening-closing units' wicket gates and HBV.

In a screen there are indications about each equipment that is enabled to be commanded from the automatic flow control. Always it is preferred to generate power and only in case of one or both units set in 'off mode' or 'manual mode', HBV acts to maintain the flow not covered by units.

PLC logic applies specifications stated in:

- PROPOSED OPERATING PLAN (02/28/99). There, it is indicated that HBV #1, HBV #2 and HBV #4 are going to be controlled by COE. They are not controlled by digital control system at all.

HBV #3 CONTROL & PLANT INSTRUMENTATION PLAN", Dwg. 74375-055-E1001 (10/19/99).

It consists of a setpoint assigning subroutine and three individuals flow controls, one for each equipment to be controlled (unit 1, unit 2 and HBV #3).

Units are started-stopped as required by flow control. If a unit or HBV is working in manual mode, its flow can not be modified by the PLC. Total flow is distributed among the enabled equipment. Variations in manual operated units do not have incidence over individual setpoints until a new "confirm" order is emitted.


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PLC - Individuals setpoint assigning

When a high level ("1") is received from an Operator Station (Fix) in a specific PLC register, the logic program goes into a subroutine to assign new flow setpoint for unit 1, unit 2 and Howell Bunger Valve #3.

Even in case of flow or pond level control modes, the calculation leads to a total water flow setpoint, which must be reached and maintained. The calculated total flow setpoint is distributed according the following premises (OPERATING PLAN):

- Setpoint less than 485 cfs: turbines stopped and HBV #3 closed. COE must release this flow through HBV #4. ~~Summersville control system does not control that valve.~~
THRU HBV 1,2,4
- Setpoint from 485 cfs up to 700 cfs: this value is managed by the HBV #3. Turbines must stop or remain stopped.
- Setpoint from 700 cfs up to 2,000 cfs: this setpoint value is applied to one turbine. The another one must stop or remain stopped. According to the Hill Diagram, the turbines reach their point of maximum efficiency at $Q_{eff} = 2,000$ cfs, decreasing it slightly as the Head value decreases. At Head values less than 190 feet (approx.), the turbine can not reach 2,000 cfs at its maximum aperture. In this case flows in excess of flow reached by the turbine (up to 2,000 cfs) should be regulated by COE via ~~HBV #3~~ *THRU HBV 1,2,4*
- Setpoint from 2,000 cfs up to 2,700 cfs: one turbine is leaded to take a flow corresponding to its maximum efficiency ($Q_{eff} = 2,000$ cfs). The another one must stop or remain stopped. Flows in excess of flow reached by the turbine (up to 2,700 cfs) should be released by the HBV #3 or regulated by the COE via ~~HBV #4~~ (to be defined by the client).
THRU HBV 1,2,4
- Setpoint from 2,700 cfs up to 4000 cfs: one turbine is leaded to take a flow corresponding to its maximum efficiency ($Q_{eff} = 2,000$ cfs). This flow value is subtracted from setpoint and the obtained value is applied to the another turbine. At head value less than 190 feet (approx.), the turbine can not reach 2,000 cfs at its maximum aperture. In this case flows in excess of flow reached by both turbines (up to 4,000 cfs) should be regulated by COE via ~~HBV #4~~ *THRU HBV 1,2,4*
- Setpoint greater than 4000 cfs: both turbines are leaded to take a flow corresponding to their maximum efficiency ($Q_{eff} = 2,000$ cfs). These flow values are subtracted from setpoint and the obtained flow value will be regulated by the COE through HBV #1 and/or #2. At head value less than 190 feet (approx.), turbines can not reach 2,000 cfs at its maximum aperture. In this case flows in excess of flow reached by both turbines should be regulated by COE ~~THRU HBV #1 and/or #2~~
THRU HBV 1,2,4

	SUMMERVILLE HYDROELECTRIC PROJECT DIGITAL CONTROL SYSTEM APPLICATION SOFTWARE TOP LEVEL DESIGN	DWG N°:	Rev N°:
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JOB: A327			
DESIGN.: MSU			
APPRD. FGA		REV. DATE: 01/26/2000	

Individual flow control for units

In each individual control subroutine, a flow error is obtained subtracting flow setpoint to the spiral case flow value.

If error (in absolute value) is greater than a defined dead band, commands are enabled to move the wicket gate. If error is positive and preconditions enable the operation, an order is emitted from PLC to open the wicket gate. When error is negative, the wicket gate is closed. Conditions to operate are evaluated before executing commands. For example, if wicket gate is 100% opened, the PLC order is disabled.

Flow control for Howell Bunger valve

Flows values from 485 cfs to 700 cfs can not be released through the unit turbine and are released through Howell Bunger Valve #3 as stated in OPERATING PLAN. Flows in excess of 700 cfs. (minimum flow of a unit) are released through the Howell Bunger Valve #3 only in case of:

- a shutdown of one or both units or
- one or both units set in "MANUAL" or "OFF" mode'.

Always it is assigned the maximum performance to the enabled unit(s), and the rest of total setpoint is released the HBV#3.

If both units are disabled, then the total setpoint is transferred to HBV #3 flow setpoint.

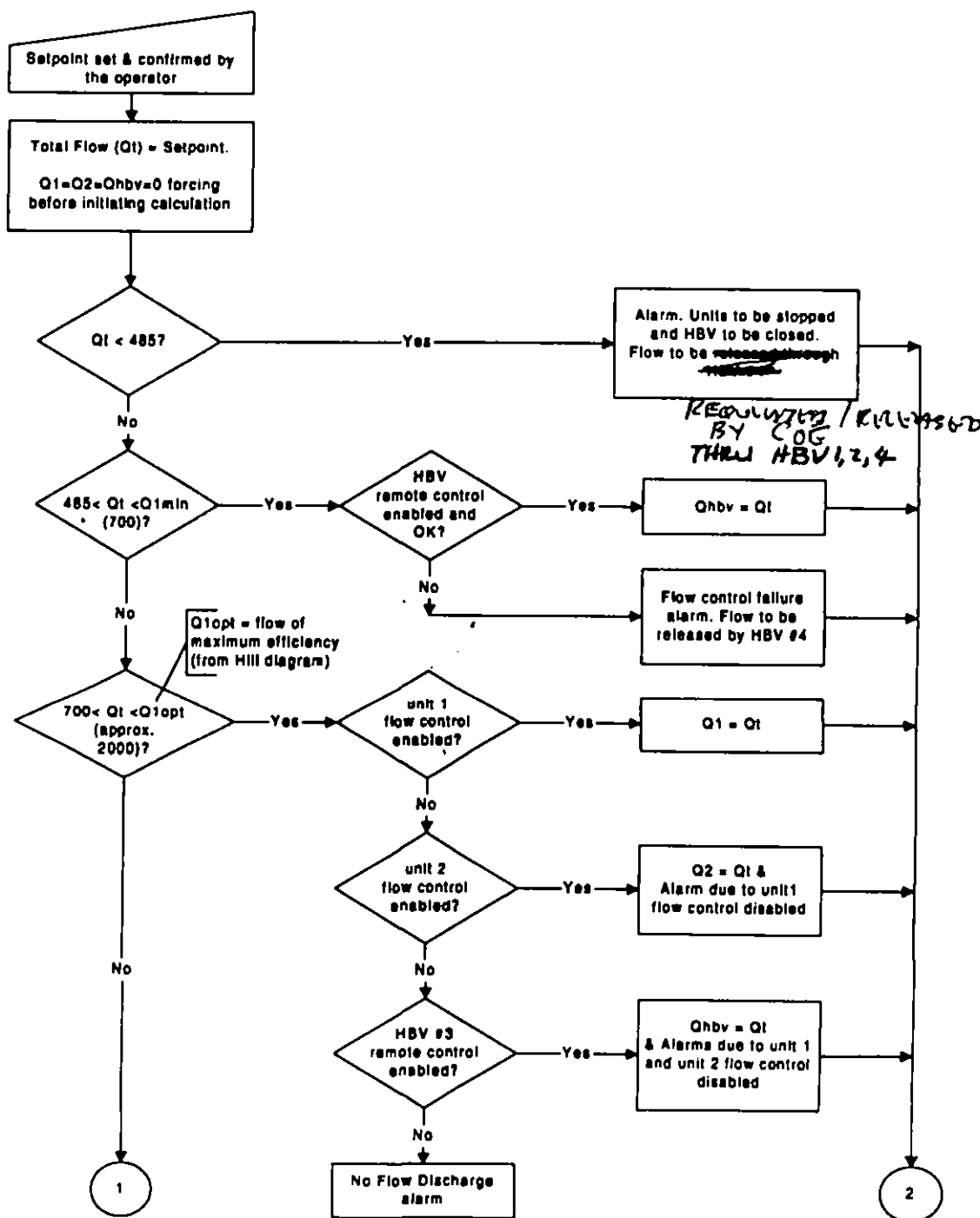
In relation to the other Howell Bunger Valves (#1, #2 & #4), none of them are under PLC control or supervision.

Fix

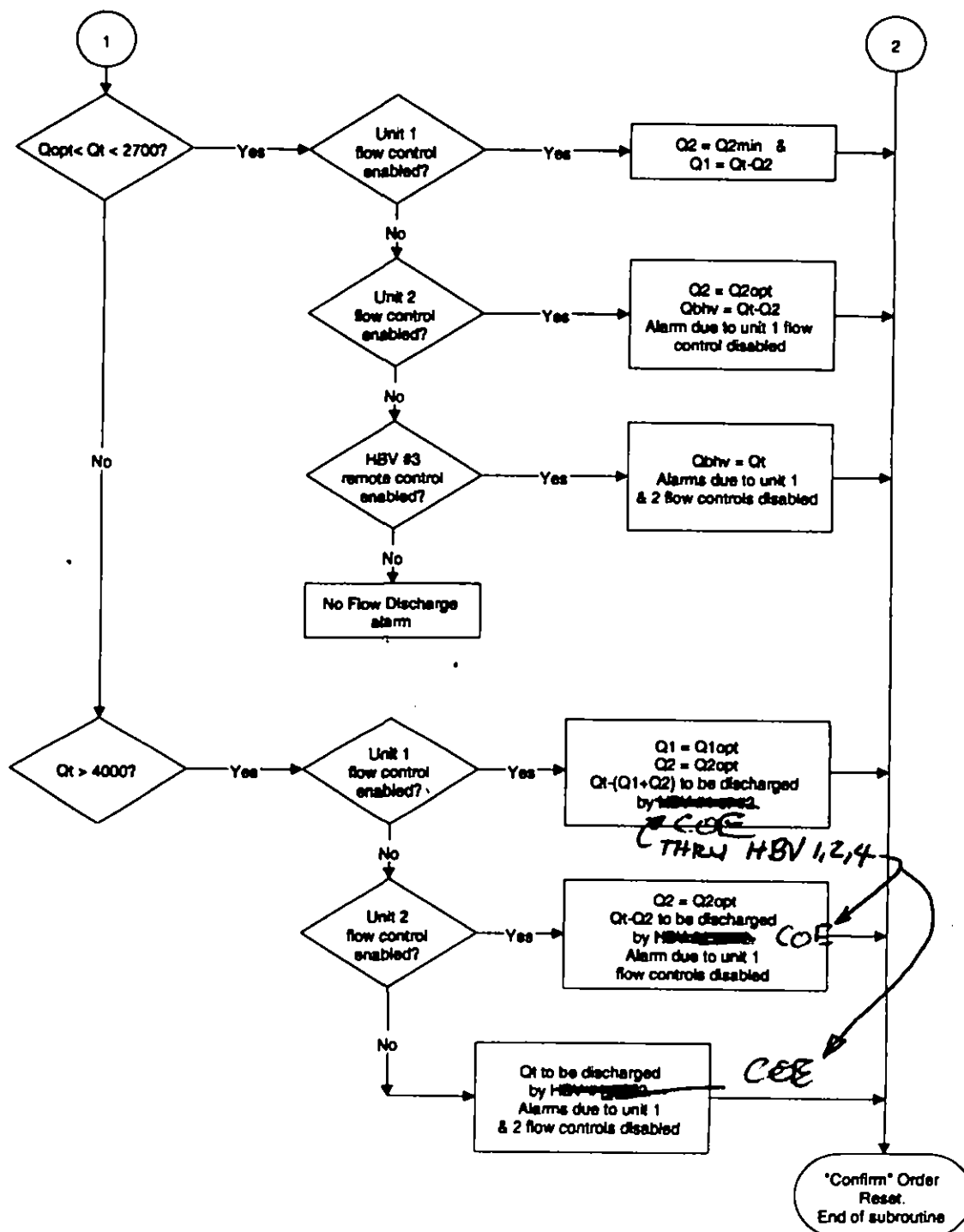
The operator inputs the total water flow desired and PLC logic determines individual setpoint values for unit 1, unit 2 and HBV #3. Only values from 485 to 4000 cfs are allowed (as stated in OPERATING PLAN). When operator clicks on "CONFIRM" screen pushbutton, this pre-setpoint is taken as the total flow control setpoint and sent to PLC.

ies a	SUMMERVILLE HYDROELECTRIC PROJECT DIGITAL CONTROL SYSTEM APPLICATION SOFTWARE TOP LEVEL DESIGN	DWG N°: 4015930	Rev N°: 01
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JOB: A327			
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Flowcharts and diagrams

