

**Review of Low Impact Hydropower Institute
Application for Certification
Summersville Hydroelectric Project
Gauley River, Nicholas County, West Virginia**

Introduction and Overview

This report reviews the application submitted by Gauley River Power Partners, Inc. (GRPP or applicant) to the Low Impact Hydropower Institute (LIHI) for Low Impact Hydropower Certification for the Summersville Hydroelectric Project (project or hydroproject) on the Gauley River, in Nicholas County, West Virginia – five miles south of the City of Summersville (City). 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. 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.

This project (FERC 10813), as amended and approved by FERC, is the one being considered for low impact hydropower certification. The project reservoir is Summersville Lake, which the ACOE manages for flood control, low-flow augmentation, and recreation. Project operation is entirely dependent upon the ACOEs’ operation of the dam and the hydroproject is managed as a run-of-the-river facility.

Site Characteristics

The project and the surrounding area are described in FERC’s 1996 Final Environmental Assessment (EA)¹. Additional detail is provided in the 2002 Operating Plan². The following descriptions are primarily from those documents.

The project is located on the Gauley River in Nicholas and Fayette Counties, West Virginia, between Summersville dam and the upper boundary of the Gauley River National Recreation Area (GRNRA)³. The terrain is rugged and characterized by sharp

¹ FERC. 1996. Final Environmental Assessment: Application for Amendment of License. Summersville Hydroelectric Project, FERC Project No. 10813-011, West Virginia. October 17, 1996.

² GRPP. 2002. Summersville Hydroelectric Project (FERC No. 10813-WV) Operating Plan. Prepared by Kleinschmidt Associates. August 2002.

³ The GRNRA was created under Title 11 of the West Virginia National Interest River Conservation Act of 1987, Public Law 100-534, 102 Stat. 2699, which was enacted by Congress on October 26, 1988. The boundary of the GRNRA is located 550 feet downstream from the ACOE’s valvehouse. It is administered as a unit of the National Park Service (NPS).

ridges and narrow v-shaped valleys. The Gauley River does not have a floodplain in the project area⁴.

As operated by the ACOE, the dam regulates water levels in the reservoir and downstream flows. Changes in discharge rate are scheduled not to exceed 1,500 cubic feet per second (cfs) per hour or cause changes in water surface elevations downstream of the dam greater than 1 foot per hour. A minimum flow of 100 cfs is provided at all times. The ACOE is required to provide 20 days of whitewater rafting flows each year beginning the first weekend after Labor Day.

Summersville Lake has a surface area that varies seasonally between 928 acres and 4,280 acres. The minimum (winter) pool of 4,280 acres has a surface elevation of 1,710 feet. The seasonal (summer) pool of 2,790 acres has a surface elevation of 1,652 feet. 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.

Project Description

The project is located on land owned by the ACOE at their Summersville dam. Project structures include a powerhouse with two hydroelectric turbine-generators, 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.

The project reservoir is Summersville Lake, which the ACOE manages for flood control, low-flow augmentation, and recreation. The dam was authorized by Congress in 1938. It was originally constructed in conjunction with two other dams to control flood waters in the Kanawha basin, a 12,300-square-mile area located in three states. The dams operated as a system, control flows into the Ohio River. Summersville dam was built in 1966 at a cost of \$48 million (1966 dollars). It is an earthen structure 393 feet high and 2,280 feet long.

The ACOE operates the dam and controls the rate of water released through the dam. The hydroelectric 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.

Water is drawn out of the reservoir through an intake structure that leads to a 29-foot-diameter outlet tunnel, which splits into four steel tunnels each leading to a butterfly valve and a Howell-Bunger valve (HBV). The HBVs aerate the water in its controlled release to the Gauley River. Three of the HBVs are located in the ACOE's valvehouse sited directly downstream of the reservoir and the dam. A 17-foot diameter steel penstock connects the #3 butterfly valve to the #3 HBV relocated to the project

⁴ FERC. 1992. Environmental Assessment for Hydropower License, Summersville Hydroelectric Project, West Virginia. January 10, 1992.

powerhouse approximately 150 feet downstream of the ACOE's valvehouse. The powerhouse also contains two Francis hydraulic turbines with a total installed capacity of 80 MW. Water is discharged into a tailrace. A step-up transformer is located adjacent to the powerhouse and the 69 kV transmission line connects the project to the APCo facilities via an interconnection point approximately ten miles away.