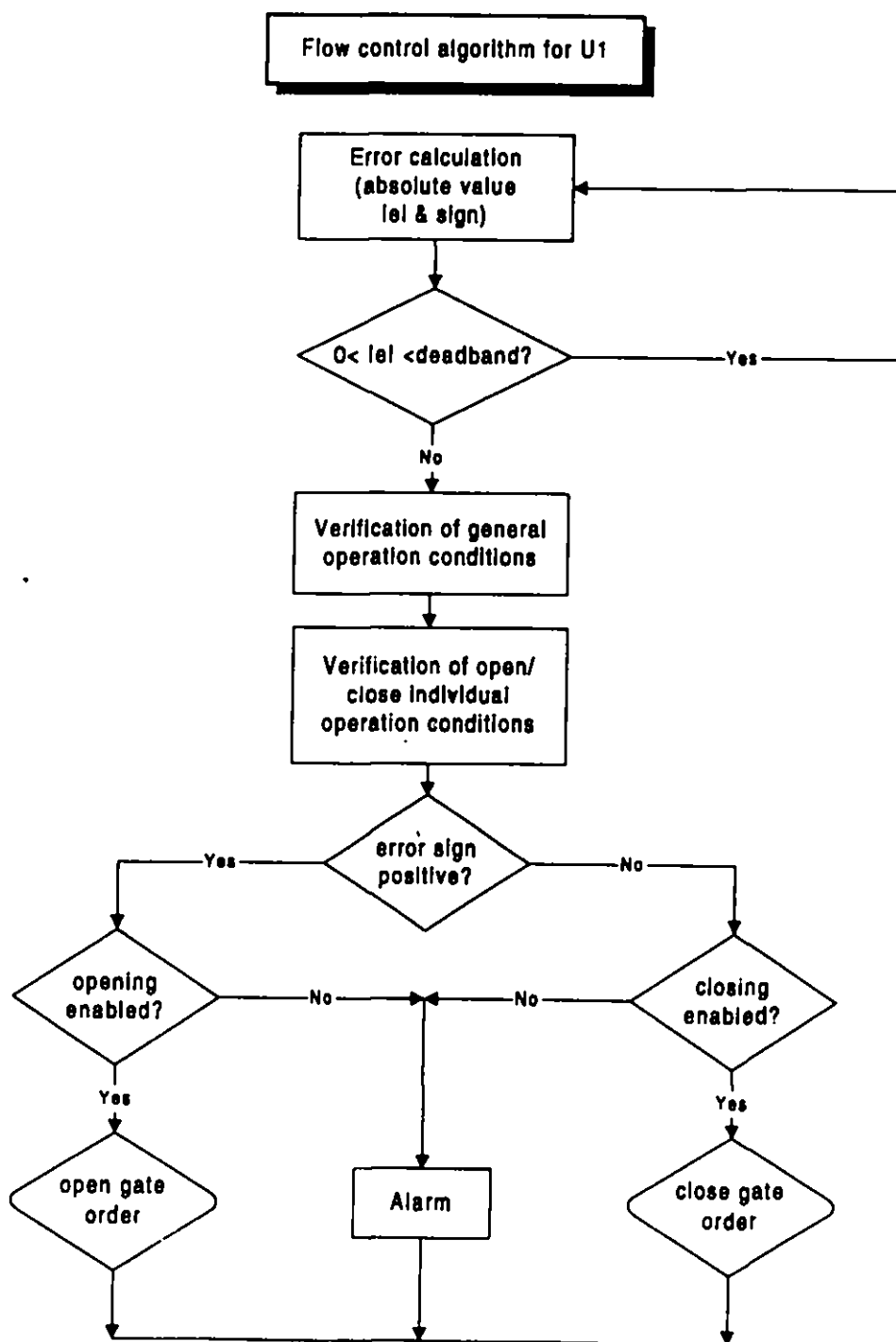


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APPRD. FGA			



IESA	SUMMERVILLE HYDROELECTRIC PROJECT DIGITAL CONTROL SYSTEM APPLICATION SOFTWARE TOP LEVEL DESIGN	DWG N°: 4015930	Rev N°: 01
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Individual water flow control



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APPENDIX C

SUMMERSVILLE HYDROELECTRIC PROJECT GAULEY RIVER POWER PARTNERS CONTACT PERSONNEL

Listed in Order of Contact

Effective Date: _____ Powerhouse Telephone: 304-872-8267

Powerhouse Fax: 304-872-9128

On-duty Powerhouse Operator:

Posted monthly with the COE's Resource Manager at the Summersville Dam's Operation Center by the Plant Manager.

1. Plant Manager (Lead Operator):

Name: Wayne VanDenBurg
Address: 302 Heritage Farm
Summersville, WV 26651
Day Phone: 304-872-8267
Night Phone: 304-872-7183
Fax: 304-872-9128
Pager: 304-254-0234
Cell: 304-663-8968

2. Powerhouse Operator No. 2:

Name: Dennis Ackison
Address: 144 High Street
Fayetteville, WV 25850
Day Phone: 802-872-8267
Night Phone: 304-574-4808
Fax: 304-872-9128
Pager: 304-254-0234

3. GRPP Managing Officer:

Name: Bruce Peacock, Vice President Asset Management
Address: 45 Notch Road
Mendon, VT 05701
Day Phone: 802-747-5393
Night Phone: 802-775-1555
Fax: 802-747-5478
Cell: 802-236-0492

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APPENDIX D

SUMMERSVILLE HYDROELECTRIC PROJECT ARMY CORPS OF ENGINEERS CONTACT PERSONNEL

Listed in Order of Contact

Effective Date: _____

Summersville Dam Operations:
Telephone: 304-872-3412
Fax: 304-872-3401

1. Summersville Dam Resource Manager:

Name: C. J. Hamilton
Address: 101 Ann Street
Summersville, WV 26651
Day Phone: 304-872-3412
Night Phone: 304-842-3171
Fax: 304-872-3401
Pager: N/A

2. Maintenance Leader:

Name: Roger Hypes
Address: Route 129
Drennen, WV
Day Phone: 304-872-3412
Night Phone: 304-872-2372
Fax: 304-872-3401
Pager: N/A

3. Maintenance Mechanic:

Name: Tom Carr
Address: 300 Cliff Side Drive
Summersville, WV 26651
Day Phone: 304-872-3412
Night Phone: 304-872-5896
Fax: 304-872-3401
Pager: N/A

4. Maintenance Worker:

Name: Ted Brown
Address: Route 129
Poe, WV
Day Phone: 304-872-3412
Night Phone: 304-872-5902
Fax: 304-872-3401
Pager: N/A

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5. CoE - Park Ranger:

Name: Mark Benson
Address: House 1
Rocklick, WV
Day Phone: 304-872-3412
Night Phone: 304-469-3962
Fax: 304-872-3401
Pager: N/A

6. CoE - Park Ranger:

Name: Darryl McCallister
Address: 620 Datson Ct, Apt. 30
Summersville, WV 26651
Day Phone: 304-872-3412
Night Phone: 304-872-6324
Fax: 304-872-3401
Pager: N/A

7. CoE - Park Ranger:

Name: Kevin Brown
Address: Vinton Road
Kessler Cross Lanes, WV
Day Phone: 304-872-3412
Night Phone: 304-872-4665
Fax: 304-872-3401
Pager: N/A

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APPENDIX E

MOVEMENT MONITORING PLAN (initial)

(document to be included at a later date)

Appendix 2.1 – Water Quality Certification



STATE OF WEST VIRGINIA
DEPARTMENT OF COMMERCE, LABOR AND ENVIRONMENTAL RESOURCES
DIVISION OF NATURAL RESOURCES

Capitol Complex, Building 3
1900 Kanawha Boulevard, East
Charleston, West Virginia 25305
Telephone (304)348-2754

GASTON CAPERTON
Governor

J. EDWARD HAMRICK III
Director

ANN A. SPANER
Deputy Director

September 18, 1991

Mr. James B. Price
President, Noah Corporation
120 Calumet Court
Aiken, South Carolina 29803

RE: Summersville Dam Hydroelectric
Project, FERC No. 10813,
State 401 Certification.

Dear Mr. Price:

The West Virginia Division of Natural Resources has reviewed the application for license submitted to the Federal Energy Regulatory Commission (FERC) by Noah Corporation and the Town of Summersville for the above-referenced project. In evaluating the application for State 401 Certification, the WVDNR gave careful consideration, pursuant to Section 3.1 of the Division's Regulations for Certification of Activities Requiring Federal Licenses and Permits, Chapter 20, Article 1, Series 5, to the impact of this project on water resources, fish and wildlife, recreation, critical habitats, wetlands, other natural resources and other appropriate requirements of State law .

Our evaluation of the project allows us to grant State Certification pursuant to Section 401 of the Federal Water Pollution Control Act of 1977, as amended, subject to the following conditions. This certification is contingent upon the inclusion of these conditions into the Federal license, if granted.

1. Dissolved Oxygen (DO) -- The Gauley River is a High Quality Stream that is within the National Recreation Area Boundary, and, as such, is designated for water quality purposes as a National Resource Water by the WVDNR. The High Quality and National Resource Water status of the Gauley River invokes the State's Anti-degradation Policy as stipulated in the West Virginia Legislative Rules, Title 46, Series I, Section 4.0 issued pursuant to Chapter

Gauley 401.5.1

97.0190 A8
-state 401

Certification

(4)

20, Article 5A, Code of West Virginia. The State of West Virginia considers National Resource Waters as being of exceptional value and requires stringent water quality management for the protection of their aquatic biota and designated uses.. Section 4.1.g of the Anti-degradation Policy provides for the following.

"In all cases, waters which constitute an outstanding national resource as designated in Section 7.3.d shall be maintained and protected and improved where necessary."
(Emphasis added.)

The Licensee agrees to the following to protect and manage DO of the affected waters.

- A. To comply with Water Quality Standards requirements adopted by West Virginia and pursuant to the Federal Clean Water Act (as amended) and to alleviate potential impacts to water quality and aquatic habitat which would result if low DO concentrations occur in the hydro project discharge, the Licensee will be required to maintain a DO concentration in the tailwaters of 7.0 mg/l. Also the licensee shall operate the project in a manner that maintains DO conditions in the Gauley River upstream of Swiss, WV, equivalent to that existing prior to project operation. To determine pre-project conditions, the following is required of the Licensee. The pre-project condition in the Gauley River, as determined through pre-construction data collections and analyses approved by WVDNR, shall be maintained during the months of June through October.
- B. The Licensee, within 180 days following the issuance of the FERC license, shall submit to WVDNR for approval a plan to determine pre-project DO conditions. The plan shall include a design to continuously measure DO and temperature at a minimum interval of once per half hour on a 24-hour daily basis. To characterize water quality conditions of the reservoir withdrawal water, DO and temperature data shall be collected within the reservoir withdrawal zones (ca. 170-220 feet in depth) or at another location representative of the dam discharge prior to passage through the Howell-Bunger valves. The downstream site should be representative of the tailrace conditions, and its location is subject to the concurrence of WVDNR. Daily stream flow (cubic feet per second) shall also be determined for the Gauley River at the project site. Additional studies shall determine the effect of project operation on the DO concentration in

the Gauley River downstream of Summersville Dam. The duration of the pre-project DO study shall be a minimum of one (1) June-through-October period prior to project operation. The WVDNR reserves authority to approve DO monitoring locations and the right to require an additional season of pre-project data collection should the first season of the study be deemed incomplete, inaccurate or compromised by atypical stream or lake conditions.

Further, the DO plan shall include a detailed description of the following:

- i. methods to measure DO, temperature and flow;
 - ii. site description of DO monitors and flow measurement locations;
 - iii. DO monitoring equipment;
 - iv. DO monitor maintenance and calibration schedule; and
 - v. a schedule and methodology to validate accuracy of the DO monitors.
- C. Following completion of the pre-project study, the Licensee, in cooperation and consultation with WVDNR and using WVDNR approved methodology, shall determine the representative pre-project DO condition for the Gauley River. The pre-project conditions, as determined through data collection and analyses approved by WVDNR, shall be maintained during the months of June through October. Should thorough and adequate data be collected and analyzed which indicates (subject to WVDNR concurrence) that periods within the June through October interval are not representative of the high temperature/low flow characteristics of a critical period, the established June through October critical period or operating conditions may be modified. However, in reviewing data for such a determination, any modification must fully meet and protect the trout water designated use, National Resource Water designation, and appropriate water quality requirements for cold water regimes.
- D. The Licensee shall, 180 days prior to initiating project operation, file with WVDNR an acceptable interim operating plan to maintain the pre-project DO

concentration (June through October) after hydrogeneration is initiated. The plan shall be developed jointly with the WVDNR to ensure compliance with the pre-project operating condition and include plans to effectuate any means necessary to maintain DO, using, at a minimum, partial spill flows through the Howell-Bunger valves, air injection and/or cessation of generation and total diversion of flow to the normal dam release. The DO study should continue for a minimum of two (2) years after operation begins (post-project). This monitoring period will allow for project operation alterations and/or installation of additional aeration mechanisms to adequately maintain DO.