Flow is discharged through the project as directed by the ACOE per License Articles 309 and 402 and the Operating Plan⁵. The project is reviewed annually and, over time, has been refined to operate at water flows between 600 and 4,300 cfs⁶. 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.

Public Comments

LIHI did not receive comments on this project during the 60-day public comment period which closed January 10, 2005.

General Conclusions

The project location, design, and operation have resulted in a facility that is consistent with LIHI criteria. The licensee and its agents consulted with agencies and other stakeholders as part of license applications and amendments in the 1980s through the 1990s. The resource agency staff contacted by the Application Reviewer generally agreed that the project meets FERC requirements and other agreed-to-mitigation measures. Because the hydropower project was added to an existing ACOE dam, some issues were not discussed at licensing as they might have been with a new facility. For example, since the ACOE dam was already in place with specific flow requirements for flood control, low-flow augmentation, and recreation, there appears to have been little or no explicit discussion of issues such as minimum flow, fish passage, or entrainment. The hydroproject is designed to use only those flows provided by the ACOE and, therefore, does not affect (or have any control over) downstream flow. Whitewater releases have been maintained and rafting, kayaking, and fishing access points displaced by the powerhouse have been relocated. (An addendum may follow to reflect another discussion with USFWS on 1/19/05 about fisheries and ESA-listed species.)

Recommendations – Based on review of information submitted by the applicant, including FERC Orders and agency letters, and conversations with resource agency staff, ACOE, GRPP, and consultants, the Application Reviewer concludes that the Summersville Hydroelectric Project meets all the certification criteria as described below and recommends certifying the project as low impact.

⁵ GRPP. 2002.

⁶ Wayne VanDenBurg. 2005. Personal (telephone) conversation with Jan Mulder. January 5, 2005.

Low Impact Certification Criteria

A. Flows

- 1) **Is the Facility in Compliance with Resource Agency Recommendations issued after December 31, 1986 regarding flow conditions for fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations) for both the reach below the tailrace and all bypassed reaches?**

YES.

The West Virginia Department of Environmental Protection – Division of Natural Resources (WVDNR) reviewed the Summersville FERC license application and granted the state 401 certification⁷, contingent on FERC including recommended conditions in the project license. Because the dam was already in place and being managed by the ACOE for flood control, low-flow augmentation, and recreation, the focus was on maintaining the existing operational requirements. In the 401 certification, the WVDNR contends that any alteration of the (then) current lake discharges would have detrimental impacts on fish and wildlife and public hunting and fishing opportunities in the lake and tailwaters. As a condition of the 401 certification, the licensee agreed to operate the power plant pursuant to the ACOE discharge schedule and to obtain approval of any alteration to the release schedule from the ACOE and WVDNR.

As described in the Final EA (FERC 1996), all water (except for rare spillage flows during extreme floods) is released from the lake to the Gauley River through low-level outlets near the base of the dam. Releases are controlled through HBVs that dissipate energy during the release. 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. 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.

PASS.

- 2) **If there is no flow condition recommended by any Resource Agency for the Facility, or if the recommendation was issued prior to January 1, 1987, is the Facility in Compliance with a flow release schedule, both below the tailrace and in all bypassed reaches, that at a minimum meets Aquatic Base Flow standards**

⁷ WVDNR. 1991. Summersville Dam Hydroelectric Project, FERC No. 10813, State 401 Certification (letter from J. Edward Hamrick III, Director, to James B. Price, Noah Corporation). September 18, 1991.
January 18, 2005

or “good” habitat flow standards calculated using the Montana-Tennant method?

NOT APPLICABLE. See response A1 (PASS).

- 3) If the Facility is unable to meet the flow standards in A.2., has the Applicant demonstrated, and obtained a letter from the relevant Resource Agency confirming that demonstration, that the flow conditions at the Facility are appropriately protective of fish, wildlife, and water quality?**

NOT APPLICABLE. See response A1 (PASS).