E. Following completion of the two year study, the Licensee shall submit to WVDNR a comprehensive evaluation of the interim operating plan. The evaluation shall include, but not be limited to: a report summarizing data collected; conditions in which the project was unable to maintain DO; frequency, duration, and extent of non-compliance; corrective measures implemented, and effectiveness; and recommended revisions to project operation, and/or additional mitigative measures to be employed to sustain pre-project conditions. Additional mitigative measures should include, but not be limited to, diversion of a percentage of flow to normal dam release, artificial aeration or project shutdown. The revised operating plan shall be placed in effect the first day of June following completion of the interim evaluation.

F. In addition to the above requirements, the Licensee shall maintain the U.S. Army Corps of Engineers' present minimum discharge for the Summersville Dam at all times during construction of the hydroelectric facility.

2. Turbine Entrainment -- The potential for fish mortality as a result of turbine entrainment is a concern. However, since it is felt that no fish survive entrainment due to pressure differences and passage through the Howell-Bunger valves, the WVDNR agrees with the Licensee's recommendation to not perform the passage/mortality studies. In lieu of these studies the Licensee has dedicated additional funds to the yet unspecified recreational enhancement measure(s) as described within the "Recreation" portion (Section 3-C-x) of this memorandum.

3. Recreation -- Construction and operation of the proposed facility will impact Summersville tailwaters and possibly the lake fishery. Anticipated impacts are:

- temporary loss of fishing opportunity due to increased turbidity levels during construction;
- loss of fishing opportunity due to restricted and/or loss of access to the plunge pool and portions of the tailwaters during and after construction;
- loss of fishing opportunity due to the physical presence of the powerhouse and the alteration of the lake's discharge (e.g., plunge pool changes and increased discharge velocities into the river from the powerplant); and
- potential impact to the lake's fish populations due to entrainment mortality.

The Licensee has agreed to the following mitigation, compensation and/or enhancement measures, which are to be implemented in two construction phases. The location and design of all developments in Phase I and Phase II shall be approved by WVDNR prior to installation. Phase I recommendations shall be built or implemented prior to operation of the Summersville Hydroelectric Project. Phase II measures are to be initiated in year 16 of operation. Expenditures for items to be provided in Phase II will be adjusted to reflect their value in 1990 dollars.

The Licensee has agreed to the following measures.

- A. Prior to any construction disturbances (e.g., access road, trails, stepstone bridges), the Licensee shall survey these areas for endangered species and/or coordinate with WVDNR and appropriate federal agencies regarding the location of endangered plants (e.g., Virginia spiraea, Spiraea virginiana) and animals (e.g., Peregrine falcon, Falco peregrinus).
- B. In addition, the Licensee shall be responsible for annual trash pick-up and maintenance of all recreational developments and signs, except where noted. An annual meeting, scheduled by the Licensee, should be held with WVDNR to review maintenance requirements for all recreational facilities.

C. Phase I

- i. The Licensee shall design, erect, and maintain the necessary signs (temporary during construction and permanent after completion) which properly instruct public facility users regarding area rules and safe use of the facilities, and which direct them to parking, fishing areas, restrooms and other ancillary developments. Sign content and location will be subject to approval by WVDNR and, where applicable, the U.S. National Park Service (NPS) and will be designed in accordance with the NPS and/or U.S. Army Corps of Engineers (COE) standards.
- ii. The Licensee shall construct an Administrative access road from the powerhouse area to a location in the vicinity of the emergency spillway. If said access improvements have been completed by another entity or have been eliminated from consideration due to the presence of an endangered species or other reason, the Licensee shall, after securing approval of WVDNR provide other access and/or recreational improvements at a comparable expense, (estimated in 1990 at \$120,000) at a location in the project vicinity chosen by WVDNR. The road access development will be built to the standards of the NPS and will consist primarily of vegetation removal, culvert installation, gate installation, ditching, turnaround construction, regrading and/or rebuilding of the existing roadbed, reseeding of disturbed areas, and establishing and maintaining an all-weather road surface. Additionally, at least three road spurs (at locations chosen by WVDNR and NPS) shall be built to the river utilizing the same construction standards described above. These roads shall provide access primarily for emergency reasons and fish stocking.
- iii. The Licensee shall construct a pathway around the powerhouse to accommodate fisherman access to both the east bank of the river and the existing plunge pool. Said pathway shall be constructed of concrete and/or macadam and

have guard rails. The pathway shall be designed and constructed to facilitate use by handicapped individuals. The location of the pathway shall be on the face of the dam or be part of the access walkway to the powerhouse that is currently planned to provide access to the tailrace for handicapped individuals.

- iv. The Licensee shall design and install two stepstone bridges at strategic locations (chosen by WVDNR and NPS) in the Gauley River between the Summersville Dam and the end of the previously described (Section 3-C-ii) Administrative access road. Said bridges will allow fishermen to cross the Gauley River during suitable low flows (to be determined by WVDNR and NPS). Maintenance of these structures will be performed at the Licensee's expense. The bridges must be examined each spring and fall and repaired (if necessary) prior to the trout stocking seasons. If the NPS does not permit bridge construction, the Licensee shall construct access improvements (at comparable expense) agreeable to NPS and WVDNR.
- v. The Licensee shall design and construct fisherman access at Persinger Creek. This work shall include upgrading approximately 1 mile of road (Nicholas County 5/1), which shall include (but is not limited to) widening, establishment and maintenance of an all weather surface, construction of pull-offs and a turnaround, ditch cleaning, culvert placement and maintenance. The standards utilized must be sufficient to permit passenger car travel. A parking area with trash receptacles shall also be developed at a location agreed to by WVDNR; maintenance and trash pickup shall be performed by the Licensee. Parking area size will be dependent on site availability and projected need.
- vi. The Licensee shall design and construct (or provide funds to WVDNR to design and construct) firebreaks on the Summersville Wildlife Management Area. Maintenance of firebreaks shall be performed by WVDNR.

- vii. The Licensee shall design and construct fishermen access trails on both sides of the river from the dam downstream to the vicinity of the emergency spillway. Work shall include vegetation removal, grading, and placement of gravel on trails (at least three feet wide). Work should be coordinated with NPS and WVDNR to ensure that the location is accurate and the construction is according to NPS standards. In addition, coordination with US Fish and Wildlife Service (FWS) and WVDNR may be necessary to avoid impacts to federally endangered species.
- viii. The Licensee shall design and construct a boating access to the Gauley River in the Summersville tailwater at the nearest possible location to the powerhouse. This facility shall replace the existing tailwater launch area.
- ix. The Licensee shall procure (or construct) and install, to WVDNR specifications, fish attractant structures in three areas of Summersville Lake. The maintenance of these structures shall be performed by WVDNR.
- x. The Licensee shall provide the WVDNR \$75,000 to construct unspecified recreational enhancement measures (e.g., a fish cleaning facility) within the immediate project vicinity. The Licensee shall maintain this development(s) and provide trash pick-up.
- xi. The Licensee shall design, construct, and make available, for 365 days each year, modern sanitary facilities in the vicinity of the main parking area at the tailwaters (or alternatively, operate and maintain the COE's existing toilet facilities located at the northwestern end of the parking area). If new facilities area built, the Licensee shall coordinate this activity with the NPS.
- xii. The Licensee shall annually provide the WVDNR \$25,000 to be dedicated to management of fish

and wildlife resources in the project vicinity. These funds shall be adjusted upwardly by 4.5% annually to account for inflation.

D. Phase II (Year 16)

- i. The Licensee shall provide an additional \$70,000 (in 1990 dollars) to WVDNR for management of fish and wildlife resources in the project vicinity. This funding will be added to the adjusted Phase I annual appropriation, and the total appropriation will thereafter be upwardly adjusted by 4.5% annually for the remainder of the license period to account for inflation.
- ii. The Licensee shall design and construct a boat launch facility in the Muddlety Creek arm of Summersville Lake (\$250,000 in 1990 dollars). This facility's primary construction features will include (but shall not be limited to): 1) vegetative clearing; 2) upgrading and surfacing the existing grade; 3) conventional bridging (above water) of a small stream; 4) installation of a concrete launch ramp; 5) parking lot construction; and 6) development of sanitary facilities, drinking water, lighting and a fish cleaning structure. Operation, maintenance and trash pick-up shall be performed by the Licensee.
- iii. The Licensee shall design and construct, or provide funds to design and construct a residence and storage building (combined cost of \$100,000 in 1990 dollars) to be located on COE lands. The design shall be approved by the WVDNR. The WVDNR will assume the operation and maintenance of this structure after construction.
- iv. The Licensee shall provide the necessary funds (\$250,000 in 1990 dollars) to complete unspecified improvements to an existing WVDNR hatchery. Said improvements will increase hatchery production to provide increased stocking allotments for the Summersville Lake tailwaters. Operation and maintenance of said improvements will be assumed by WVDNR.

- v. The Licensee shall provide the WVDNR funds necessary (\$40,000 in 1990 dollars) to purchase certain equipment to be utilized in fishery and game management programs (e.g., hatchery truck, farm tractor, boat, and outboard motor). Operation and maintenance responsibility of said equipment will be assumed by the WVDNR.

4. Soil Erosion, Spoil Disposal and Transmission Line Development Plans -- Turbidity resulting from construction and spoil disposal can have negative impacts to fish and wildlife resources in the short and long-term future. Poor reclamation can also affect the aesthetics of this highly visited recreation area. To avoid such impacts, the Licensee has agreed to the following.

- A. Within 60 days of issuance of the FERC license, the Licensee shall submit to the WVDNR for approval, a sediment and erosion control plan for the conceptual design of the hydroelectric project. A detailed plan shall include measures to control surface runoff from all disturbed areas and to minimize sediment contributed to the Gauley River during instream work. The use of instream settling ponds will be unacceptable. Further, the plan should include a discussion of the revegetation plan for the transmission line, spoil disposal site, and facility site.
- B. A minimum of 180 days prior to initiation of any project construction activities, the Licensee shall submit to the WVDNR a site specific comprehensive sediment and erosion control plan for the final engineering design of the hydroelectric facility. The plan shall include detailed descriptions of the following items.
 - i. The actual site conditions.
 - ii. The control measures which include the description of each measure, the topographic map locations, and the functional design drawings.
 - iii. A revegetation plan for disturbed areas, which stipulates the seeding/planting rate, seed mixture, plant species, and wildlife value; the disturbed areas shall include (but not be limited to) the spoil disposal site, transmission line right-of-way, and facility site.

- iv. The implementation schedule for installation of the control measures and initiation of revegetation work.
 - v. A comprehensive monitoring and maintenance program of control measures and revegetation during and after construction as well as after operation.
 - vi. A periodic review schedule to ensure proper installation and operation of control measures and success of revegetation.
 - vii. A procedure to initiate immediate corrective action in circumstances of unsuccessful use of control measures or failure of revegetation.
- C. The Licensee shall obtain permits for all instream construction activities from the Public Land Corporation of the WVDNR.
- D. The Licensee shall provide habitat based mitigation for impacts to terrestrial and aquatic habitats resulting from spoil disposal if deemed necessary by the WVDNR. The Licensee shall perform right-of-way maintenance to the transmission line route mechanically rather than by the use of herbicides.

There shall be no initiation of construction activities until a site specific sediment and erosion control plan is received and approved by the WVDNR. The Licensee shall be subject to enforcement action should turbidity or any other applicable West Virginia State water quality standard be violated as a result of any previous or on-going project related activities.

5. Plant Operation Mode -- The WVDNR contends that any alteration of the current lake discharges will have detrimental impacts on fish and wildlife and public hunting and fishing opportunities in the lake and tailwaters. Hence, the Licensee agrees to the following to alleviate this concern.

- A. The Licensee shall operate the power plant pursuant to the present (1991) COE discharge schedule.
- B. Any alteration to this release scheme must be approved by the COE and WVDNR.

6. Endangered Species -- Until recently, the occurrence of endangered species were not known in the project area. However,

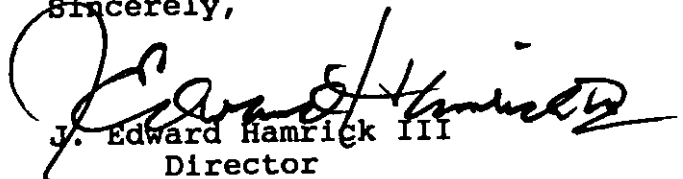
Mr. James B. Price
Page 12
September 18, 1991

Virginia spiraea (Spiraea virginiana), has been listed pursuant to the Endangered Species Act of 1973 as a federally threatened species. This species is known to occur within the Gauley River floodplain within the project reach. To protect and manage this species, the Licensee agrees to the following measures.

The Licensee shall review existing information and/or collect new data regarding Virginia spiraea, Spiraea virginiana, and prepare a report summarizing its distribution and abundance in the project area. The impacts of project construction or operation, which shall include mitigation/enhancement measures, shall be evaluated in said report. Once completed, a meeting with the WVDNR, COE, NPS, and U.S. Fish and Wildlife Service shall be held to discuss whether the Licensee shall modify construction or operational plans to comply with agreed measures necessary to protect S. virginiana.