B. Water Quality

- 1) Is the Facility either:**

- a) In Compliance with all conditions issued pursuant to a Clean Water Act Section 401 water quality certification issued for the Facility after December 31, 1986?
Or**
- b) In Compliance with the quantitative water quality standards established by the state that support designated uses pursuant to the federal Clean Water Act in the Facility area and in the downstream reach?**

YES (B1a).

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 requires pre-project monitoring and project management to alleviate potential impacts to water quality and aquatic habitat due to low dissolved oxygen (DO) concentrations by operating the project to maintain DO conditions in the Gauley River (upstream of Swiss, WV) equivalent to conditions prior to project operation. Other requirements include funding fishing and recreation improvements; surveying and coordinating with WVDNR and appropriate federal agencies on the location of endangered plants (e.g., Virginia spiraea) and animals (e.g., Peregrine falcon); and providing plans for soil erosion, spoil disposal, and transmission line development. The 401 certification was amended to comply with the National Park Service’s Gauley River Management Plan⁸ requirements, as was the Memorandum of Agreement among the City, the Noah Corporation, and the WVDNR⁹. The project is in compliance with the requirements of the 401 certification¹⁰.

If yes, go to B2.

⁸ 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.

⁹ WVDNR, City of Summersville, NOAH Corporation. 1998. Amendment to Memorandum of Agreement. December 10, 1998.

¹⁰ Kerry Bledsoe. 2005. Personal (telephone) communication with Jan Mulder. January 11 & 18, 2005.

2) Is the Facility area or the downstream reach currently identified by the state as not meeting water quality standards (including narrative and numeric criteria and designated uses) pursuant to Section 303(d) of the Clean Water Act?

YES.

The Gauley River, from the mouth to Summersville dam, is listed for dissolved aluminum. The entire length of Summersville Lake is listed for mercury. Both were added to the 303(d) list in 2004 and, in both cases, the source is identified as unknown and the projected TMDL is planned for no later than 2016¹¹. However, the state is actively revisiting the dissolved aluminum standard with the U.S. Environmental Protection Agency (EPA); they are requesting that the standard be suspended as it may be too low – as demonstrated by rivers like the Gauley which appear healthy¹².

FERC's 1992 EA notes that water passed through the HBVs (pre-project) resulted in near-saturation to super-saturation DO levels well above the 6.0 milligrams per liter (mg/l) required at any time and the 7.0 mg/l required in spawning areas. Project monitoring and operation requirements of the 401 certification and the FERC license ensure that this condition continues. DO monitoring results are reported annually to the WVDNR¹³. If DO levels fail to meet standards over 10% of the time, then a TMDL would be triggered. This has not occurred¹⁴.

If yes, go to B3.

3) If the answer to question B.2 is yes, has there been a determination that the Facility is not a cause of that violation?

YES.

Because the listings for dissolved aluminum and mercury are recent and TMDLs are not due until 2016, the cause of the violation of these standards has not been officially determined. However, it is generally believed that the mercury levels in Summersville Lake are the result of the atmospheric environment or acid rain¹⁵. If the EPA agrees that the standard for dissolved aluminum should be suspended, then the Gauley River below the dam would no longer be in violation. While there has been no official determination that the facility is not a cause of these violations, the record appears to indicate that it is not.

PASS.

¹¹ WVDEP. 2004. West Virginia Section 303(d) List and Supplements 2004. Web link at www.dep.state.wv.us. Accessed January 10, 2005.

¹² Pat Campbell. 2005. Personal (telephone) communication with Jan Mulder. January 12, 2005.

¹³ Kerry Bledsoe. 2005.

¹⁴ Pat Campbell. 2005.

¹⁵ Kerry Bledsoe and Pat Campbell. 2005. As previously cited (individually).

C. Fish Passage and Protection

1) Is the Facility in Compliance with *Mandatory Fish Passage Prescriptions* for upstream and downstream passage of anadromous and catadromous fish issued by Resource Agencies after December 31, 1986?

NOT APPLICABLE.

The project is not subject to a mandatory fish passage prescription, nor does the FERC license require fish passage facilities. Fish passage is not a limiting factor in the project vicinity¹⁶. The original FERC EA (1992) notes that adding the hydroproject would slightly improve the condition, since no fish survived passage through the HBVs at the ACOE dam. No fish passage mortality studies were required. And, while EPRI's¹⁷ review indicates that fish mortality through turbines depends on various factors including clearance between wicket gates and the leading and trailing edges of the runners, FERC concluded that the overall effect of the project is an improvement over the situation before the hydroproject.