This certification shall become effective 15 days after receipt unless appealed pursuant to Section 8.1 of the aforementioned Division's Regulations for State Certification of Activities Requiring Federal Licenses and Permits.

Sincerely,


J. Edward Hamrick III
Director

JEH/fps

cc: Town of Summersville
Federal Energy Regulatory Commission
U.S. Army Corps of Engineers (Hunt. Dist.)
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service
WVDNR-Water Resources Section
WVDNR-Wildlife Resources Section
WVDNR-Office of Real Estate Management
WVDNR-Office of Environmental
and Regulatory Affairs

Appendix 2.2 – Water Quality Certification Amendment (1997)

FILED
OFFICE OF THE SECRETARY
97 OCT 27 PM 3:37



ORIGINAL

CECIL H. UNDERWOOD
GOVERNOR

FEDERAL
REGULATORY
COMMISSION

DIVISION OF ENVIRONMENTAL PROTECTION
1201 Greenbrier Street
Charleston, WV 25311-1088

JOHN E. CAFFEY
DIRECTOR

October 17, 1997

Mr. James B. Price
Noah Corporation
120 Calumet Court
Aiken, South Carolina 29803

Dear Mr. Price:

The West Virginia Division of Environmental Protection (WVDEP), with the concurrence of the West Virginia Division of Natural Resources (WVDNR), has reviewed your letter where you explained the reason you wanted the State Certification (originally issued September 18, 1991) amended for the Summersville Hydroelectric Project, FERC Project No. 10813. You stated there are constraints caused by the National Park Service's Gauley River Management Plan and that you will not be able to construct the angler access trails and the administrative access road.

Due to these unforeseen circumstances, the following are amended:

1. 3. Recreation; Phase I; ii - This entire condition should be deleted.
2. 3. Recreation; Phase I; vii - This entire condition should be deleted.
3. 3. Recreation; Phase II, ii - This condition should be moved to Phase I.

This is to advise that all other amendments that have not been amended by the WVDEP, now or previously, are still in force and must be followed.

Sincerely,

OFFICE OF WATER RESOURCES


Barbara S. Taylor, Chief

BST/sas

9710290348-3

FERC - DOCKETED

OCT 27 1997

Appendix 2.3 – Approval of DO Monitoring Plan

76 FERC ¶ 62,228

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

City of Summersville, West Virginia) Project No. 10813-017

ORDER MODIFYING AND APPROVING
DISSOLVED OXYGEN MONITORING PLAN

SEP 25 1996

On July 15, 1996, The City of Summersville, West Virginia (licensee), filed for Commission approval, a dissolved oxygen monitoring plan for the Summersville Project. This plan is required by Article 404 of the project's license.^{1/} The Summersville Project is located on the Gauley River, in Nicholas County, West Virginia.

LICENSE REQUIREMENT

Article 404 of the license requires the licensee, at all times, to maintain a minimum dissolved oxygen (DO) concentration of at least 7.0 milligrams per liter (mg/l) in the Gauley River as measured immediately downstream of the project tailrace.

Article 404 also requires the licensee to prepare a plan to install, operate, and maintain permanent, continuously recording water temperature and DO monitoring devices to monitor DO concentrations and water temperature in the project tailrace. The plan, as required by Article 404, must include: (1) a detailed description of the methods for monitoring DO concentrations and water temperature levels, and the locations at which DO and temperature will be monitored; (2) a proposal whereby project operation could be rapidly altered to ensure maintenance of at least 7.0 mg/l, including project shutdown; and (3) a schedule for implementing the monitoring plan and for filing water quality records with the Commission and the consulted agencies.

Article 404 requires the licensee to prepare the monitoring plan after consultation with the U.S. Corps of Engineers (COE), the U.S. Fish and Wildlife Service (USFWS), and the West Virginia Division of Natural Resources (WVDNR). Further, Article 404 states that the Commission reserves the right to require changes to the plan. No land-clearing or land-disturbing activities shall begin until the licensee is notified that the plan is approved. Upon Commission approval, the licensee must implement the plan, including any changes required by the Commission.

1/ See Order Issuing License issued September 25, 1992, 60 FERC ¶ 61,291.

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LICENSEE'S PROPOSED PLAN

The licensee states that flow releases for Summersville Lake have been, and will continue to be, dictated by COE for flood control in the Gauley River Basin. The licensee also states that at the present time water withdrawn from Summersville Lake is discharged through up to four Howell-Bunger valves (HBV) to the Gauley River. The HBV's aerate releases, creating oxygen rich conditions in the Gauley River downstream from the dam.

The water quality certification issued by WVDNR requires that the licensee (1) maintain a DO concentration of 7.0 mg/l, (2) prepare a plan for determining pre-project DO concentrations (Phase 1), and (3) prepare an operational plan that includes water quality monitoring for the first two years of project operation (Phase 2).

The licensee's July 15, 1996 filing described, in detail, the actions that would be taken to comply with the project's Section 401 water quality certification, and to meet the three conditions of Article 404.

Phase 1 Study - Existing Water Quality Conditions

The licensee states that the information collected from this phase will establish baseline water quality conditions in the project impoundment, in the tailwater area, and downstream from the project. Phase 1 monitoring would consist of collecting data for two years during the period of lake stratification; sampling would occur from June through October. The licensee proposes to monitor DO and water temperature.

Monitoring Locations

The licensee plans to establish Station 1 at the point of withdrawal in the impoundment. Specifically, a continuous monitoring device will be connected to one penstock upstream of the HBV, which will be designed to test water quality prior to the water exiting the HBV. At Station 1, the licensee indicates that a pressure reducing valve and flow regulator will be outfitted to the existing penstock, with the monitoring device located in the control house on top of the valve outlet structure. The monitoring device will be contained in an air-tight stilling chamber, and will record water quality parameters prior to the water discharging into a drain. The stilling chamber will be placed in line after water has passed through the reducing valve and flow regulator.

The licensee proposes to install Station 2 at an existing U.S. Geological Survey (USGS) gaging station (#03189600), which is located about 1,750 feet downstream from the Summersville

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dam.^{2/} Water withdrawn from the Gauley River will be supplied to the monitoring instruments by a pumping system, which the licensee believes will not appreciably alter the DO or temperature of the water. Total streamflow will be measured at the USGS gaging station, and the data obtained from the USGS.

The licensee proposes to establish Station 3, the downstream monitoring station, in an area approximately ten miles downstream from the Summersville dam.

Monitoring Equipment

The licensee states that water quality information and temperature data will be collected using recorder multiprobe loggers.^{3/} The licensee further states that these recorders are designed for remote, unattended data collection, and will be set to collect data once per half hour on a 24-hour basis. The monitoring probes will be equipped with extended memory capable of continuous recording in excess of 30 days.

Instrument Calibration

The licensee states that prior to deploying the instruments, the dataloggers will be calibrated to the manufacturer's specifications. To ensure data integrity and document instrument drift, calibrations and inspections will be performed every 30 days during the process of downloading data from the recorders. The licensee indicates that field calibrations will be performed according to EPA-approved, and manufacturer-suggested, methods. The licensee also states that pertinent information such as calibration time, atmospheric pressure, air temperature, and deviation results will be documented and be available for inspection by USFWS, WVDNR, and the West Virginia Division of Environmental Protection (WVDEP).

Should field calibration be necessary, the licensee states that the unit(s) will be field serviced, including, but not limited to, cleaning, replacement of sensor membranes, and instrument recalibration. All deviations from sampling protocol, due to instrument malfunction will be documented, as well as, all corrective actions taken to rectify those problems. Upon conclusion of Phase 1 annual monitoring, the licensee states that

2/ Based on 1991 sampling data, the licensee states that the data collected at this station should be representative of the conditions in the tailrace.

3/ Recorder multiprobe loggers are designed and conform to EPA (Environmental Protection Agency) approved methods for measuring water quality.

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all monitors will be returned to the lab and post calibrations performed; results would be documented.

Data Acquisition

The licensee states that data will be downloaded every 30 days from the dataloggers using a portable laptop computer. The data will be downloaded in ASCII file format, and include time stamps, temperature (°C), and DO (mg/l). All data files will be assigned unique filenames in order to track collection date and sampling location. Furthermore, permanent records of the raw data will be maintained.

Data Reporting

The licensee proposes to summarize the raw data to determine DO in the tailwater and the river as a function of temperature and streamflow. Upon completing the data analysis in the fall of 1997, the licensee indicates that a draft report will be compiled and distributed for comment. A final report will be submitted to USFWS, COE, the Commission, WVDNR, and WVDEP after receiving comments on the draft. The licensee states that the report will include a description of evaluation methods used, results, and agency correspondence; all raw data will also be included.

Phase 2 - Water Quality Monitoring during Station Operation

The licensee proposes to prepare an Interim Operating Plan (IOP) for the first two years of project operation. The purpose of the IOP is to evaluate, test, and implement measures to maintain a DO concentration of 7.0 mg/l in the Gauley River from June through October. During the initial two years of operation, the licensee proposes to monitor DO and test reaeration options to mitigate impacts of turbine operation.

Interim Operating Plan

Between June through October, when flows are sufficient for power generation [800 cubic feet per second (cfs) to 4,000 cfs], the licensee proposes to monitor DO and alter project operations as needed to maintain required DO levels.^{4/} During the two-year IOP period, the licensee proposes to evaluate several mechanisms to determine the most efficient and effective reaeration method to maintain DO levels. The alternatives to be evaluated include, but are not limited to: (a) partial or total discharge through

^{4/} The proposed turbines would have a discharge capacity of about 800 cfs to 4,000 cfs. When flows fall below the hydraulic capacity of 800 cfs the turbines would be shutdown and flows released from the HBVs. Flows in excess of 4,000 cfs would also be released through the HBVs.

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the HBVs; (b) oxygen/air injection in the tailrace or intake; and (c) turbine aspiration/venting.

The licensee states that Phase 1 data will be used to determine the amount of DO that must be added to maintain a concentration of 7.0 mg/l. The licensee then plans to estimate the amount of DO that could be added by each of the evaluation alternatives. Based on the results of this evaluation, the licensee will operate the project to test various combinations of aeration methods.

Monitoring Procedures

During the IOP period, the licensee proposes to monitor DO conditions using Stations 2 and 3. The licensee states that maintenance and calibration of the equipment will follow the same procedures outlined in the Phase 1 study. The licensee also states that DO monitoring at Station 2 will be transmitted to a Programmable Logic Computer (PLC) installed at the powerhouse, which will be used to monitor DO, flow, and turbine operation.

Initial Operation from June through October

The licensee states that if DO levels remain at or above 7.0 mg/l, project operation will continue without enhancement. When DO levels fall below 7.0 mg/l for one hour, the licensee proposes to operate the project for the following eight hours using one, or a combination of, reaeration techniques. The licensee states that if DO is raised to 7.0 mg/l or better within the eight hours, the project will continue to operate with the DO enhancement measure in place, and DO conditions monitored.

If at the end of the eight-hour period, DO levels remain below 7.0 mg/l, the licensee states that generation will cease and all flow will be diverted through the HBV(s). For public safety reasons, the licensee indicates that there will be a 15-minute lag between turbine shutdown and the time the HBV(s) begin discharging. The licensee also states that, during the first two years, when DO of 7.0 mg/l is not being met from June through October, the project will be operated for eight out of every 24 hours. The licensee plans to use the eight hour period to evaluate alternative DO enhancement measures at the project.

Final Operating Plan

Four months after completing the first two years of operation, the licensee proposes to prepare a comprehensive report describing the methods, results, and conclusions of the IOP study. The report would be submitted to USFWS, COE, WVDNR, and the Commission for review and approval. The licensee states that the information contained in the report will include, at a minimum: (a) all water quality data collected; (b) conditions

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during which DO was less than 7.0 mg/l; (c) frequency, duration, and extent of low DO events; (d) aeration techniques and operational modes evaluated; and (e) the effects on DO of the various DO enhancement measures evaluated. The licensee also states that the report will include a detailed description of the proposed aeration technique(s) or operational procedures that would become part of the permanent final operation plan for the project.

Upon acceptance of the final operating plan by the Commission, USFWS, and WVDNR, the licensee states that the final plan will be incorporated into the project's permanent operation. As part of the final plan, the licensee proposes to continue monitoring water quality at Station 2, and submit to USFWS, WVDNR, and the Commission, by December 15 of each year, a report on the monitoring activities. According to the licensee, the report would include: (a) all water quality data collected; (b) tables and figures summarizing the data; and (c) the specific events where DO did not meet the requirement of 7.0 mg/l, including frequency and duration of occurrences and reason for not meeting compliance.

AGENCY COMMENTS

By letter dated May 16, 1996, the licensee provided USFWS, COE, WVDNR, and WVDEP, a draft copy of the water quality monitoring plan for their review and comment. By letters dated May 22, 1996, June 20, 1996, and July 1, 1996, WVDNR, USFWS, and COE, respectively, responded to the licensee's request for comments. No comments were received from WVDEP.

The WVDNR, in reviewing the information provided in the draft plan, found the plan acceptable, and had no other comments.

The USFWS stated that the basic components required by the Commission's license were included in the plan. The USFWS also stated that, upon completion of Phase 2 of the study, it would provide additional comments on the final operating plan when the plan becomes available. The USFWS requested that it be included in the list of agencies able to request inspection of the calibration information, and that the licensee should submit the annual report on water quality monitoring to USFWS.

The USFWS expressed concern over the location of Station 3. Specifically, USFWS states that in order to determine the length of river affected by depressed DO levels (i.e., below 7.0 mg/l), Station 3 should be moved upstream to a point that would be six miles below the USGS gaging station, at the mouth of the Meadow River, a tributary of the Gauley River. The USFWS states that the new sampling location should indicate where aquatic resources are affected by reduced DO levels.

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The COE commented on two aspects of the licensee proposed water quality monitoring plan, including the design and location of the monitoring stations, and the calibration and maintenance of the monitoring probes.

The COE states that the reducing valve and flow regulator proposed by the licensee at Station 1 would physically change the conditions of the water. However, COE states that these changes can be compensated by keeping the pressure in the flow cell nearly constant. At Stations 2 and 3, COE states that pumping could result in various problems, depending upon where the pumps are located and the type of pumps used.^{5/} Therefore, COE believes that the monitoring probes used at Stations 2 and 3 should be placed in the river.

With regards to calibration and maintenance, COE recommends that, at a minimum, a fourth datasonde probe be purchased as a backup. The COE states that the backup probe(s) could be used to avoid data loss while a primary probe is being serviced. The COE also states that 30 days is a long time between service. While the datasonde probes are capable of operating for this time frame, probe fouling may become a problem. Should this become an issue, COE believes that a maintenance schedule of two weeks may be needed.

LICENSEE'S RESPONSE TO AGENCY COMMENTS

In letters dated July 11, 1996, the licensee responded to USFWS's and COE's comments.

The licensee's July 15, 1996 filing incorporated USFWS's concerns regarding submittal of the annual water quality report, and the agency's access to calibration information. Further, the licensee's July 15 filing also addressed USFWS's concerns regarding the location of Station 3.^{6/} As characterized by the

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- 5/ Should the pump at Station 2 be located in the gaging station, water would be lifted to the flow cell, which would create a partial vacuum on the water. If the pump is placed below the gaging station, water would be pushed to the flow cell causing problems with pressure changes. Because the proposed monitoring plan does identify what type of pumps would be used, COE speculates that peristaltic pumps would likely be used. Peristaltic pumps are pulse pumps, which could create pressure problems in the flow cells.
- 6/ The licensee discussed the location of Station 3 with USFWS subsequent to receiving USFWS's comments on the draft plan. The proposed location is not USFWS's preferred location, but discussions between the licensee and USFWS resulted in USFWS mutually agreeing to the use of the site.

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licensee, the location proposed in the plan filed on July 15 provides better access and security than the location recommended by USFWS. The licensee also states that the proposed site for Station 3 would also eliminate any potential influences from Meadow Creek, and would better characterize conditions in the Gauley River.

In the licensee's July 11 letter to COE, the licensee addressed all of COE's concerns. The licensee concedes that the pressure reducing valve and flow regulator would alter the properties of the water. However, the licensee believes the effects would result in slightly lower DO readings. The licensee believes that the lower readings would err on the conservative side for establishing baseline conditions. The licensee states that, if necessary, an algorithm can be developed and applied to the data to correct for the pressure changes.

The licensee states that the data obtained from Station 1 will be used to determine baseline conditions, as well as in the design of the project's aeration system. The licensee also states that Station 2, not Station 1, will be used to monitor the project's compliance with Article 404.

The licensee also concedes that the proposed use of a pump at Station 2 could alter DO slightly. The licensee, however, states that the pumping system could reduce DO by 0.1 mg/l, which the licensee believes is insignificant when compared to errors that may occur during the equipment calibration process. As would be case for Station 1, lower DO readings at Station 2 would err on the conservative side.

The licensee states that the monitoring devices used at Stations 2 and 3 will be placed directly in the Gauley River. However, the licensee indicates that the monitoring unit at Station 2 will be permanently located in the USGS gaging station for long-term monitoring after the first year.

Concerning calibration and maintenance, the licensee states that the units will be in service for five months from June through October. When not in use, the licensee believes that if stored and maintained properly, the units should not require extensive factory servicing. The licensee also states that Station 3 will be discontinued after implementing the final operating plan, and that Station 3's monitoring unit could serve as a backup. Should it appear that the monitoring units require more factory service than anticipated, the licensee states that additional units could be purchased at that time.

The licensee acknowledges that probe fouling would provide erroneous readings. As part of the initial setup of the stations, the licensee states that field maintenance and calibration procedures, which would be implemented by the field

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technicians, will be developed. The procedures include the weekly inspection of the units during the first month of collections, and subsequent adjustments to the maintenance schedule as conditions warrant. The licensee also states that, while a 30-day maintenance schedule is the goal, a one- or two-week schedule will be implemented if data integrity appears to be compromised.

DISCUSSION AND CONCLUSIONS

The Commission prepared an environmental assessment (EA) for the Summersville Project in order to analyze the effects associated with operating the project.^{2/} In the EA, Commission staff stated that the present release of flows through the HBVs results in near-saturated to super-saturated DO concentrations in the Gauley River. The EA concluded that because operation of the proposed hydropower facility would divert most of the river flow through the project turbines, releases from the HBVs would be reduced or frequently eliminated, thereby resulting in commensurate losses in aeration at the project dam.

Article 404 required the licensee to (1) maintain a DO concentration of 7.0 mg/l downstream from the project, and (2) file, for Commission approval, a plan to monitor DO and water temperature in the project's tailrace in order to ensure compliance with the State's DO and temperature standards. The licensee's plan, filed with the Commission on July 15, 1996, fulfills the requirements of Article 404.

During the consultation period, USFWS and COE provided the licensee with various editorial and substantive comments concerning the required plan. The discussion below pertains to COE's comments that the licensee responded to in its July 11 letter to COE.

Monitoring Stations

The COE suggested that the pressure reducing valve and flow regulator proposed for use at Station 1 would physically change the conditions of the water.

The licensee's proposed design includes installing a Datasonde Probe to measure water quality at the intake. These probes are, to some degree, sensitive to pressure changes, and therefore, may yield inaccurate readings. However, problems of this nature can be reduced or eliminated by maintaining a nearly constant pressure in the flow cell. The licensee's proposal to install the monitoring probe at Station 1 in a stilling chamber

^{2/} The final EA was made a part of the license issued September 25, 1992.

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should reduce any effects of pressure changes, but is not likely to eliminate the problem.

As noted by the licensee, the impact of pressure changes in the system would result in DO readings being slightly lower than normal. This would, in effect, result in a conservative bias in the DO readings used to characterize baseline conditions. Nevertheless, should it become necessary, the licensee agreed to develop an algorithm that would be applied to the DO data to compensate for any pressure changes that may occur.

If the licensee's monitoring data shows a minor effect on DO readings from pressure changes, then there would be no need to develop an algorithm to compensate for such changes. However, if it appears that pressure changes in the system significantly affect the monitoring probes DO readings, then the licensee should develop and use the algorithm as proposed.

The COE expressed concern over the exact location of the monitoring probes at Stations 2 and 3, and the potential use of peristaltic pumps at these two stations.

The use of pumps to transport water from its withdrawal point to the monitoring probe would affect the chemical properties of the water. The licensee estimates that a pumping system could produce a 0.1 mg/l reduction in DO. As noted by the licensee, this reduction would likely be insignificant when compared to the biased DO readings that could occur during the equipment calibration process. Furthermore, while minor reductions in DO levels may occur, lower DO readings at Station 2, which is the primary station for monitoring compliance with Article 404, would err on the conservative side. Thus, where it concerns the level of reaeration that may be needed, more oxygen would be added to the water than would actually be required.

The licensee states that, because of time constraints in obtaining the necessary equipment and approvals, the monitoring probe at Station 2 will be located in the river for the first year of data collection. After the first year, the licensee proposes to move the monitoring probe inside the USGS gaging station. At Station 3, the licensee is proposing to place the monitoring probe directly in the river.

Locating the monitoring probes at Stations 2 and Station 3 directly in the river would eliminate the potential problems associated with using the peristaltic pumps, and thereby provide relatively unbiased DO data. However, because Station 2 will be used to permanently monitor compliance with Article 404, access and security become an important consideration over the long term. Moving the monitoring probe at Station 2 to inside the USGS gaging station would provide a secure location, and reduce any problems with tampering and vandalism.

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Therefore, during the first year of data collection, the licensee should place the Station 2 monitoring probe directly in the river, after which time, the probe should be permanently moved to inside the USGS gaging station (#03189600) for long-term monitoring. Also, the licensee should place the monitoring probe at Station 3 directly in the river.

Calibration and Maintenance

The COE suggests that a fourth probe be purchased, and be used as a backup. The COE is concerned that the primary probes may require factory service over the four-year study period, and that data would be lost while the probe(s) is being serviced.

The licensee plans to use the monitoring probes for approximately five months out of the year. This limited service time, coupled with proper storage and maintenance during the off season, should preclude the need for extensive factory service.

Furthermore, additional backup probes should not be purchased unless conditions warrant. The licensee's proposal to purchase additional units in the future, if warranted, is reasonable. Therefore, the licensee's proposed plan, which requires the use of three probes, is adequate at this time. If it appears that the units require considerably more factory service than expected, then, the licensee, as proposed, should purchase the needed additional units at that time.

Finally, COE expressed a concern about the licensee's service schedule. The COE states that probe fouling is a common problem, and that 30 days may be too long between services.

One of the more common problems associated with continuous DO monitoring is fouling of the gas-permeable membrane used on most sensors (Aquatic Systems Engineering, 1990).^{8/} Probe fouling reduces oxygen migration through the membrane, resulting in drift and increasing the frequency of site visits for maintenance.

The licensee concedes that probe fouling would result in inaccurate DO readings, but argues that the proposed field maintenance and calibration procedures should be sufficient to maintain data integrity. As proposed, these procedures would include weekly inspections during the first month of operation, with adjustments made thereafter, if conditions warrant.

^{8/} Aquatic Systems Engineering. 1990. Assessment and guide for meeting dissolved oxygen water quality standards for hydroelectric plant discharges. Electric Power Research Institute, Report GS-7001, Palo Alto, California. November 1990. 449 pp + appendices.

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The probe proposed to be used by the licensee has a stability rating of 30 days. However, field experience (Aquatic Systems Engineering, 1990) suggests that 30 days may be too long between services. Users of this type of probe cite a one- to three-week service schedule. While the licensee's proposed maintenance and calibration schedule conforms to the probe's specifications, it may not be adequate to prevent erroneous data resulting from probe fouling.

The licensee's maintenance and calibration schedule should be sufficient to monitor data integrity at this time. However, if at any time during the monitoring period it appears that DO data integrity is compromised by the 30-day service schedule, the service schedule should be modified, as appropriate, so as to minimize the reporting of erroneous DO data. The licensee should adjust the schedule in consultation with COE, USFWS, and WVDNR. Should the maintenance and calibration schedule be adjusted, the licensee should notify the Commission within 10 days of such changes, and include what conditions prompted the adjustment in the schedule.

Data Reporting Schedule

The licensee's proposed DO monitoring plan included a schedule for filing (1) the methods, results, and agency correspondence of Phase 1 monitoring; and (2) methods, results, conclusions, and agency correspondence of the Phase 2 monitoring. Based on the licensee's proposed schedule, Phase 1 monitoring would be completed by the fall of 1997, and the licensee's evaluation of Phase 2 monitoring results would be completed four months after completing the first two years of operation.

The licensee, by January 15, 1998, should file with the Commission a report concerning the Phase 1 DO monitoring results. This report should include a description of the evaluation methods used, results of the monitoring, and any relevant agency correspondence. Also, within four months of completing the first two years of commercial operation, the licensee should file with the Commission, for approval, a report on the Phase 2 monitoring, including comments of the COE, USFWS, and WVDNR on the results and recommendations.

The Phase 2 report should include, but not be limited to: (1) all water quality data collected; (2) the conditions during which DO was less than 7.0 mg/l; (3) the frequency, duration, and extent of low DO events; (4) the aeration techniques and operational modes evaluated; (5) the effects on DO of the various DO enhancement measures evaluated; and (6) any relevant agency correspondence concerning the Phase 2 monitoring report. The Phase 2 report should also include a description of the aeration technique(s) or operational procedures that are recommended, for Commission approval, to be included in the final operating plan.

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Prior to filing the Phase 1 and Phase 2 reports with the Commission, the licensee, as noted in the schedule, should submit the reports to COE, USFWS, and WVDNR for comment. Each agency should be given 30 days to comment. The licensee's filing for each report should include agency comments and the licensee's response to agency comments. Based on the Commission's review of the Phase 2 report, the Commission should reserve the right to require modifications to project facilities and/or operations to ensure maintenance of West Virginia's water quality standards.

The licensee's plan includes a schedule for filing reports concerning Phase 1 and Phase 2 monitoring. However, the licensee's plan does not include a mechanism for reporting violations of the State's DO standard during the Phase 2 studies, or after the final operating plan has been implemented.