If not applicable, go to C2.

2) Are there historic records of anadromous and/or catadromous fish movement through the Facility area, but anadromous and/or catadromous fish do not presently move through the Facility area (e.g., because passage is blocked at a downstream dam or the fish run is extinct)?

YES (maybe).

Although the FERC EA (1996) notes the presence of American eel (catadromous) in the Gauley River, the state fisheries person is uncertain of their history at the project location and doubts the accuracy of that statement. The Gauley River is within the historic range of the American eel, but passage was blocked around the turn of the last century by dams on the Mississippi and Ohio Rivers¹⁸. There are no historic records of anadromous fish movement through the facility area¹⁹.

If yes, go to C2a.

a) If the fish are extinct or extirpated from the Facility area or downstream reach, has the Applicant demonstrated that the extinction or extirpation was not due in whole or part to the Facility?

YES.

¹⁶ Kerry Bledsoe. 2005.

¹⁷ EPRI (Electric Power Research Institute). 1992. Fish Entrainment and Turbine Mortality Review and Guidelines. EPRI Report No. TR-101231. September 1992.

¹⁸ Kerry Bledsoe. 2005.

¹⁹ Kerry Bledsoe. 2005.

American eel passage was blocked from the Gauley River at the turn of the last century by construction of navigation dams on the Mississippi and Ohio Rivers. The Summersville project was constructed decades later; the ACOE dam was constructed in 1966 and the hydroproject was added to the existing dam in 2001.

If yes, go to C2b.

- b) If a Resource Agency Recommended adoption of upstream and/or downstream fish passage measures at a specific future date, or when a triggering event occurs (such as completion of passage through a downstream obstruction or the completion of a specified process), has the Facility owner/operator made a legally enforceable commitment to provide such passage?**

NOT APPLICABLE.

There is no resource agency recommendation for upstream and/or downstream fish passage measures for American eel or other species.

If not applicable, go to C3.

- 3) If, since December 31, 1986:**

- a) Resource Agencies have had the opportunity to issue, and considered issuing, a Mandatory Fish Passage Prescription for upstream and/or downstream passage of anadromous or catadromous fish (including delayed installation as described in C2a above), and**
- b) The Resource Agencies declined to issue a Mandatory Fish Passage Prescription,**
- c) Was a reason for the Resource Agencies' declining to issue a Mandatory Fish Passage Prescription one of the following: (1) the technological infeasibility of passage, (2) the absence of habitat upstream of the Facility due at least in part to inundation by the Facility impoundment, or (3) the anadromous or catadromous fish are no longer present in the Facility area and/or downstream reach due in whole or part to the presence of the Facility?**

NO.

The Application Reviewer did not find a record of an explicit discussion of fish passage at the time of project licensing. Fish passage is not considered a limiting factor. The hydroproject was added to an existing ACOE dam. As noted previously, there is no history of anadromous fish. The Gauley River is within the historic range of American eel and they may have been present in the vicinity. However, their passage was blocked by numerous navigation dams constructed on the Mississippi and Ohio Rivers at the turn of the last century.

If no, go to C5.

4) If C3 was not applicable:

- a) **Are upstream and downstream fish passage survival rates for anadromous and catadromous fish at the dam each documented at greater than 95% over 80% of the run using a generally accepted monitoring methodology? Or**
- b) **If the Facility is unable to meet the fish passage standards in 4a, has the Applicant demonstrated, and obtained a letter from the US Fish and Wildlife Service or National Marine Fisheries Service confirming that demonstration, that the upstream and downstream fish passage measures (if any) at the Facility are appropriately protective of the fishery resource?**

NOT APPLICABLE. See response C3 (go to C5).

5) Is the Facility in Compliance with Mandatory Fish Passage Prescriptions for upstream and/or downstream passage of *Riverine* fish?

NOT APPLICABLE.

The fishery in the reservoir is diverse, primarily 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 (average 60° F) that enable the establishment of year-round cold water fishery for trout and walleye from the dam to the confluence with the Meadow River approximately 5 miles downstream. WVDNR, through stocking, has established a put-and-take trout fishery downstream of the dam in the Gauley River.