Therefore, if the DO level, as measured by the approved monitoring studies, falls below 7.0 mg/l, the minimum required DO concentration under Article 404, the licensee shall file a report with the Commission within 30 days of the date of the incident. The report shall, to the extent possible, identify the cause, severity, and duration of the incident, and any observed or reported adverse environmental impacts resulting from the incident. The report shall also include: (1) operational data necessary to determine compliance with Article 404; (2) a description of any corrective measures implemented at the time of the occurrence, and the measures implemented or proposed to ensure that similar incidents do not recur; and (3) comments or correspondence, if any, received from the resource agencies regarding the incident. Based on the report and the Commission's evaluation of the incident, the Commission reserves the right to require modifications to project facilities and operations to ensure future compliance.

Implementation of the licensee's proposed DO monitoring plan, as modified above, would document baseline and post-construction DO levels in the Gauley River downstream from the project, and provide data for any decisions regarding the method of reaeration that may be needed to maintain water quality standards in the river. Therefore, the DO monitoring plan for the Summersville Project should be approved.

The Director Orders:

(A) The licensee's dissolved oxygen monitoring plan, filed with the Commission on July 15, 1996, as modified in paragraphs B thru E is approved.

(B) The licensee's maintenance and calibration shall include a 30-day interval between visits for servicing the DO monitoring probes. However, if at any time during the monitoring period it appears that DO data integrity is compromised by the

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30-day service schedule, the licensee, in consultation with the U.S. Corps of Engineers (COE), the U.S. Fish and Wildlife Service (USFWS), and the West Virginia Division of Natural Resources (WVDNR), shall modify the maintenance and calibration schedule, as appropriate, to minimize the reporting of erroneous DO data. Should the maintenance and calibration schedule be adjusted, the licensee should notify the Commission within 10 days of such changes, and include what conditions prompted the adjustment in the schedule.

(C) By January 15, 1998, the licensee shall file with the Commission a report concerning the Phase 1 DO monitoring. This report shall include a description of the evaluation methods used, all the results of the monitoring, and any relevant correspondence with COE, USFWS, and WVDNR on the Phase 1 report.

Prior to filing the report with the Commission, the licensee shall submit the report to COE, USFWS, and WVDNR for comment. Each agency shall be given 30 days to comment. The licensee's filing shall include agency comments and the licensee's response to agency comments.

(D) Four months after completing the first two years of commercial operation, the licensee shall file with the Commission, for approval, a report concerning the Phase 2 DO monitoring, including comments of the COE, USFWS, and WVDNR on the results and recommendations. This report shall include, but not be limited to: (1) all water quality data collected; (2) the conditions during which DO was less than 7.0 mg/l; (3) the frequency, duration, and extent of low DO events; (4) the aeration techniques and operational modes evaluated; (5) the effects on DO of the various DO enhancement measures evaluated; and (6) any relevant agency correspondence concerning the Phase 2 monitoring report.

The Phase 2 report shall also include a description of the aeration technique(s) or operational procedures that are recommended, for Commission approval, to be included in the final operating plan.

Prior to filing the report with the Commission, the licensee shall submit the report to COE, USFWS, and WVDNR for comment. Each agency shall be given 30 days to comment. The licensee's filing shall include agency comments and the licensee's response to agency comments. Based on the Commission's review of the report, the Commission shall reserve the right to require modifications to project facilities and/or operations to ensure maintenance of West Virginia's water quality standards.

(E) If the DO level, as measured by the approved monitoring studies, falls below 7.0 mg/l, the minimum required DO concentration under Article 404, the licensee shall file a report

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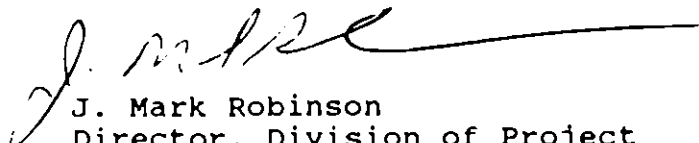
with the Commission within 30 days of the date of the incident. The report shall, to the extent possible, identify the cause, severity, and duration of the incident, and any observed or reported adverse environmental impacts resulting from the incident. The report shall also include: (1) operational data necessary to determine compliance with Article 404; (2) a description of any corrective measures implemented at the time of the occurrence, and the measures implemented or proposed to ensure that similar incidents do not recur; and (3) comments or correspondence, if any, received from the resource agencies regarding the incident. Based on the report and the Commission's evaluation of the incident, the Commission reserves the right to require modifications to project facilities and operations to ensure future compliance.

(G) Unless otherwise directed in this order, the licensee shall file an original and eight copies of any filing required by this order with:

The Secretary
Federal Energy Regulatory Commission
Mail Code: DPCA, HL-21.1
888 First Street, NE
Washington, DC 20426

In addition, the licensee shall serve copies of these filings on any entity specified in this order to be consulted on matters related to these filings. Proof of service on these entities shall accompany the filings with the Commission.

(F) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days from the date of issuance of this order, pursuant to 18 C.F.R. § 385.713.


J. Mark Robinson
Director, Division of Project
Compliance and Administration

Appendix 2.4 – Request for WVDEP Concurrence on WQC

Anderson, Elise (Enel North America - USA)

From: Anderson, Elise (Enel North America - USA)
Sent: Friday, December 27, 2019 4:50 PM
To: Brian.L.Bridgewater@wv.gov
Cc: Harris, Beth (Enel North America - USA)
Subject: Summersville Hydroelectric Project (FERC No 10813) - Water Quality Certification
Attachments: 2.1 Summersville WQC.PDF; 2.2 WQC Amendment 1997.pdf

Dear Brian,

I am preparing an application to submit to the Low Impact Hydropower Certification Institute to recertify the Summersville Hydroelectric project as a low impact facility for another 5 year term. This facility has been previously certified by this program twice before and we are seeking to renew for a 2020-2025 term.

A new requirement of the program, is that is a project's water quality certification is more than 10 years old, we are required to provide documentation that the certification terms and conditions remain valid and in effect for the facility (e.g., a letter from the agency).

Could you provide a letter or response to this email certifying these terms are still in effect? I have attached the original WQC (1991) and the amendment (1997) for reference.

Please let me know if you have any questions or concerns.

Thank you.

Elise Anderson

Sr. Environmental Permitting Specialist
Business Development



Enel North America, Inc.

100 Brickstone Square, Suite 300 – Andover, MA 01810 - USA
T +1 978-447-4408
elise.anderson@enel.com

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Appendix 3.1 – MOA and Mitigation Plan



RECEIVED

SEP 13 1991

STATE OF WEST VIRGINIA
DEPARTMENT OF COMMERCE, LABOR AND ENVIRONMENTAL RESOURCES
DIVISION OF NATURAL RESOURCES

Capitol Complex, Building 3
1900 Kanawha Boulevard, East
Charleston, West Virginia 25305
Telephone (304)348-2754
Fax No. (304)348-2768

GASTON CAPERTON
Governor

J. EDWARD HAMRICK III
Director

ANN A. SPANER
Deputy Director

September 6, 1991

Lois D. Cashell, Secretary
Federal Energy Regulatory Commission
825 North Capitol Street, N.E.
Washington, D.C. 20426

RE: Summersville Hydroelectric
Project, FERC No. 10813.

Dear Ms. Cashell:

Enclosed is a copy of the Memorandum of Understanding entered into by the West Virginia Division of Natural Resources (WVDNR), the City of Summersville and their agent, Noah Corporation, relative to the above-referenced project. As an integral part of this Memorandum of Understanding is the attached Mitigation, Compensation and Enhancement Plan which details a means to mitigate and compensate for the impacts of the proposed hydroelectric development at the Summersville Dam. This plan^{culminates} years of discussion and coordination between our respective entities so as to provide appropriate mitigation and compensation for effects on aquatic and wildlife resources as well as enhancement measures that should benefit these resources, local residents and visitors to this region of the State of West Virginia.

Sincerely,


J. Edward Hamrick III
Director

JEH/sas

Ms. Lois D. Cashell
Page Two
September 6, 1991

Copies provided:

City of Summersville
Noah Corporation
U.S. Army Corps of Engineers
U.S. Fish and Wildlife Service
USDI-National Park Service
WVDNR-Water Resources Section
WVDNR-Wildlife Resources Section
WVDNR-Office of Environmental
and Regulatory Affairs

MEMORANDUM OF AGREEMENT

This AGREEMENT made and entered into the 5th day of August, 1991 by and between the CITY OF SUMMERSVILLE (the "APPLICANT" or "LICENSEE", if issued), AND/OR their agent (NOAH CORPORATION, as founded by corporate laws of the State of South Carolina), a partnership found under laws of the State of West Virginia and THE WEST VIRGINIA DIVISION OF NATURAL RESOURCES (the "WVDNR").

WHEREAS, the APPLICANT will own and operate a hydroelectric project (the "PROJECT") to be licensed by the Federal Energy Regulatory Commission (the "FERC") as Project Number 10813 and will consist of a power station and the associated transmission lines at Summersville Dam near Summersville, West Virginia; and

WHEREAS, the application for the PROJECT was filed January 11, 1991 and will be acted upon by the FERC in the near future; and

WHEREAS, said project may be licensed by the FERC for a period of 50 years; and

WHEREAS, during the course of the application review by the FERC, the WVDNR expressed concern regarding project impacts that relate to decreases in tailwater dissolved oxygen, potential turbine entrainment of fishes, recreation, transmission line development, sediment and erosion control, operation mode, and potential effects on a federally endangered species; and

WHEREAS, the APPLICANT has reviewed and agreed to implement the attached mitigation, compensation and enhancement plan (the "PLAN") relative to the above concerns.

WHEREAS, the WVDNR is satisfied with the PLAN and feels the APPLICANT has negotiated in good faith the features of the PLAN and the requirements of State

Certification, which mitigate, compensate and enhance the PROJECT as to benefit the fish and wildlife resources and residents of West Virginia for the life of the PROJECT; and

WHEREAS, if the PROJECT's license (if issued) is transferred, this AGREEMENT will be transferred by the LICENSEE to the transferee of the PROJECT without consent of the WVDNR; and

WHEREAS, this AGREEMENT may only be modified by a written amendment executed by both the LICENSEE and the WVDNR.

WITNESS:

Ron Hancock

CITY OF SUMMERSVILLE, WEST VIRGINIA

By:

John H. Mc

Title:

Mayor

WITNESS:

James A. Price

By:

James B. Price

Title:

President

WITNESS:

Sherry C. Snyder

WEST VIRGINIA DIVISION OF NATURAL
RESOURCES

By:

Robert H. Hinkle

Title: Director

Mitigation, Compensation and Enhancement Plan
for the
Summersville Hydroelectric Station
FERC Project 10813

The West Virginia Division of Natural Resources (WVDNR) has prepared this Plan (as referred to in the Memorandum of Agreement between WVDNR and City of Summersville/Noah Corporation) to detail a means to mitigate and compensate for the impacts of the proposed Hydroelectric Development at Summersville Dam. The following summarizes years of discussion and planning regarding mitigation and compensation for effects on fish and wildlife resources, as well as enhancement measures that should benefit these resources, local residents and visitors to this region of the state.

The following summarizes the concerns and the means to alleviate the real and anticipated impacts regarding decreases in tailwater dissolved oxygen, potential turbine entrainment, recreation loss, transmission line development, sedimentation and erosion, operational mode, and effect on federally endangered species. The WVDNR reserves the right to make additional recommendations to the Plan based upon additions, modifications to, or deletion(s) from the project. This Plan is contingent on the applicant's receipt of a license (hence, the applicant is referred to from hereon as the "Licensee") from the Federal Energy Regulatory Commission (FERC).

1. Dissolved Oxygen (DO) -- The Gauley River is a High Quality Stream that is within the National Recreation Area Boundary, and is

designated as a National Resource Water by the WVDNR. The High Quality and National Resource Water status of the Gauley River invokes the State's Anti-degradation Policy as stipulated in the West Virginia Legislative Rules, Title 46, Series I, Section 4.0 issued pursuant to Chapter 20, Article 5A, Code of West Virginia. The State of West Virginia considers National Resource Waters as being of exceptional value and requires stringent water quality management for the protection of their aquatic biota. Section 4.1.g of the Anti-degradation Policy directs the following.

"In all cases, waters which constitute an outstanding national resource as designated in Section 7.3.d shall be maintained and protected and improved where necessary." (Emphasis added.)

The Licensee agrees to the following to protect and manage DO of the affected waters.

A. To comply with Water Quality Standards requirements adopted by West Virginia and pursuant to the Federal Clean Water Act (as amended) and to alleviate potential impacts to water quality and aquatic habitat which would result if low DO concentrations occur in the hydro project discharge, the Licensee will be required to maintain a DO concentration in the tailwaters of 7.0 mg\l. Also the licensee shall operate the project in a manner that maintains DO conditions in the Gauley River upstream of Swiss, WV, equivalent to that existing prior to project operation.

To determine pre-project conditions, the following is required of the Licensee. The pre-project condition in the Gauley River, as determined through pre-construction data collections and analyses approved by WVDNR, shall be maintained during the months of June through October.

B. The Licensee, within 180 days following the issuance of the FERC license, shall submit to WVDNR for approval a plan to determine pre-project DO conditions. The plan shall include a design to continuously measure DO and temperature at a minimum interval of once per half hour on a 24-hour daily basis. To characterize water quality conditions of the reservoir withdrawal water, DO and temperature data shall be collected within the reservoir withdrawal zones (ca. 170-220 feet in depth) or at another location representative of the dam discharge prior to passage through the Howell-Bunger valves. The downstream site should be representative of the tailrace conditions, and its location is subject to the concurrence of WVDNR. Daily stream flow (cubic feet per second) shall also be determined for the Gauley River at the project site. Additional studies shall determine the effect of project operation on the DO concentration in the Gauley River downstream of Summersville Dam. The duration of the pre-project DO study shall be a minimum of one (1) June-through-October period prior to project operation. The WVDNR reserves authority to approve DO monitoring locations and the right to require an additional season of pre-project data collection should the first season of

the study be deemed incomplete, inaccurate or compromised by atypical stream or lake conditions.

Further, the DO plan shall include a detailed description of the following:

- i. methods to measure DO, temperature and flow;
- ii. site description of DO monitors and flow measurement locations;
- iii. DO monitoring equipment;
- iv. DO monitor maintenance and calibration schedule; and
- v. a schedule and methodology to validate accuracy of the DO monitors.

C. Following completion of the pre-project study, the Licensee, in cooperation and consultation with WVDNR and using WVDNR approved methodology, shall determine the representative pre-project DO condition for the Gauley River. The pre-project conditions, as determined through data collection and analyses approved by WVDNR, shall be maintained during the months of June through October. Should thorough and adequate data be collected and analyzed which indicates (subject to WVDNR concurrence) that periods within the June through October interval are not representative of the high temperature/low flow characteristics of a critical period, the established June through October critical period or operating conditions

may be modified. However, in reviewing data for such a determination, any modification must fully meet and protect the trout water designated use, National Resource Water designation, and appropriate water quality requirements for cold water regimes.

D. The Licensee shall, 180 days prior to initiating project operation, file with WVDNR an acceptable interim operating plan to maintain the pre-project DO concentration (June through October) after hydrogeneration is initiated. The plan shall be developed jointly with the WVDNR to ensure compliance with the pre-project operating condition and include plans to effectuate any means necessary to maintain DO, using, at a minimum, partial spill flows through the Howell-Bunger valves, air injection and/or cessation of generation and total diversion of flow to the normal dam release. The DO study should continue for a minimum of two (2) years after operation begins (post-project). This monitoring period will allow for project operation alterations and/or installation of additional aeration mechanisms to adequately maintain DO.

E. Following completion of the two year study, the Licensee shall submit to WVDNR a comprehensive evaluation of the interim operating plan. The evaluation shall include, but not be limited to: a report summarizing data collected; conditions in which the project was unable to maintain DO; frequency, duration, and extent of non-compliance; corrective measures

implemented, and effectiveness; and recommended revisions to project operation, and/or additional mitigative measures to be employed to sustain pre-project conditions. Additional mitigative measures should include, but not be limited to, diversion of a percentage of flow to normal dam release, artificial aeration or project shutdown. The revised operating plan shall be placed in effect the first day of June following completion of the interim evaluation.

F. In addition to the above requirements, the Licensee shall maintain the U.S. Army Corps of Engineers' present minimum discharge for the Summersville Dam at all times during construction of the hydroelectric facility.

2. Turbine Entrainment -- The potential for fish mortality as a result of turbine entrainment is a concern. However, since it is felt that no fish survive entrainment due to pressure differences and passage through the Howell-Bunger valves, the WVDNR agrees with the Licensee's recommendation to not perform the passage/mortality studies. In lieu of these studies the Licensee has dedicated additional funds to the yet unspecified recreational enhancement measure(s) as described within the "Recreation" portion (Section 3-C-x) of this memorandum.

3. Recreation -- Construction and operation of the proposed facility will impact Summersville tailwaters and possibly the lake fishery. Anticipated impacts are:

- a. temporary loss of fishing opportunity due to increased turbidity levels during construction;
- b. loss of fishing opportunity due to restricted and/or loss of access to the plunge pool and portions of the tailwaters during and after construction;
- c. loss of fishing opportunity due to the physical presence of the powerhouse and the alteration of the lake's discharge (e.g., plunge pool changes and increased discharge velocities into the river from the powerplant); and
- d. potential impact to the lake's fish populations due to entrainment mortality.

The Licensee has agreed to the following mitigation, compensation and/or enhancement measures, which are to be implemented in two construction phases. The location and design of all developments in Phase I and Phase II shall be approved by WVDNR prior to installation. Phase I recommendations shall be built or implemented prior to operation of the Summersville Hydroelectric Project. Phase II measures are to be initiated in year 16 of operation. Expenditures for items to be provided in Phase II will be adjusted to reflect their value in 1990 dollars.

The Licensee has agreed to the following measures.

A. Prior to any construction disturbances (e.g., access road, trails, stepstone bridges), the Licensee shall survey these areas for endangered species and/or coordinate with WVDNR and appropriate federal agencies regarding the location of endangered plants (e.g., Virginia spiraea, Spiraea virginiana) and animals (e.g., Peregrine falcon, Falco peregrinus).

B. In addition, the Licensee shall be responsible for annual trash pick-up and maintenance of all recreational developments and signs, except where noted. An annual meeting, scheduled by the Licensee, should be held with WVDNR to review maintenance requirements for all recreational facilities.

C. Phase I

- i. The Licensee shall design, erect, and maintain the necessary signs (temporary during construction and permanent after completion) which properly instruct public facility users regarding area rules and safe use of the facilities, and which direct them to parking, fishing areas, restrooms and other ancillary developments. Sign content and location will be subject to approval by WVDNR and, where applicable, the U.S. National Park Service

(NPS) and will be designed in accordance with the NPS and/or U.S. Army Corps of Engineers (COE) standards.

- ii. The Licensee shall construct an Administrative access road from the powerhouse area to a location in the vicinity of the emergency spillway. If said access improvements have been completed by another entity or have been eliminated from consideration due to the presence of an endangered species or other reason, the Licensee shall, after securing approval of WVDNR provide other access and/or recreational improvements at a comparable expense, (estimated in 1990 at \$120,000) at a location in the project vicinity chosen by WVDNR. The road access development will be built to the standards of the NPS and will consist primarily of vegetation removal, culvert installation, gate installation, ditching, turnaround construction, regrading and/or rebuilding of the existing roadbed, reseeding of disturbed areas, and establishing

and maintaining an all-weather road surface. Additionally, at least three road spurs (at locations chosen by WVDNR and NPS) shall be built to the river utilizing the same construction standards described above. These roads shall provide access primarily for emergency reasons and fish stocking.

- iii. The Licensee shall construct a pathway around the powerhouse to accommodate fisherman access to both the east bank of the river and the existing plunge pool. Said pathway shall be constructed of concrete and/or macadam and have guard rails. The pathway shall be designed and constructed to facilitate use by handicapped individuals. The location of the pathway shall be on the face of the dam or be part of the access walkway to the powerhouse that is currently planned to provide access to the tailrace for handicapped individuals.
- iv. The Licensee shall design and install two stepstone bridges at strategic locations (chosen by WVDNR and NPS) in the Gauley River

between the Summersville Dam and the end of the previously described (Section 3-C-ii) Administrative access road. Said bridges will allow fishermen to cross the Gauley River during suitable low flows (to be determined by WVDNR and NPS). Maintenance of these structures will be performed at the Licensee's expense. The bridges must be examined each spring and fall and repaired (if necessary) prior to the trout stocking seasons. If the NPS does not permit bridge construction, the Licensee shall construct access improvements (at comparable expense) agreeable to NPS and WVDNR.

- v. The Licensee shall design and construct fisherman access at Persinger Creek. This work shall include upgrading approximately 1 mile of road (Nicholas County 5/1), which shall include (but is not limited to) widening, establishment and maintenance of an all weather surface, construction of pull-offs and a turnaround, ditch cleaning, culvert placement and maintenance. The standards utilized must be sufficient to

permit passenger car travel. A parking area with trash receptacles shall also be developed at a location agreed to by WVDNR; maintenance and trash pickup shall be performed by the Licensee. Parking area size will be dependent on site availability and projected need.

- vi. The Licensee shall design and construct (or provide funds to WVDNR to design and construct) firebreaks on the Summersville Wildlife Management Area. Maintenance of firebreaks shall be performed by WVDNR.
- vii. The Licensee shall design and construct fishermen access trails on both sides of the river from the dam downstream to the vicinity of the emergency spillway. Work shall include vegetation removal, grading, and placement of gravel on trails (at least three feet wide). Work should be coordinated with NPS and WVDNR to ensure that the location is accurate and the construction is according to NPS standards. In addition, coordination with US Fish and Wildlife Service (FWS) and WVDNR may be necessary

to avoid impacts to federally endangered species.

- viii. The Licensee shall design and construct a boating access to the Gauley River in the Summersville tailwater at the nearest possible location to the powerhouse. This facility shall replace the existing tailwater launch area.
- ix. The Licensee shall procure (or construct) and install, to WVDNR specifications, fish attractant structures in three areas of Summersville Lake. The maintenance of these structures shall be performed by WVDNR.
- x. The Licensee shall provide the WVDNR \$75,000 to construct unspecified recreational enhancement measures (e.g., a fish cleaning facility) within the immediate project vicinity. The Licensee shall maintain this development(s) and provide trash pick-up.
- xi. The Licensee shall design, construct, and make available, for 365 days each year, modern sanitary facilities in the vicinity of the main parking area at the tailwaters (or alternatively,

operate and maintain the COE's existing toilet facilities located at the northwestern end of the parking area). If new facilities are built, the Licensee shall coordinate this activity with the NPS.

- xii. The Licensee shall annually provide the WVDNR \$25,000 to be dedicated to management of fish and wildlife resources in the project vicinity. These funds shall be adjusted upwardly by 4.5% annually to account for inflation.

D. Phase II (Year 16)

- i. The Licensee shall provide an additional \$70,000 (in 1990 dollars) to WVDNR for management of fish and wildlife resources in the project vicinity. This funding will be added to the adjusted Phase I annual appropriation, and the total appropriation will thereafter be upwardly adjusted by 4.5% annually for the remainder of the license period to account for inflation.
- ii. The Licensee shall design and construct a boat launch facility in the Muddlety Creek arm of Summersville Lake (\$250,000 in 1990 dollars).

This facility's primary construction features will include (but shall not be limited to): 1) vegetative clearing; 2) upgrading and surfacing the existing grade; 3) conventional bridging (above water) of a small stream; 4) installation of a concrete launch ramp; 5) parking lot construction; and 6) development of sanitary facilities, drinking water, lighting and a fish cleaning structure. Operation, maintenance and trash pick-up shall be performed by the Licensee.

- iii. The Licensee shall design and construct, or provide funds to design and construct a residence and storage building (combined cost of \$100,000 in 1990 dollars) to be located on COE lands. The design shall be approved by the WVDNR. The WVDNR will assume the operation and maintenance of this structure after construction.
- iv. The Licensee shall provide the necessary funds (\$250,000 in 1990 dollars) to complete unspecified improvements to an existing

WVDNR hatchery. Said improvements will increase hatchery production to provide increased stocking allotments for the Summersville Lake tailwaters. Operation and maintenance of said improvements will be assumed by WVDNR.

- v. The Licensee shall provide the WVDNR funds necessary (\$40,000 in 1990 dollars) to purchase certain equipment to be utilized in fishery and game management programs (e.g., hatchery truck, farm tractor, boat, and outboard motor). Operation and maintenance responsibility of said equipment will be assumed by the WVDNR.

4. Soil Erosion, Spoil Disposal and Transmission Line Development Plans -- Turbidity resulting from construction and spoil disposal can have negative impacts to fish and wildlife resources in the short and long-term future. Poor reclamation can also affect the aesthetics of this highly visited recreation area. To avoid such impacts, the Licensee has agreed to the following.

- A. Within 60 days of issuance of the FERC license, the Licensee shall submit to the WVDNR for approval, a sediment and erosion control plan

for the conceptual design of the hydroelectric project. A detailed plan shall include measures to control surface runoff from all disturbed areas and to minimize sediment contributed to the Gauley River during instream work. The use of instream settling ponds will be unacceptable. Further, the plan should include a discussion of the revegetation plan for the transmission line, spoil disposal site, and facility site.

- B. A minimum of 180 days prior to initiation of any project construction activities, the Licensee shall submit to the WVDNR a site specific comprehensive sediment and erosion control plan for the final engineering design of the hydroelectric facility. The plan shall include detailed descriptions of the following items.
 - i. The actual site conditions.
 - ii. The control measures which include the description of each measure, the topographic map locations, and the functional design drawings.

- iii. A revegetation plan for disturbed areas, which stipulates the seeding/planting rate, seed mixture, plant species, and wildlife value; the disturbed areas shall include (but not be limited to) the spoil disposal site, transmission line right-of-way, and facility site.
 - iv. The implementation schedule for installation of the control measures and initiation of revegetation work.
 - v. A comprehensive monitoring and maintenance program of control measures and revegetation during and after construction as well as after operation.
 - vi. A periodic review schedule to ensure proper installation and operation of control measures and success of revegetation.
 - vii. A procedure to initiate immediate corrective action in circumstances of unsuccessful use of control measures or failure of revegetation.
- C. The Licensee shall obtain permits for all instream construction activities from the Public Land Corporation of the WVDNR.