Neither the resource agencies nor FERC required fish passage facilities and fish passage is not considered a limiting factor.

If not applicable, go to C6.

6) Is the Facility in Compliance with Resource Agency Recommendations for Riverine, anadromous and catadromous fish entrainment protection, such as tailrace barriers?

NOT APPLICABLE.

Entrainment was discussed in the 401 certification and in the FERC EAs (1992 and 1996) and fish mortality was determined to be reduced somewhat with the hydroproject. There were no agency recommendations for tailrace barriers or other fish protection measures.

PASS.

D. Watershed Protection

1) Is the Facility in Compliance with Resource Agency Recommendations, or, if none, with license conditions, regarding protection, mitigation or enhancement

of lands inundated by the Facility or otherwise occupied by the Facility, and regarding other watershed protection, mitigation and enhancement activities?

YES.

The FERC license conditions regarding protection, mitigation, and enhancement activities related primarily to recreation (fishing access and whitewater flows) and avoidance of sensitive species which are discussed elsewhere. The project application included implementing a sedimentation and erosion control plan prior to construction and locating the transmission line so that it would span identified wetlands and the poles would avoid wetland habitat²⁰. Visual impacts of the transmission corridor were reduced by using wood poles (approximately 50 tall) that tend to blend more with the surrounding forest and narrowing the cleared corridor through sensitive areas. Neither FERC nor the agencies required additional watershed protection measures.

PASS.

E. Threatened and Endangered Species Protection

1) Are threatened or endangered species listed under state or federal Endangered Species Acts present in the Facility area and/or downstream reach?

YES.

The transmission line corridor is in the vicinity of a federally listed threatened plant species. Virginia spiraea is found below the dam on the Gauley River and downstream on the reach of the Meadow River.

According to the FERC EA (1996), there are no known federal or state listed or proposed animal species in the project area (letter from W.A. Tolin, PWS, to James B. Price, Noah Corporation, August 31, 1995; letter from J.W. Rawson, WVDNR, to James B. Price, Noah Corporation, June 13, 1995). WVDNR has no record of more recently listed species²¹.

If yes, got to E2.

2) If a recovery plan has been adopted for the threatened or endangered species pursuant to Section 4(f) of the Endangered Species Act or similar state provision, is the Facility in Compliance with all recommendations in the plan relevant to the Facility?

YES.

²⁰ FERC. 1996.

²¹ Kerry Bledsoe. 2005.

The U.S. Fish and Wildlife Service (USFWS) developed a recovery plan for Virginia spiraea in 1992²². The licensee developed an avoidance plan that USFWS approved in a letter dated August 11, 1995²³. The avoidance plan is consistent with the relevant plan recommendation to protect existing populations of Virginia spiraea.

If yes, go to E3.

- 3) If the Facility has received authority to incidentally *Take* a listed species through: (i) Having a relevant agency complete consultation pursuant to ESA Section 7 resulting in a biological opinion, a habitat recovery plan, and/or (if needed) an incidental Take statement; (ii) Obtaining an incidental Take permit pursuant to ESA Section 10; or (iii) For species listed by a state and not by the federal government, obtaining authority pursuant to similar state procedures; is the Facility in Compliance with conditions pursuant to that authority?**

NOT APPLICABLE.

Construction of the transmission line avoided populations of Virginia spiraea and an incidental Take permit was not necessary.

If not applicable, go to E5.

- 4) If a biological opinion applicable to the Facility for the threatened or endangered species has been issued, can the Applicant demonstrate that:**
- a) The biological opinion was accompanied by a FERC license or exemption or a habitat conservation plan? Or**
 - b) The biological opinion was issued pursuant to or consistent with a recovery plan for the endangered or threatened species? Or**
 - c) There is no recovery plan for the threatened or endangered species under active development by the relevant Resource Agency? Or**
 - d) The recovery plan under active development will have no material effect on the Facility's operations?**

NOT APPLICABLE. See response E3 (go to E5).

- 5) If E2 and E3 are not applicable, has the Applicant demonstrated that the Facility and Facility operations do not negatively affect listed species?**

YES.

²² USFWS. 1992. Virginia Spiraea (*Spiraea virginiana* Britton) Recovery Plan. November 13, 1992. Web link at www.ecos.fws.gov/species_profile. Accessed January 12, 2005.

²³ FERC. 1996.

As stated previously, the licensee prepared a plan to avoid Virginia spiraea and the USFWS approved the plan.

PASS.

F. Cultural Resource Protection

- 1) If FERC-regulated, is the Facility in Compliance with all requirements regarding Cultural Resource protection, mitigation or enhancement included in the FERC license or exemption?**

YES.

The Facility is FERC regulated. According to the FERC EA (1996), there are no known historic or archeological sites within the amended project boundaries including the transmission line corridor (letter from West Virginia Division of Culture and History, November 6, 1995; letter from ACOE to Noah Corporation, August 28, 1995).

PASS.

- 2) If not FERC-regulated, does the Facility owner/operator have in place (and is in Compliance with) a plan for the protection, mitigation or enhancement of impacts to Cultural Resources approved by the relevant state or federal agency or Native American Tribe, or a letter from a senior officer of the relevant agency or Tribe that no plan is needed because Cultural Resources are not negatively affected by the Facility?**

NOT APPLICABLE. See response F1 (go to G).

G. Recreation

- 1) If FERC-regulated, is the Facility in Compliance with the recreational access, accommodation (including recreational flow releases) and facilities conditions in its FERC license or exemption?**

YES.

The FERC License (1992) Article 410 requires implementation of recreation improvements laid out in the MOA (amended 1998) between WVNR, the City, and the NOAH Corporation. Those improvements include such facilities as a boat launch and rest rooms. License Article 411 requires that a plan for monitoring recreation use be developed in consultation with the ACOE 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 facilities²⁴. The required facilities are in place and meet the intent of the license and MOA²⁵. The ACOE is required to

²⁴ Paul Cyr. 2005. Personal (telephone) conversation with Jan Mulder. January 13 & 14, 2005.

²⁵ Kenneth Stephens. 2005. Personal (telephone) conversation with Jan Mulder. January 12, 2005.

provide 20 days of whitewater rafting flows each year beginning the first weekend after Labor Day. This requirement continues to be met by the ACOE and the hydroproject does not affect those flows.

If yes, go to G3.

- 2) If not FERC-regulated, does the Facility provide recreational access, accommodation (including recreational flow releases) and facilities, as Recommended by Resource Agencies or other agencies responsible for recreation?**

NOT APPLICABLE. See response G1 (go to G3).

- 3) Does the Facility allow access to the reservoir and downstream reaches without fees or charges?**

YES.

The applicant charges no fees for use of the project facilities which are located on ACOE managed property.

PASS.

H. Facilities Recommended for Removal

- 1) Is there a Resource Agency Recommendation for removal of the dam associated with the Facility?**

NO.

There have been no resource agency recommendations for removal of the Facility.

PASS.

FACILITY IS LOW IMPACT

RECORD OF CONTACTS WITH RESOURCE AGENCY STAFF

Date of Conversation: January 11 & 18, 2005
Application Reviewer: Jan Mulder, Environmental Science Associates
Person contacted: Kerry Bledsoe
West Virginia Division of Natural Resources
Wildlife Resources Section
Telephone/email: Telephone call
Areas of Expertise: Project construction and operations, fishing facilities

Mr. Bledsoe has been involved with the hydroproject since the time of construction and is familiar with the fishing facilities and operation plans. (James Rosen, who was involved in relicensing and design review, has retired.) The hydroproject operates as run-of-the-river based on flows provided by ACOE. He does not know the origin of the ACOE 100 cfs minimum flow. Mr. Bledsoe is not aware of fish flow, entrainment, or fish passage coming up as resource issues. Fish passage is not a limiting factor for fish populations which are managed by a stocking program. The stocking program includes both native (e.g., small mouth bass) and non-native (e.g., rainbow trout) fish. The tailrace was previously one of the more popular fishing areas, but higher flows at this location (as a result of the project) have reduced fish concentrations there and fishing locations have shifted to follow the fish.

DO levels are monitored at the project and oxygen may be injected if levels are too low. The annual DO report is due out soon and he's not aware of any problems thus far. In response to questions about the 303(d) listings in the project vicinity, he suggested calling Pat Campbell at WVDEP (304-926-0499 x1046). Mr. Bledsoe said that the elevated levels of mercury in Summersville Lake are most likely the result of acid rain.

During a follow-up conversation, Mr. Bledsoe said that he does not know of other ESA-listed species at the project besides Virginia spiraea and that the USFWS has not been involved in license mitigation or implementation. In response to a question about American eel, he said that the Gauley River (as part of the Ohio River system) is within the historic reach of the American eel, but that they were blocked from the Gauley decades ago by the numerous navigation dams constructed on the Mississippi and Ohio Rivers around the turn of the last century. He believes that American eel, if present, would have been long-gone by the time the ACOE constructed the Summersville dam. He does not recall discussions about American eel concerns at the Summersville project. (It would take him a few days, but he could pull up survey data going back to the 50s or so, but they have no records going back further than that.) He suggested also contacting Barbara Douglas at the USFWS (304-636-6586).

Date of Conversation: January 11, 2005
Application Reviewer: Jan Mulder, Environmental Science Associates
Person contacted: Kenneth Halstead, Hydropower Coordinator
U.S. Army Corps of Engineers
Telephone/email: Telephone call
Areas of Expertise: Design drawings and other FERC compliance documents.

Mr. Halstead is the ACOE point-of-contact for review of project design documents. He's been involved since design completion and early construction. Day-to-day project operations are coordinated with the Summersville Dam Resource Operator.

Date of Conversation: January 12, 2005
Application Reviewer: Jan Mulder, Environmental Science Associates
Persons contacted: Pat Campbell
West Virginia Department of Environmental Protection
Telephone/email: Telephone call
Areas of Expertise: Water quality standards, 303(d) listing

Mr. Campbell said his involvement with the project is pretty passive. (Lyle Bennett was the person involved at the time of the 401 certification.) He reviews the DO reports and so far there haven't been any real issues. If DO levels fail to meet standards over 10% of the time, then a TMDL would be triggered. This has not occurred

In response to questions about the causes of the 2004 303(d) listings for Summersville Lake (mercury) and the Gauley River (dissolved aluminum) from its mouth up to the dam, he said that the cause is not officially confirmed until the TMDL is set. (Both of these TMDLs are due by 2016.) However, the mercury levels in Summersville Lake are probably caused by the atmospheric environment or acid rain. WVDEP believes that the dissolved aluminum standard was set too low as it's showing up at that level on many healthy rivers like the Gauley. The state has asked EPA to revisit the threshold and suspend the criteria. Mr. Campbell thinks it is likely that the state will prevail and that no TMDL will be set for dissolved aluminum.

Date of Conversation: January 12, 2005
Application Reviewer: Jan Mulder, Environmental Science Associates
Person contacted: Kenneth Stephens
National Park Service
Telephone/email: Telephone call
Areas of Expertise: Project recreation requirements

Mr. Stephens said that it's been a couple years since he's been directly involved with the project. He feels that perhaps the NPS should have been more demanding in its license negotiations, but that the project operators have generally satisfied the recreation

requirements for the FERC license. The rest room facility and boat launch meet NPS specifications. Mr. Stephens suggested calling Clif Bobinski (304-465-6526), a recreation specialist, who is more familiar with recreation activities at the project.

Date of Conversation: January 13, 2005
Application Reviewer: Jan Mulder, Environmental Science Associates
Persons contacted: Clif Bobinski
National Park Service
Telephone/email: Telephone call
Areas of Expertise: Recreation use, whitewater rafting and flows

Mr. Bobinski noted that the project is operated as run-of-the-river and commented that the NPS' primary concern is whitewater flows released in September for the Gauley River Festival. As required, the hydroproject does not alter the river flows. However, many people who accessed the river before the project was constructed miss the impressive flows that used to shoot out from the dam. The current situation, with water run through the turbines, does not provide that dramatic visual backdrop, although it also provides calmer access for less experienced rafters. The ACOE and the project operator agreed to a partial release that simulated the previous "spray" for the 2001 World Rafting Championships. While not the same as the previous condition, it was pretty good, and he and some others would like to see something like that again. Mr. Bobinski said that first-time users do not share this concern since they're not familiar with the previous condition. He noted that this perspective is also evident in the FERC-required recreation user surveys conducted by Kleinschmidt Associates.

Some of the outfitters and the public think that the relocated access ramps are pretty steep. (About 2/3 of the rafters put in near the tailwaters and 1/3 put in further down river.) However, the NPS has determined that the facilities generally meet the license requirements. That access point is a difficult site to manage due to the high number of users during a compressed time period. For example, there can be as many as 3,000 people per day during the first couple rafting days during the annual festival. NPS has nearly completed its planning process for the Gauley River National Recreation Area Development Concept Plan. The outcome of that process will direct future NPS improvements, which could include things like reworking the access ramp and/or providing additional landscaping or other recreation amenities.

Natural conditions sometimes preclude the annual whitewater releases. That happened this winter when hurricane-caused rains forced the ACOE to hold back water to help downstream flood control.

Date of Conversation: January 13 & 14, 2005
Application Reviewer: Jan Mulder, Environmental Science Associates
Person contacted: C. J. Hamilton, Summersville Dam Resource Manager
U.S. Army Corps of Engineers
Telephone/email: Telephone call
Areas of Expertise: Project operations and coordination between hydroproject and ACOE operations

Mr. Hamilton said that coordination with the hydroproject operation has gone “wonderfully – better than expected.” He acknowledged that ACOE initially had reservations and was concerned about the feasibility of locating a hydroproject at the dam, but it’s worked well. In response to a question, Mr. Hamilton said that he does not know what the river was like at the site before the dam was constructed (e.g., whether there was much of a natural elevation drop).

Date of Conversation: January 18, 2005
Application Reviewer: Jan Mulder, Environmental Science Associates
Person contacted: Tom Chapman
U.S. Fish and Wildlife Service
Telephone/email: Telephone call
Areas of Expertise: ESA-listed species and American eel

Mr. Chapman is a supervisor and is not familiar with the specifics of the Summersville project. He confirmed that Barbara Douglas is the USFWS person most familiar with the hydroproject. Ms. Douglas has been out for several days, but should be back in the office on January 19th.

RECORD OF CONTACTS WITH APPLICANT

Date of Conversation: January 5, 2005
Application Reviewer: Jan Mulder, Environmental Science Associates
Person contacted: Beth Harris and Wayne VanDenBurg
Gauley River Power Partners, Inc.
Telephone/email: Telephone call
Areas of Expertise: Project information and application documentation

Ms. Harris clarified the various project players. The City of Summersville is the licensee and Noah Corporation is their agent. Gauley River Power Partners operates the project. She said she has a copy of the 401 certification and would fax it. She recommended speaking with the soon-to-be-retired Managing Officer, Wayne VanDenBurg (who happened to be in Ms. Harris' office).

In response to a question about the various operational flows noted in different documents, Mr. VanDenBurg said that the flow range over which the project operates has been refined over time in the field. The hydroproject can effectively operate between flows of 600 cfs and 4,300 cfs. Below 600 cfs, the project cannot operate. Flows in excess of 4,300 cfs are released through the HBVs.

Date of Conversation: January 13 & 14, 2005
Application Reviewer: Jan Mulder, Environmental Science Associates
Person contacted: Paul Cyr, Senior Project Manager
Kleinschmidt Associates
Telephone/email: Telephone call and follow-up emails
Areas of Expertise: Project operations and reporting

Mr. Cyr confirmed that the initial operating flow range has been refined based on field conditions and the Mr. VanDenBurg is the most knowledgeable about actual operations. Of course, this is all based on using flow as directed by the ACOE. Regarding DO levels, he said that the system is automated and that the turbines are designed to self-aspirate. So far, the monitoring results have not indicated a problem meeting the DO standards.

Mr. Cyr said that the report for the fourth year (2004) of required recreation survey data has not been completed, but that he would email a summary of the results of the first three years. The survey results are consistent with Mr. Bobinski's comment that river guides and other pre-project users miss the water being discharged from the HBVs, but that tourists don't because they haven't experienced anything besides the current situation. The general public, in particular, responded that the hydroproject did not impair their use of the GRNRA. Users were generally satisfied with the existing facilities.