- D. The Licensee shall provide habitat based mitigation for impacts to terrestrial and aquatic habitats resulting from spoil disposal if deemed necessary by the WVDNR. The Licensee shall perform right-of-way maintenance to the transmission line route mechanically rather than by the use of herbicides.

There shall be no initiation of construction activities until a site specific sediment and erosion control plan is received and approved by the WVDNR. The Licensee shall be subject to enforcement action should turbidity or any other applicable West Virginia State water quality standard be violated as a result of any previous or on-going project related activities.

5. Plant Operation Mode -- The WVDNR contends that any alteration of the current lake discharges will have detrimental impacts on fish and wildlife and public hunting and fishing opportunities in the lake and tailwaters. Hence, the Licensee agrees to the following to alleviate this concern.

- A. The Licensee shall operate the power plant pursuant to the present (1991) COE discharge schedule.
- B. Any alteration to this release scheme must be approved by the COE and WVDNR.

6. Endangered Species -- Until recently, the occurrence of endangered species were not known in the project area. However, Virginia spiraea (Spiraea virginiana), has been listed pursuant to the Endangered Species Act of 1973 as a federally threatened species. This species is known to occur within the Gauley River floodplain within the project reach. To protect and manage this species, the Licensee agrees to the following measures.

The Licensee shall review existing information and/or collect new data regarding Virginia spiraea, Spiraea virginiana, and prepare a report summarizing its distribution and abundance in the project area. The impacts of project construction or operation, which shall include mitigation/enhancement measures, shall be evaluated in said report. Once completed, a meeting with the WVDNR, COE, NPS, and U.S. Fish and Wildlife Service shall be held to discuss whether the Licensee shall modify construction or operational plans to comply with agreed measures necessary to protect S. virginiana.

A RESOLUTION APPROVING THE FORM AND CONTENT OF
A MEMORANDUM OF UNDERSTANDING BETWEEN THE
NATIONAL PARK SERVICE, THE CITY OF
SUMMERSVILLE AND THE NOAH CORPORATION, AND
A MEMORANDUM OF AGREEMENT BETWEEN THE CITY
OF SUMMERSVILLE, THE NOAH CORPORATION, AND
THE WEST VIRGINIA DIVISION OF NATURAL
RESOURCES; AUTHORIZATION TO THE MAYOR TO
EXECUTE AND CITY RECORDER TO ATTEST THE
SAME ON BEHALF OF CITY.

WHEREAS, the City of Summersville, West Virginia has filed
for a license from the Federal Energy Regulatory Commission ("FERC")
to construct, own and operate a hydroelectric power project at the
Summersville Dam near Summersville, West Virginia (the "License");
and


WHEREAS, the filing by the City of Summersville for the
License has been done through its agent, the Noah Corporation; and

WHEREAS, there has been presented to the City Council of the
City of Summersville, in anticipation of the City of Summersville
being issued the License, a Memorandum of Understanding by and
between the National Park Service, the City of Summersville and the
Noah Corporation, and a Memorandum of Agreement by and between the
City of Summersville, the Noah Corporation, and the West Virginia
Division of Natural Resources, the form of which memorandums require
the parties thereto to perform certain duties with respect to
environmental and/or recreational aspects of hydroelectric power
development at the Summersville Dam.

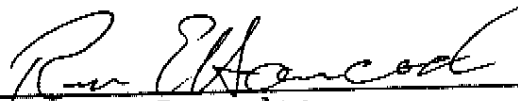
NOW THEREFORE, THE CITY OF SUMMERSVILLE HEREBY RESOLVES AS
FOLLOWS:

1. The form and content of the aforementioned Memorandum of Understanding and the Memorandum of Agreement, which incorporates an attached mitigation, compensation and enhancement plan, are both hereby approved.
2. The Mayor is hereby authorized to execute the aforementioned Memorandum of Understanding and Memorandum of Agreement as the acts and deeds of said City, and the City Recorder is hereby authorized to attest the same and affix the official seal of the City.

Adopted this 22 day of July, 1991 by the City Council of the City of Summersville.



Mayor



Recorder

Appendix 3.2 – MOA Amendment

AMENDMENT TO MEMORANDUM OF AGREEMENT

This AMENDMENT TO MEMORANDUM OF AGREEMENT (the "Amendment") is made and entered into on this 10th day of December, 1998, by and among the CITY OF SUMMERSVILLE (the "Licensee"), NOAH CORPORATION, a corporation formed under the laws of South Carolina, as agent for Licensee ("NOAH") and the WEST VIRGINIA DIVISION OF NATURAL RESOURCES ("WVDNR").

RECITALS

- A. Licensee, NOAH and WVDNR are parties to a Memorandum of Agreement (the "MOA") dated August 5, 1991 pursuant to which, among other things, the Licensee agreed to implement a Mitigation, Compensation and Enhancement Plan for the Summersville Hydroelectric Station (the "Plan") that was attached to the project license.
- B. Licensee, NOAH and WVDNR now desire to amend the Plan and consequently the MOA in accordance with the terms and conditions set forth in this Amendment.

NOW THEREFORE, the parties hereto agree as follows:

- 1. Amendment to Plan. Item 3 of the Plan shall be deleted in its entirety and the following language shall be substituted in lieu thereof:

3. Recreation — Construction and operation of the proposed facility will impact Summersville tailwaters. Anticipated impacts are:

- a. Temporary loss of fishing opportunity due to increased turbidity levels during construction;
- b. Loss of fishing opportunity due to restricted and/or loss of access to the plunge pool and portions of the tailwaters during and after construction; and
- c. Loss of fishing opportunity due to the physical presence of the powerhouse and the alteration of the lake's discharge (e.g., plunge pool changes and increased discharge velocities into the river from the powerplant).

The Licensee has agreed to the following mitigation, compensation and/or enhancement measures, which are to be implemented in two construction phases. The location and design of all developments in Phase I and Phase II shall be approved by WVDNR prior to installation. Phase I recommendations shall be built or implemented prior to operation of the Summersville Hydroelectric Project. Phase II measures are to be initiated in year 16 of operation. Expenditures for items to be provided in Phase II will be adjusted to reflect their values in 2000 dollars. All Phase I payments to WVDNR shall be made no later than 2000.

The Licensee has agreed to the following measures.

- C. Prior to any construction disturbances (e.g., access roads), the Licensee shall survey these areas for endangered species and/or coordinate with WVDNR and appropriate federal agencies regarding the location of endangered plants (e.g., *Virginia spiraea*, *Spiraea virginiana*) and animals (e.g., Peregrine falcon, *Falco peregrinus*).
- D. In addition, the Licensee shall be responsible for trash pick-up and maintenance of all recreational developments and signs, except where noted. An annual meeting, scheduled by the Licensee, shall be held with WVDNR to review maintenance requirements for all recreational facilities.
- E. Phase I
 - i. The Licensee shall design, erect, and maintain the necessary signs (temporary during construction and permanent after completion) which properly instruct public facility users regarding area rules and safe use of the facilities, and which direct them to parking, fishing areas, restrooms and other ancillary developments. Sign content and location will be subject to approval by WVDNR and, where applicable, the U.S. National Park Service (NPS) and the U.S. Army Corps of Engineers (COE) and, in these instances, will be designed in accordance with the NPS and/or COE standards.
 - ii. The Licensee shall design and construct yet to be specified mitigation at a cost not to exceed \$250,000, in or adjacent to Summersville Lake. This may consist of boat access at Muddlety Creek, a new ramp at Salmon Run, winter courtesy docks at Salmon Run and/or Long Point, improvement of shoreline access to the upstream face of Summersville Dam, construction of a fishing pier on the upstream face of Summersville Dam and/or other angler access developments. The Licensee shall be responsible for trash pick-up and maintenance of these developments. If no such developments are possible, the Licensee shall pay the WVDNR \$250,000. If any developments are constructed but the aggregate cost of such developments are less than \$250,000, the Licensee shall pay the WVDNR the difference between the aggregate cost of the developments and \$250,000.
 - iii. The Licensee shall construct a pathway around the powerhouse to accommodate angler access to both the east bank of the river and the existing plunge pool. The pathway shall be constructed of concrete and/or macadam and have guard rails. The pathway shall be designed and constructed to facilitate use by handicapped individuals. The location of the pathway shall be on the downstream face of Summersville Dam or be part of the access walkway to the powerhouse that is currently planned to provide access to the tailrace for handicapped individuals.

- iv. The Licensee shall design and construct angler access at Persinger Creek. This work shall include upgrading approximately 1 mile of road (Nicholas County 5/1), which shall include (but is not limited to) widening, establishment and maintenance of an all-weather surface, construction of pull-offs and a turnaround, ditch cleaning, culvert placement and other maintenance. The standards utilized must be sufficient to permit passenger car travel. A parking area with trash receptacles shall also be developed at a location agreed to by WVDNR. Maintenance and trash pick-up shall be performed by the Licensee. Parking area size will be dependent on site availability and projected need.
- v. The Licensee shall design and construct (or provide funds for WVDNR to design and construct) unspecified wildlife management activities or developments, at a cost of \$40,000, on the Summersville Wildlife Management Area. Maintenance of the unspecified wildlife management activities or developments shall be performed by WVDNR.
- vi. The Licensee shall design and construct a boating access to the Gauley River in the Summersville tailwater at the nearest possible location to the powerhouse. This facility shall replace the existing tailwater launch area.
- vii. The Licensee shall procure (or construct) and install, to WVDNR specifications, fish attractant structures at a cost of \$10,000 in three areas of Summersville Lake. The maintenance of these structures shall be performed by WVDNR.
- viii. The Licensee shall provide the WVDNR \$80,000 to construct unspecified recreational enhancement measures (e.g., a fish cleaning facility) within the immediate project vicinity. The Licensee shall maintain any such development and provide trash pick-up.
- ix. The Licensee shall design, construct, and make available, for 365 days each year, modern sanitary facilities in the vicinity of the main parking area at the tailwaters (or alternatively, operate and maintain the COE's existing toilet facilities located at the northwest end of the parking area). If new facilities are built, the Licensee shall coordinate this activity with the NPS.
- x. Until commencement of Year 16, the Licensee shall annually provide the WVDNR \$30,000 to be dedicated to management of fish and wildlife resources in the project vicinity. Such payment shall be annually adjusted to correspond to changes in the Consumer Price Index for All Urban Consumers.
- xi. The Licensee shall design and construct, or provide funds to design and construct, a residence and/or storage building (not to exceed a cost of

\$100,000 in 2000 dollars). The design shall be approved by the WVDNR. The WVDNR will assume the operation and maintenance of this structure after construction.

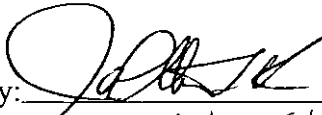
- xii. The Licensee shall provide to the WVDNR \$7,000 to purchase certain fishery equipment to be utilized in the fishery management program at Summersville Lake.
- xiii. The Licensee shall provide angler access adjacent to the tailwaters. This area will be designed to be accessible using the existing tailwater path by physically challenged individuals.

D. Phase II (Year 16)

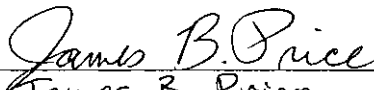
- i. Beginning in Year 16, the Licensee shall pay WVDNR an annual amount equal to the sum of \$70,000 (in 2000 dollars) plus the amount paid by Licensee under C.x. above in Year 15 for management of fish and wildlife resources in the project vicinity. Such annual payment will thereafter be adjusted to correspond to annual changes in the Consumer Price Index for All Urban Consumers.
 - ii. The Licensee shall provide the necessary funds (\$250,000 in 2000 dollars) to complete unspecified improvements to an existing WVDNR hatchery. Said improvements will increase hatchery production to provide increased stocking allotments for the Summersville Lake tailwaters. Operation and maintenance of said improvements will be assumed by WVDNR.
 - iii. The Licensee shall provide the WVDNR funds necessary (\$35,000 in 2000 dollars) to purchase certain equipment to be utilized in fishery and wildlife management programs (e.g., hatchery truck, farm tractor, boat, outboard motor). Operation and maintenance responsibility of said equipment will be assumed by the WVDNR.
- 2. **Governing Law.** The rights and responsibilities of the parties signing this Amendment shall be governed by the laws of the State of West Virginia.
 - 3. **Miscellaneous.** The MOA together with this Amendment is the entire agreement between the parties, and no modification or addition to it shall be binding unless signed by all parties hereto. The MOA and the Amendment are binding upon and shall inure to the benefit of the parties hereto and their respective successors and assigns.

IN WITNESS WHEREOF, the undersigned have caused this Amendment to be executed as of the date first written above.

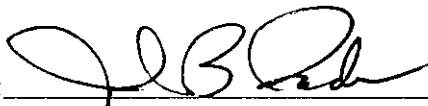
CITY OF SUMMERSVILLE, WEST VIRGINIA

By: 
Name: John Stearn LE Rgn
Title: Mayor

NOAH CORPORATION

By: 
Name: James B. Price
Title: President

WV DIVISION OF NATURAL RESOURCES

By: 
Name:
Title: