APPENDIX B1

RESPONSES TO FERC'S DEFICIENCY LETTERSTS IN LETTER DATED OCTOBER 28, 2020 – FILED MARCH 31, 2021

Scott's Mill Hydropower Project

FERC Project No. 14867

SCOTT'S MILL HYDRO, LLC

March 31, 2021

The Honorable Kimberly Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

RE: ***SCOTT'S MILL HYDROELECTRIC PROJECT***
FERC PROJECT NO. 14867-001
RESPONSES TO COMMISSION LETER OF OCTOBER 28, 2020

Dear Secretary Bose:

On October 28, 2020, the Federal Energy Regulatory Commission (Commission) transmitted a deficiency letter to Scott's Mill Hydro, LLC (FERC No. P-14867-001). On November 20, 2020 Scott's Mill filed an initial response to the Commission notifying the Commission that Scott's Mill intended to move forward with the exemption application. The November 2020 letter also stated that Scott's Mill was working with the U.S. Fish and Wildlife Service (USFWS) and Virginia Department of Wildlife Resources (VDWR) to convert the Agreement in Principle (AIP) to a Settlement Agreement (SA). Further, Scott's Mill informed the Commission that it was working with Liberty University (LU) to enter into a long-term lease for a parcel on the headpond in Amherst County in order to install a public boat ramp.

Because neither the SA nor the lease with LU were completed before the due date and other aspects of Scott's Mills responses were awaiting additional information, Scott's Mill requested a one-month extension from the Commission. The extension also would permit time for Scott's Mill to conduct a field survey of wetlands within the project boundary. On March 2, 2021, the Commission granted that extension.

As of the end of March, the lease with LU had not been signed. Accordingly, Scott's Mill directed its engineering consultant to remove the recreation parcel from the Exhibit G map. The Exhibit G map consists of two sheets: Sheet 1 which includes the entire project boundary upstream to the Reusens Project Boundary and Sheet 2, which is a more detailed map showing all project facilities. Sheet 2 is completed and included in this filing. Sheet 1 will be filed once our surveyor can complete their survey work and remove the LU parcel. Scott's Mill anticipates that a boat ramp will be included in the SA.

The attached responses to the Commission's deficiency letter may require an amendment to the Exemption Application once the SA is signed, which is expected in April or May. Further, a copy of the public notice is included in the responses. A Proof of Publication will be filed once the newspaper transmits it to Scott's Mill.

Both the USFWS and VDWR provided Scott's Mill with their estimate of the total costs the agencies anticipate they will incur for setting the mandatory terms and conditions for the proposed project under section 30(c) of the Federal Power Act. They have agreed to waive the fees as part of this filing and make them part of the SA. Therefore, no fee or bond has been provided with this filing.

Copies of the Commission's October 28, 2020 letter, Scott's Mill's letter of intent, and the information required in Schedules A and C have been transmitted to parties via email and have been placed on Scott's Mill web site at www.Scottsmillhydro.com. Consulted Indian tribes for which Scott's Mill does not have an email address were sent copies of this letter by US mail.

If you have any questions, feel free to contact me at (540) 320-6762 or Wayne Dyok at (916) 719-7022.

Sincerely,

for

Mark Fendig, Managing Member

Project No. 14867-001

Scott's Mill Hydropower Project Distribution

- Ms. Kimberly Bose, Secretary, Federal Energy Regulatory Commission
- Mr. Jon Smith, Federal Energy Regulatory Commission
- Mr. Jody Callihan, Federal Energy Regulatory Commission
- Division of Dam Safety and Inspection, Federal Energy Regulatory Commission
- Federal Energy Regulatory Commission, Regional Office
- Ms. Catherine Gray, Cultural Resources Specialist, Cherokee Nation
- Chief, Tuscarora Indian Nation
- Ms. Diane Shields, Monacan Tribe
- R. Duschane, Tribal Historical Preservation Officer, Absentee-Shawnee
- Kim Jumper, Tribal Historical Preservation Officer, Eastern Shawnee Tribe of Oklahoma
- Tribal Historical Preservation Officer, Shawnee Tribe
- Resources Department, Eastern Band of Cherokee Indians
- Chief, United Keetoowah Band of Cherokee Indians
- Virginia Council on Indians
- District Engineer, Norfolk District, U.S. Army Corps of Engineers (Jeanne Richardson)
- Mr. David Sutherland, U.S. Fish and Wildlife Service
- Ms. Cindy Shultz, Virginia Field Office, U.S. Fish and Wildlife Service
- Southwest Virginia Field Office, U. S Fish and Wildlife Service
- Director, National Marine Fisheries Service
- Administrator, National Oceanic and Atmospheric Admin., Fisheries Regional Office
- James River District Ranger, National Park Service
- National Park Service
- U.S. Department of Agriculture, Forest Service, Washington, DC
- U.S. Forest Service, Roanoke
- Environmental Impact Review Officer, U.S. Environmental Protection Agency

- Advisory Council on Historic Preservation
- U.S. Bureau of Indian Affairs
- U.S. Bureau of Land Management, Springfield VA Office
- Mr. Scott Smith, Virginia Department of Game and Inland Fisheries
- Mr. Greg Palmer, Virginia Department of Game and Inland Fisheries
- Manager Environmental Services Section, Virginia Dept. of Game and Inland Fisheries
- Ms. Lynn Crump, Virginia Department of Conservation and Recreation
- Mr. Robert Bennett, Virginia Department of Conservation and Recreation
- Ms. Jennifer Wampler, Virginia Department of Conservation and Recreation
- Mr. Robert Ruhr, Virginia Department of Conservation and Recreation
- Director Water Division, Virginia Department of Environmental Quality
- Ms. Amanda Grey, Virginia Department of Environmental Quality
- Mr. Brian McGurk, Env. Program Planner, VDEQ
- Blue Ridge Regional Office, VDEQ
- Ms. Roger W. Kirchen, Virginia Department of Historic Resources
- Mr. Marc Holma, Virginia Department of Historic Resources
- Ms. Julie Langan, Virginia Department of Historic Resources
- Virginia Marine Resources Commission
- Director, DCR Dam Safety
- Ms. Sara Lu Christian, Director, Amherst County
- Amherst County Library
- Bedford County Administration
- Bedford County Library
- Lynchburg Library
- Mr. Timothy Mitchell, City of Lynchburg Utilities
- Mr. Clay Simmons, City of Lynchburg
- Mr. Justin Stauder, City of Lynchburg
- Mr. Greg Poff, City of Lynchburg
- Kristian M. Dahl, McGuire Woods, LLP

SCHEDULE A

Information Needed Only for an Exemption Application (18 C.F.R. §§ 4.31, 4.107, 4.302)

1. As required by section 4.107(a) of the Commission's regulations, please include, in the revised exemption application, documentary evidence (e.g., as an appendix) showing that the applicant (Scott's Mill Hydro, LLC) has the real property interests, as defined in section 4.31(c)(2)(ii), to all lands necessary to develop and operate the proposed project, including the proposed boat ramp and parking lot area, if the applicant still wishes to include these proposed facilities as part of its proposed project.

RESPONSE
Applicant has all the property interests necessary to develop and operate the proposed project. The proposed boat ramp has been removed from the project boundary pending completion of negotiations with Liberty University (LU) which owns the parcel of interest. Islands upstream of the project are not owned by Scott's Mill and are not included in the project boundary. However, Scott's Mill has a flowage easement up to three feet on all islands and shorelines within the headpond.

Documented evidence of ownership is provided in Appendix A.

2. As required by section 4.301, please notify each fish and wildlife agency that Scott's Mill Hydro consulted with of its intent to file an exemption application and request that those agencies provide, within 90 days of such notification, a reasonable estimate of the total costs the agencies anticipate to incur for setting mandatory terms and conditions for the proposed project under section 30(c) of the FPA.

RESPONSE
The fish and wildlife agencies were notified on October 29, 2020 and requested to provide their estimate of total costs the agencies expect to incur for setting mandatory terms and conditions. After considerable coordination, responses were timely received on March 24, 2021 from both the USFWS and VDWR. Their estimated costs are shown below. The USFWS and VDWR have both agreed to waive these costs and include payment as part of the settlement agreement.

U.S. Fish and Wildlife Service
Chesapeake Bay Field Office, Annapolis, MD 21401
Cost Estimate for FERC Scotts Mill 30(C) Exemption Application
SCOTTS MILL DAM HYDROELECTRIC PROJECT, FERC P-14425, JAMES RIVER, LYNCHBURG, VA

1. Jessica Pica, Fish Passage Engineer
2. David Sutherland, Fish and Wildlife Biologist

Biologist day rate	$711
USFWS Overhead rate	22%
Overhead total	$156
Total biologist day with overhead	$867

Conference calls and summary documents from Aug-Oct 2017	3 days x 2	$5,202
Preparation and Site Visit to Scotts Mill Dam November 6, 2017	2 days x 2	$3,468
Scott's Mill Project Draft License Application review, January 2, 2018	2 days x 2	$3,468
James River Assoc Meeting, Agency Meeting, November 8, 2018	1 day	$867
Design Questions to Applicant November and December 2018	2 days x 2	$3,468
Agreement in Principal calls and drafting March 1, 2019 to February 28, 2020	7 days x 2	$12,138
ER20/0274 OEPC File Number: PEP/NRM 9043.1, June 25, 2020	4 days	$3,468
Draft Settlement Agreement January 25, 2021 to March 24, 2021	5 days	$4,335
Final Settlement Agreement drafting and coordination	5 days	$4,335
FERC Final Environmental Review and REA Notice	4 days x 2	$6,936
Post Licensing Study Review and Coordination	4 days x 2	$6,936
Total Estimate	63 days	$54,621

Scotts Mill Estimated Costs to VDWR for Terms and Conditions

Personnel

Scott Smith
Alan Weaver

Daily rate for personnel time = $435/day/person
Mileage for Weaver = $115/day

Task	Personnel Time	Mileage	VDWR Cost
Establish and Review Terms and Conditions	2 people x 3 days	0	2,610
Monitor efficacy of Terms and Conditions (Year 1)	2 people x 8 days	920	6,960
Monitor efficacy of Terms and Conditions (Year 2)	2 people x 3 days	345	2,610
Monitor efficacy of Terms and Conditions (Years 3-9)	2 people x 2 days	230	1,740
Monitor efficacy of Terms and Conditions (Years 10-20)	2 people x 5 days	575	4,350
Subtotals		2,070	18,270
Total			20,340

Notes:
Personnel rate calculated from avg hourly rate plus fringe
Mileage rate calculated at $0.52/mi.

3. As required by section 4.302(a), please include, at the time of filing, a fee or a bond in the amount defined in section 4.302(b) in a check made payable to the United States Treasury indicating the payment is for *ECPA Fees* (section 4.304); also include copies of the most recent cost estimates provided by fish and wildlife agencies [section 4.301(b)] for setting mandatory terms and conditions for the proposed project under section 30(c) of the FPA.

RESPONSE
Both the USFWS and VDWR believe that there could be mutual benefits to fish and wildlife and Virginia power off takers when the Scott's Mill Project is completed. In addition, the project will provide renewable energy and offset carbon emissions. Accordingly, the USFWS and VDWR have agreed to waive the fees for preparing terms and conditions as part of this filing. In lieu of waving the fees, all Parties have agreed to include the cost of agency participation in the settlement agreement. Scott's Mill is awaiting confirmatory emails from the resource agencies. Copies of the agency emails will be filed with the Commission when they are received.

4. As required by section 4.107(7), please indicate the planned date for beginning and completing the proposed construction or development of the generating facilities.

RESPONSE
As noted in our November 20, 2020 filing, Scott's Mill Hydro, LLC proposes to start construction in the late summer of 2022. Project completion is expected within two years.

Schedule B
Project No. 14867

SCHEDULE B

Information Needed Only for a License Application (18 C.F.R. §§ 4.32, 4.61)

1. As required by section 4.32(a)(1) of the Commission's regulations, please identify every person, citizen, association of citizens, domestic corporation, municipality, or state that has or intends to obtain and will maintain any proprietary right necessary to construct, operate, or maintain the project.

2. As required under section 4.32(a)(2), provide the names and mailing addresses of every city, town, or similar local political subdivision that has a population of 5,000 or more people and is located within 15 miles of the project, and of all Indian tribes that may be affected by the project.

3. As required under section 4.32(a)(3), please notify, via certified mail, every property owner within the bounds of the project, or adjacent to any project works, of the filing of your license application; also notify, via certified mail, the applicable entities in section 4.32(a)(2). Such notification must contain the name, business address, and telephone number of the applicant and a copy of Exhibit G contained in the application, and must state that a license application is being filed with the Commission.

4. Please revise your Initial Statement by:
   a. indicating you are applying for a license rather than an exemption, as required by section 4.61(b)(1).
   b. indicating whether you are claiming preference under section 7(a) of the Federal Power Act, as required by section 4.61(b)(5).
   c. specifying when project construction is planned to be completed in relation to license issuance, as required by section 4.61(b)(9).

5. As required under section 4.61(c)(1)(x), please provide the estimated capital costs and annual operation and maintenance expenses of each proposed environmental measure.

SCHEDULE C

Information Needed for Both an Exemption Application and a License Application (18 C.F.R. §§ 4.32, 4.34, 4.39, 4.41, 4.107)

General Content

.

1. As required under section 4.32(a)(4), please provide a notarized sworn statement that the contents of the application are true, or in the alternative, as provided under 28 U.S.C. 1746, a statement in substantially the following form: "I declare (or certify, verify, or state) under penalty of perjury that the foregoing is true and correct. Executed on (date). (Signature)."

RESPONSE

The notarized sworn statement is provided at the end of this document and before the Appendices.

2. As required under section 4.32(b), please submit the application to the Secretary of the Commission in accordance with the filing procedures posted on the Commission's web site at www.ferc.gov; serve one copy of the application on the Director of the Commission's Regional Office for the appropriate region and on each resource agency, Indian tribe, and member of the public consulted pursuant to section 4.38 of the Commission's regulations. All maps and drawings filed as part of the application should conform to the requirements of section 4.39.

RESPONSE

Copies of the Application were provided to the appropriate parties per Section 4.38 of the Commission's regulations at the time the Application was filed in June 2020. Similarly, copies of the responses to the Commission's deficiency letter were emailed to the various parties on March 31, 2021. In cases where no email addresses exist, the parties were sent the responses via U.S. mail. Further, the responses are also provided on Applicant's web site at www.Scottsmillhydro.com.

3. Please publish notice of your application as required by section 4.32(b)(6) of the Commission's regulations.

Schedule C
Project No. 14867-001

RESPONSE

Notice of the Exemption Application is being published on March 31, 2021 or April 1, 2021. The proof of publication will be filed with the Commission once it is received by Scott's Mill. The notice provided to the News and Advance newspaper follows.

Scott's Mill Hydroelectric Project - Federal Energy Regulatory Commission – Application for Exemption

Scott's Mill Hydro, LLC (Scott's Mill) hereby notifies the Federal Energy Regulatory Commission (FERC or Commission) and interested parties its application for an exemption from a license was filed on June 17, 2020 and supplemented on March 31, 2021 for the Scott's Mill Hydroelectric Project to be located at the existing Scott's Mill dam on the James River in Lynchburg, Amherst County and Bedford County, Virginia.

Pursuant to the requirements set forth by 18 CFR § 4.32 (b)(6) and by the Commission's letter dated January October 28, 2020, the following information must be made public in reference to Scott's Mill's Exemption Application filed June 17, 2020 and FERC's deficiency letter dated October 28, 2020.

A. Application for an exemption to a hydropower license for a project less than 10 MW per 18 CFR § 4.32 (b)(5)

B. Response to FERC's deficiency letter dated October 28, 2020.

C. Summary of the Documents

1. Application for Exemption

An application for a hydropower exemption (less than 10 megawatts) for the Scott's Mill Hydropower Project was filed on June 17, 2020.

2. Response to FERC Deficiency Letter

The Commission identified deficiencies in the exemption application and requested additional information in a letter dated October 28,2020. The Applicant provided responses on November 20, 2020 and March 31, 2021. The exemption application and responses to the deficiencies can be found at www.scottsmillhydro.com.

1. Project Information

   License Applicant and Contact
   Scott's Mill Hydro, LLC
   Mark Fendig
   912 Wilson Highway
   Mouth-of-Wilson VA, 24363

2. Project Location and Description

The Scott's Mill Hydroelectric Project would be located at the existing Scott's Mill dam on the James River in Lynchburg, Virginia downstream of the Reusens hydroelectric dam. The existing Scott's Mill dam facilities include: 1) the dam, 2) reservoir, and 3) spillway. The dam is 15 feet high and 875 feet long. The dam impounds a 316-acre reservoir with a normal maximum water surface elevation of 516 feet mean sea level.
Scott's Mill proposes to construct a new powerhouse containing nine generating units with a total installed capacity of 4.5 MW, a new 1,200 foot-long underground transmission line, and appurtenant facilities. The project will have an estimated annual generation 20,700 megawatt-hours and will either be used by a nearby industrial facility or sold to a local utility.

D. Public Viewing of Exemption Application

Copies of these documents and the Commission's letter are available for inspection and reproduction at the following office:

Luminaire Technologies
912 Wilson Highway
Mount-of-Wilson VA, 24363

On Scott's Mill's web site at www.scottsmillhydro.com

E. Filing of Comments

The Commission will process or solicit additional study requests, as appropriate, after a revised exemption application has been filed with the Commission and the Commission will request interventions, recommendations, and terms and conditions on the application after Commission staff has reviewed its adequacy. Respondents can submit an original and eight copies of their comments to:

Office of the Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20428

Alternatively stakeholders can e-file their comments pursuant to 18 CFR § 385.2003(c) to FERC's website at http://www.ferc.gov/docs-filing/docs-filing.asp, where instructions are posted about how to file and view comments and documents in FERC's elibrary. For any comment submissions, it is important to include the project name and project number, "Scott's Mill Hydroelectric Project, FERC No. 14867" on the first page of any written comments.

Schedule C
Project No. 14867-001

4. Section 307(c)(3) of the Coastal Zone Management Act (CZMA) requires that all federally licensed and permitted activities be consistent with approved state coastal zone management programs. Although the consultation record in Appendix A provides a copy of a telephone memo from a conversation you had with the Virginia Department of Environmental Quality (Virginia DEQ), which oversees the state's coastal zone management program, please provide proof, via a letter or email from the state, of Virginia DEQ's concurrence with your conclusion that the proposed project is not located within Virginia's designated coastal zone and would not affect any resources within this zone.

RESPONSE

The following email was received from Bettina Rayfield of the Department of Environmental Quality (VDEQ) in response to the draft Record of Telephone Conversation (ROTC) prepared based on Scott's Mill's consultation with VDEQ. The ROTC presented following Ms. Rayfield's email includes VDEQ edits.

----- Forwarded Message -----
From: Rayfield, Bettina <bettina.rayfield@deq.virginia.gov>
To: luke graham <lukegraham_5@yahoo.com>
Sent: Thursday, January 3, 2019, 5:44:13 AM AKST
Subject: Re: Scott's Mill Dam Hydropower Project compliance with Coastal Zone Management Act

Luke,

I made an edit to reflect regulatory language. With these changes, it is acceptable to me.

Ms. Bettina Rayfield

Manager

Environmental Impact Review and Long Range Priorities Program

804.698.4204

Bettina.rayfield@deq.virginia.gov

Department of Environmental Quality

1111 East Main Street, Suite 1400

Richmond, Virginia 23219

Mailing address

Post Office Box 1105

Richmond, Virginia 23218

www.deq.virginia.gov

For program updates and public notices please subscribe to the OEIR News Feed

On Wed, Jan 2, 2019 at 4:00 PM luke graham <lukegraham_5@yahoo.com> wrote:

Bettina,
Thanks for your time today, I have prepared a brief summary of our discussion regarding the Scott's Mill Hydropower Project. Please look it over and note any changes that you feel would be necessary. Happy New Year.
Regards,
Luke Graham

- Bettina Rayfield DEQ Record of Conversation.docx

  13.4kB

Schedule C
Project No. 14867-001

RECORD OF TELEPHONE CONVERSATION

Person Called- Bettina Rayfield
Affiliation- Virginia Department of Environmental Quality
Phone Number- (804) 698-4204
Call Originator- Luke Graham
Date- January 2, 2019

Summary of Discussion

I contacted Bettina Rayfield of Virginia Department of Environmental Quality regarding the Scott's Mill Dam Hydropower Project and its certification of consistency with the Virginia Coastal Zone Management Program. I informed Bettina that the Scott's Mill Dam Project is a proposed major hydropower project with a capacity of less than 5 MW and will be located at the existing Scott's Mill Dam. Bettina stated that since the project falls outside the Coastal Management Zone and will be built upon an existing dam, the project is unlikely to have reasonably foreseeable effects on Virginia's coastal uses or resources and, therefore, no further action is necessary for the project.

Prepared by

Luke Graham

5. Exhibit E states a water quality certification application was submitted to Virginia DEQ on June 10, 2020. As required by section 4.34(b)(5)(i)(B), please provide proof of the date on which the certifying agency received the application for water quality certification (e.g., by providing an email or return receipt that shows when the certifying agency received the water quality certification application).

RESPONSE

The following emails document the filing of the water quality certification application and the agency's email response. The assigned application number is #20-1005.

Here is the agency tracking number for the Scotts Mill Dam Clean Water Act (CWA) Joint Permit Application (JPA). Mike Johnson is one of the env review engineers at VMRC.

Ben Leatherland, PWD, PWS

540.520.1533 mbl

bleatherland@handp.com

"Rough seas make great sailors."

From: Beth Howell [mailto:beth.howell@mrc.virginia.gov]
Sent: Thursday, June 11, 2020 11:08 AM
To: Ben Leatherland <bleatherland@handp.com>
Subject: RE: Scotts Mill Hydropower JPA

This has been assigned #20-1005. Mike Johnson will be processing this JPA.

Beth

Schedule C
Project No. 14867-001

From: Ben Leatherland <bleatherland@handp.com>
Sent: Wednesday, June 10, 2020 1:37 PM
To: JPA.permits@mrc.virginia.gov; Beth Howell <beth.howell@mrc.virginia.gov>
Cc: Wayne Dyok <dyok@prodigy.net>; Mark Fendig <mfendig@aisva.net>; Thornton James <runnerjim@gmail.com>
Subject: Scotts Mill Hydropower JPA

Hi Beth,

Attached, please find a non-tidal JPA for the proposed Scotts Mill Dam Hydropower Project. Please distribute to permitting agencies as necessary. We understand that FERC will likely be the lead federal agency. The applicant has been having protected species discussions with USFWS and VDGIF in the past 12 months or so.

Please call with any questions. Thanks, and have a great day.

Ben Leatherland, PWD, PWS
Sr. Environmental Scientist

HURT & PROFFITT
INSPIRED | RESPONSIVE | TRUSTED

2524 Langhorne Rd, Lynchburg, VA 24501
Phone: 434.847.7796 x686 - Fax: 434-847-0047 - Mobile: 540.520.1533
E-mail: bleatherland@handp.com Web: www.handp.com

6. As required under section 4.39(a), Exhibit G drawings must be stamped by a registered land surveyor. Please provide the Exhibit G drawing with the registered land surveyor stamp.

RESPONSE

Applicant has been working with LU on a long-term lease for the recreational boat ramp. Although both parties recognize that the lease is in their mutual interest, no

lease agreement has yet been finalized. Accordingly, the recreational parcel has been removed from Exhibit G. Scott's Mill is including Exhibit G, Sheet 2 with this filing. It includes the registered land surveyor's stamp. Sheet 1 will be provided after the land surveyor completes their survey work to exclude the recreational parcel and extend the project boundary to the Reusens downstream project boundary.

7. The exemption application did not include project boundary data in a georeferenced electronic format. As required under sections 4.41(h) (for a license application) and section 4.107(d) (for an exemption application), please provide an Exhibit G map that conforms to the specifications of section 4.39. In addition to the other components of Exhibit G, the applicant must provide the project boundary data in a georeferenced electronic format—such as ArcView shape files, GeoMedia files, MapInfo files, or any similar format.

RESPONSE

The Exhibit G was prepared in the electronic format required by the Commission. However, when filed only a PDF version was provided to the Commission. The georeferenced electronic format file is provided separately in this filing. At this time only Sheet 2 of the project boundary is provided. This sheet includes all the project works. Sheet 1 shows the entire project boundary from downstream of Scott's Mill Dam upstream to the downstream boundary of the Reusen's Project. Our surveyor has determined that additional information is needed to complete that portion of the map. However, no lands are included in that part of the project boundary.

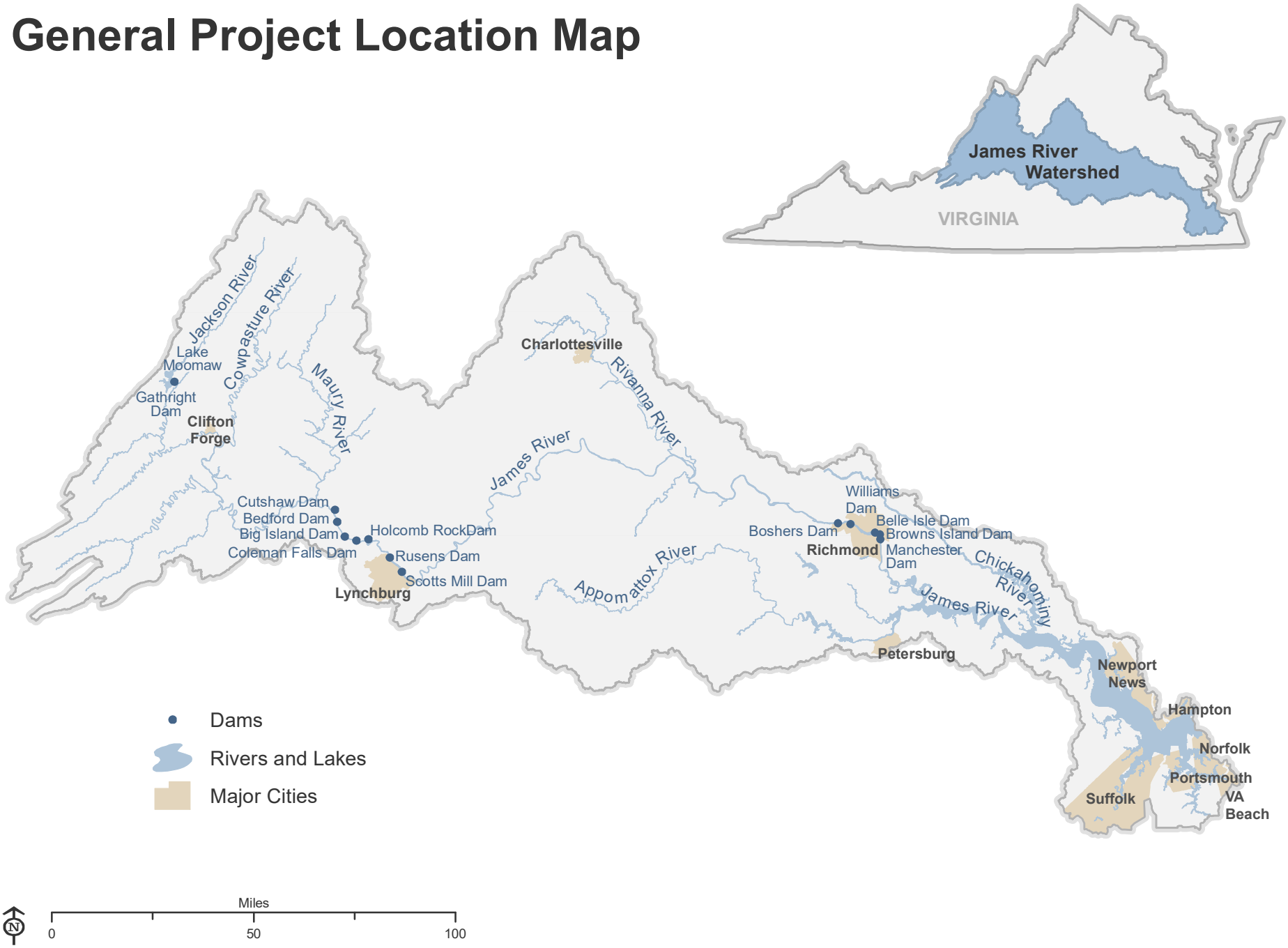
8. As required under section 4.41(h)(1), the map in Exhibit G must show the location of the project as a whole with reference to the affected stream or other body of water and, if possible, to a nearby town or any other permanent monuments or objects, such as roads, transmission lines or other structures, that can be noted on the map and recognized in the field; and also show the relative locations and physical interrelationships of the principal project works and other features described under Exhibit A. However, the map in Exhibit G does not show the relative locations and physical interrelationships of principal project works. Therefore, please depict the principal project works on the Exhibit G project boundary map.

RESPONSE
The Exhibit G (Sheet 2) has been revised to provide the relative locations and physical interrelationships of all the principal project works and other features. The islands are not included in the project boundary as they are not needed for project operations.

9. The project location map (figure A-1) in Exhibit A is difficult to read and interpret. Please modify the map by providing an inset (watershed) map that is separate from and does not blend into the main map; also include a scale bar on the main map.

RESPONSE
Figure A-1 has been modified to add a bar scale and clearly separate the inset from the location map.

General Project Location Map



10. Sections 2.4, 6.1, and Table E-6-4 of Exhibit E indicate the project is located at river mile 260 on the James River, whereas section 1.0 of Exhibit A states the project is located at river mile 252. Please clarify this discrepancy and use a consistent river mile designation for the project throughout the application.

RESPONSE
Two different data bases were used in the development of the application. The primary data base used River Miles ([RM] and River Kilometers [RKM]) according to Virginia Department of Game and Inland Fisheries, now Virginia Department of Wildlife Resources (VDWR) nomenclature. The RKM were converted to river miles. Scott's Mill is located at RKM 416. That was converted to River Mile 260 but a more accurate conversion is RM 258.5.

On page A-3, the river mile is given as RM 252. The footnote states that this is based on the Federal Emergency Management Agency (FEMA) river mile determination. To ensure a consistent database henceforth, please make the following errata changes:
Page A-3 keep as River Mile 252 referenced to FEMA, but add in parentheses (RM 258.5 based on converting VDWR RKM to RM)
Page E-3 replace River Mile 260 with River Mile 258.5
Page E-15 replace River Mile 260 with River Mile 258.5

Geology and Soils

11. Page 21 of Appendix B, which contains responses to comments on the draft license application, indicates that an erosion and sediment control plan would be prepared, but there is no mention of such a plan elsewhere in the document (i.e., in the main body of the application in Exhibit A or E). Therefore, please confirm whether you formally propose to develop an erosion sediment control plan for the proposed dredging work that would be conducted upstream and downstream of the dam.

RESPONSE
Yes, Scott's Mill proposes to prepare an erosion and sediment control plan. Such a plan is also likely to be required by the Virginia Department of Environmental Quality (VDEQ). The list of proposed environmental measures has been revised and is included in the response to Comment 21 below.

Aquatic Resources

12. Section 4.3 of Exhibit E states the impoundment serves as a backup water supply for the City of Lynchburg, whereas section 6.3.2.1.6 of Exhibit E states the backup water supply is located downstream of the project dam. Please clarify this discrepancy and describe the location and magnitude of any water supply withdrawals in the project vicinity.

RESPONSE
The City of Lynchburg has pump stations on the James River both upstream of Reusens Dam and downstream of Scott's Mill Dam in downtown Lynchburg. The pumphouse intake is located approximately 3,000 feet downstream of Scott's Mill Dam near the 5th Avenue bridge. The capacity of the pump station is 10 mgd (approximately 15.5 cfs).

13. In our comments on the draft license application (DLA), we indicated the existing water quality data that had been collected to date (limited to 2 days of sampling) was insufficient to characterize the existing baseline conditions at the proposed project and evaluate the potential effects of project operation on upstream and downstream water quality. Based on our review of the exemption application, it appears no additional water quality data has been provided or collected following our comments on the DLA. Therefore, please note that if longer-term, more representative, water quality data are not provided from upstream and downstream of the dam, staff may request, during our adequacy review of the application, that a water quality study be conducted during the low-flow high-temperature season to allow staff to describe the existing environment and support its environmental analysis of potential project effects on water quality.

RESPONSE
Commission staff requested additional long term water quality data to better characterize water quality in the vicinity of the site. Staff further noted that a more detailed water quality study may be required as part of the license order if no further data is provided. The Virginia Department of Water Quality (VDEQ) performs a bi-monthly (six times per year) sampling and analysis of key water

parameters. The licensee was able to obtain ten years of data (2010-2019) for the closest water quality sampling sites at river mile 269.3 (upstream near Holcomb Rock) and river mile 257 (downstream at the Route 29 bridge.) These sites are located approximately 11 miles upstream and 1.5 miles downstream of the existing Scotts Mill dam (river mile 258.5). The VDEQ data are summarized in Table 1. The data support the information collected by Scott's Mill and show only minor differences between the upstream and downstream sampling sites.

Table 1: James River, VA Water Quality Data
Information in the table below is for 10 years (2010 - 2019). Data based on VDEQ sampling 6 times per year at standard sampling sites.

Parameter	Units	Station							
		2-JMS270.84 - Upstream				2-JMS258.54 - Downstream			
		Count	Max	Min	Mean	Count	Max	Min	Mean
Depth	Meters	60			0.3	60	30		0.3
Temperature, Degrees Celsius	°C	60	28.8	2.2	15.84	60	30	0.96	16
Field pH	Std Units	60	8.7	6.7	7.8	60	8.8	7.1	7.8
Nitrogen, Kjeldal, Total, as N	mg/l	60	3.4	0.1	0.45	60	1.6	0.1	0.36
Nitrogen, Total, as N	mg/l	59	0.5	4.38	0.58	57	1.21	0.27	0.59
TSS Residue, Total Nonfiltrable NONFILTRABLE	mg/l	60	322	20.5	1	60	359	1	18.1
Turbidity	NTU	60	228	1.43	14.5	60	222	1.27	15.9
TS Residue, Total Solids	mg/l	60	411	212.5	115	60	313	47	183
E. Coli - MTEC - MF	NO/100ml	60	5794	10	225.8	60	2755	10	235
Fecal Coliform, Memberane Filter	CFU/100ml	60	2000	25	190.6	60	2000	25	285
Phosphorus, Total, as P	mg/l	58	0.56	0.01	0.07	60	0.47	0.01	0.47
Calcium	mg/l	2	21	17.4	19.2	2	15.4	4	9.7
Magnesium	mg/l	2	4.1	3.1	3.6	2	4	2.8	3.4
Dissolved Oxygen	mg/l	60	13.9	7.05	10.1	60	14.59	7.7	10.52
Specific Conductance	µmhos/cm	60	502	72	284	60	469	70	254
PCB, Total Concentration	pg/ml	3	600	457	388	3	3216	222	1351

14. Section 6.3.3.1.2 of Exhibit E states that muskellunge are stocked in the James River. To allow staff to assess the potential for the project to affect this managed game species (e.g., via turbine mortality or impingement), please specify where stocking occurs

in relation to the proposed project and the approximate number and sizes of fish that are stocked as well as the frequency of stocking.

RESPONSE

Commission staff asked the applicant to quantify timing, number and size of fish stocked by the Virginia Department of Wildlife Resources (VDWR) in order for staff to assess the potential for the project to affect this managed game species. The application noted that Muskellunge are stocked in the James River. However, per the VDWR, Muskellunge stocking was discontinued in 2010 as the fishery became self-supporting and stocking was no longer required.

15. Summaries of the resident fish community at the project (e.g., in section 6.3.3.1.4 of Exhibit E) are not project-specific and are instead based on sampling data that are pooled across large portions of the James River (e.g., river mile 104 to 228). To allow staff to more accurately assess the potential effects of the project on the local fish community, please provide more precise location-specific fish survey data (ideally from the project impoundment and immediately downstream of the dam). If such project specific data are not available, please report fish survey and associated catch data from the nearest available locations upstream and downstream of Scott's Mill Dam. To support staff's analysis, please include information on the sampling gear, effort, location, and dates of the fish survey data that were used, as well as any fish size data that were collected.

RESPONSE

Commission staff requested the applicant provide fish community data in proximity of the proposed project. VDWR provided fish community sampling data to Scott's Mill. Summary data are provided in Appendix B. Appendix B also provides the raw fishery data. VDWR ceased sampling the Scotts Mill Reservoir (Red & Dots, river mile 260) in 2000. The reservoir fishery data was collected between 1991 – 2000. VDWR also provided more recent data for its Lynchburg site (river mile 257, about 1.5 miles downstream of the dam) and the Monacan Pond (Monacan) site, (river mile 266) about 7 miles upstream of the dam (also above Reusens dam). The data reported for these two sites was collected from 2010 to 2019 and is also included in Appendix B.

16. Sections 4.2.1 and 6.3.3.2.3 of Exhibit E state that based on the results of computational fluid dynamics modeling, Scott's Mill Hydro may install guide vanes on the trash racks to reduce fish entrainment and impingement. So that staff can accurately assess the potential effects of the project on resident and migratory fish, including their

susceptibility to entrainment and impingement, please indicate in the application whether you propose to install the guide vanes, and if so, whether the guide vanes would result in a narrower effective clear spacing than the currently proposed trash racks that would have a 2-inch clear spacing.

RESPONSE

The vanes in the trash racks are oriented 135 degrees away from the flow. While they are on 3" centers at the front of the rack, because they are on a 45-degree diagonal, the actual spacing, measured perpendicular to the vanes themselves, is effectively 2-1/8" on center, giving rise to 2" clear spacing between adjacent vane surfaces. That being said, the proposed Scott's Mill hydropower plant has been designed so that the hydraulic flows – rather than the bar spacing as such – serve as the primary means of exclusion. The flow direction will change to some degree as different turbines in the array are brought online and/or shut down, but the essential principle is that the fish swim parallel to the trash racks and do not turn to enter the trash racks. In order for a fish to enter behind the trash rack, it would have to execute a 135 degree turn and burst-swim at about 45 degrees from upstream. While not impossible, fish passage experts at Alden, opine that it is highly improbable, as there is no attraction flow or any other reason for passing fish to execute such a course change.

17. Table E-6-4 of Exhibit E provides catch-per-unit effort (CPUE) data for eels at Scott's Mill Dam and other nearby dams on the James River, but provides no indication of the level of sampling effort upon which these data (boat electrofishing) are based. Therefore, for all CPUE estimates in Table E-6-4, to the extent that information is available, please indicate the number of hours (e.g., pedal time), dates, and locations of boat electrofishing samples upon which these CPUE estimates were based, as well as any eel length data that are available from these surveys.

RESPONSE

Commission staff requested American Eel data related to effort proximate to the Scotts Mill Dam. These data are provided in Appendix B. As noted above, the RM 260 data was collected 1991 – 2000 and the RM 257 and 266 sites 2010 – 2019. The summary data indicate that the catch per unit effort were similar in the Scott's Mill headpond and downstream of Scott's Mill Dam. However, upstream of Scott's Mill the CPUE was considerably lower. This indicates that American

eel are able to make it upstream of Scott's Mill, but have a much more difficult time passing upstream of Reusens because the Reusens Dam is considerably higher than Scott's Mill.

18. Section 6.3.3.2.4 of Exhibit E states the rotational speed of the turbines has not been finalized and that the applicant is working with the manufacturer to determine if the rotational speed of the proposed units can be decreased from 300 to 450 revolutions per minute (rpm) to 150 to 200 rpm. The survival of entrained fish is highly dependent on the rotational speed of hydropower turbines, as survival decreases with increased rotational speed. Therefore, prior to submitting the application, the design and specifications of the turbines you propose to install at the project should be developed to the extent that allows an accurate assessment of the entrainment mortality of resident and diadromous fish, including American eel. The application should include an assessment of the expected turbine mortality through the proposed turbine units chosen for the project based on field studies where similar modular-style powerhouse units have been installed or upon model-based estimates of mortality from the manufacturer (note that because the proposed turbines do not appear to be conventional Francis or Kaplan-style units, the blade strike model of Franke et al. (1997), which is based on Kaplan and Francis units, may not be applicable in estimating mortality through the proposed modular units).

RESPONSE

As discussed under Comment 16 above, the proposed turbines are essentially identical to traditional Kaplan units. The principal difference is that instead of using adjustable-pitch runner blades as would be found in a traditional Kaplan, in the turbines contemplated for use at Scott's Mill, the runner blades are fixed and, rather, the inlet guide vanes are adjustable. This is a less costly way to accomplish essentially the same thing. The logic control for the turbine optimizes for efficiency given instantaneous head and flow, by (i) articulating the guide vanes and (ii) varying the operating speed of the turbine. The maximum design speed of each turbine is assumed to be 250 RPM. The operating speed will vary from 175-250 RPM based on operating flow and head. Fish passage, to the extent relevant, can be accurately assessed by treating each unit as a fixed-blade Kaplan with a 52" runner using the peak RPM; Scott's Mill is working with the turbine manufacturer to create meaningful through-turbine survival data. Since the units act like Kaplan units, Franke et al. should be applicable. It must be reemphasized, however, that the proposed plant is being designed so as to exclude fish from the turbines altogether. If necessary, during detail design,

Scot's Mill can apply Franke et. al., if the CFD modeling indicates turbine entrainment potential.

19. Please indicate if the upstream fish passage structures for American eel and sea lamprey would consist of ramp-type structures and whether the structures would include a collection device. If a collection device is proposed, describe the methods for monitoring and releasing captured eels and sea lamprey. Also indicate the proposed season of operation for the upstream eel/lamprey passage facilities and whether the structures would be installed (and removed) on a seasonal basis or constitute permanent structures.

RESPONSE

Yes, ramp type structures are anticipated for passage of American eel and Sea Lamprey. At this time, no decision has been made whether there would be a collection device, but this is likely to be the case. This will certainly be the case if a trap and haul program is developed in conjunction with upstream hydropower owners. Based on the settlement agreement that is currently in negotiation, a collection or counting device is likely to be required.

Eel collection will be accomplished in consultation with the USFWS and VDWR. Because Scott's Mill Dam is 258.5 miles upstream from the mouth, American eels may move slightly later in the spring than at projects like Roanoke Rapids and Gaston on the Roanoke River which are closer to the mouth of the river and in a slightly warmer climate. At Roanoke Rapids, American eel move upstream during high flows when river water temperatures reach 60 ^{0}F. At Roanoke Rapids American eel typically move upstream from mid-March through mid-May and from mid-September through mid-October. A similar time table is expected at Scott's Mill, but the timing of operation will be adjusted as necessary in consultation with the USFWS and VDWR.

Because winters are not severe in this location, we anticipate that the passage facilities would be permanent structures like they are at Roanoke Rapids. However, during detail design, consideration will be given to the potential effects of large floods. Some components of the passage facility could be installed as seasonal structures.

20. Page E-57 of Exhibit E states that fish will be passed safely downstream, into the tailrace, through a 'debris and fish passage module.' Please provide a more detailed description of how this system would work and indicate if this is the primary method by which adult silver eels and juvenile sea lamprey would be passed downstream of the dam during their seaward migration.

RESPONSE

Scott's Mill anticipates that there will be two primary ways for American eel to pass downstream: over the dam and through the debris passage module. It is difficult to determine how many American eels would pass over the dam versus through the fish passage/debris module. Most of the time, the flow over the straight portion of the dam will be small relative to the powerhouse flows. Accordingly, if eels migrate downstream when flows are less than about 4,500 cfs, it is expected that the majority of eels would migrate downstream passing the powerhouse entrance and then through the fish passage module. If American eels migrate downstream during higher flows (say 8,000 cfs or more), then most of the eels would be expected to stay in the main channel of the James River and pass over the dam.

Given the success of the Sullivan Dam downstream passage structure on the Willamette River in Oregon, Scott's Mill expects that the American eels that pass through the powerhouse intake channel, we go through the fish passage module. Eels that are 1.4 to 4 feet in length are not expected to turn 135 degrees and go through the trash racks. Rather, they are more likely to proceed with the downstream current past the turbine intakes.

The debris and fish passage module will work much like an Eicher screen. As the American eels get closer to the module the flow will accelerate because cross sectional area is reduced. In essence the American eel will swim up an inclined ramp. As the eel move up the ramp the flow will accelerate sufficiently so that the American eel are swept over the top of the inclined ramp into a downstream plunge pool.

21. There are several inconsistencies between the proposed environmental measures in the main body (Exhibit E) of the application and the Agreement in Principle (AIP) reached with the resource agencies that is provided in Appendix A. First, the AIP specifies that upstream passage for anadromous species such as American shad would be

installed within 10 years of license issuance, whereas Exhibit E more generally states the powerhouse would be designed in anticipation that a vertical slot fishway or nature-like fishway would be installed in the future. Secondly, Exhibit E states that a half-inch veil flow (approximately 30 cubic feet per second [cfs]) would be provided over the spillway during normal project operation, but the AIP states the expected veil flow would be 1 inch above crest. Lastly, Exhibit E indicates that post-licensing water quality monitoring would only be conducted upstream of the dam, but the AIP indicates that such monitoring would occur both upstream and downstream of the dam. Therefore, to facilitate staff's review of the benefits, costs, and environmental effects of your proposed actions, please ensure that the application includes a cohesive and consistent set of proposed measures; also include a bulletized list of your proposed operation and environmental measures.

RESPONSE

Resource agencies and Scott's Mill are working to finalize the settlement agreement which builds upon the AIP. The agencies have taken the lead on developing the settlement agreement. Based on recent discussions with the USFWS and VDWR, Scott's Mill expects that the settlement agreement will be signed in April or May. At that time, it will be filed with the Commission and become the master document for proposed environmental measures.

We believe that the discrepancies between the AIP and Exhibit E are not significant. Nonetheless, following this response is an updated section on proposed environmental measures. It may be adjusted in future to be fully consistent with the settlement agreement once it is finalized.

Although the AIP references a 10-year horizon for installation of upstream species like American shad, the trigger is the number of shad arriving at VDWR's monitoring site downstream of Scott's Mill. The AIP assumes that this would occur within 10 years. The application was more general with respect to the future. A key that agencies and Scott's Mill agree upon is that both a vertical slot fishway and nature-like fishway will be considered. Scott's Mill is prepared to move forward with American shad passage once the trigger point is met.

With respect to the veil, a key aspect is the flow over the 735 foot-long straight section of Scott's Mill Dam needed to protect downstream water quality. Scott's

Mill estimated this to be about 30 cfs and possibly higher during low flows when air temperatures are high. Flow over the dam is an important parameter because it affects both energy generation and downstream water quality. For a 30 cfs flow, Scott's Mill originally estimated the height of the veil over the dam to be on the order of ½ inch using a discharge coefficient of 3.5. Recent data indicate that the coefficient may be on the order of 2 to 2.5 for very low flows over the dam. If that is the case, then the veil would be between .75 and .9 inches with a 30 cfs flow. Note that the flow over the dam is still subject to additional adjustment to meet downstream water quality standards.

During operations, Scott's Mill will estimate the flow for a given veil height and then manage the headpond level to achieve that veil height as a minimum water level. Based on agency consultation the veil height could be a minimum of one inch during normal operations and possibly greater during summer, low flow conditions.

We agree that monitoring both upstream and downstream may be needed. However, if upstream monitoring indicates that water quality is protected, there may not be a need to monitor downstream dissolved oxygen because flow over the dam will increase it.

PROPOSED ENVIRONMENTAL MEASURES

Applicant proposes to operate the Scott's Mill Project in a run-of-river mode to minimize downstream environmental effects and to essentially maintain existing headpond water levels during project operations. **Table A-3** and **Figure A-22** compare the existing headpond levels to the proposed operation levels from low flows through flood flows. Although much of the flow will be directed to the right side of the river, the powerplant will also discharge directly to the area behind the straight section of the dam. The tailwater levels on the left side are expected to change only slightly because of this added flow and because a sill downstream in River Edge Park causes a backwater at the dam.

Applicant intends to dredge an existing channel at the southern end of Daniel Island just upstream of the dam to allow flow from the main channel to the powerhouse. This will have the effect of increasing circulation and maintaining water quality upstream of the main section of the dam. Applicant intends to implement a soil erosion and control plan that would include dredging operations. Applicant will confirm dredging dimensions during detailed design in conjunction with the specifics of turbine discharge, but the width of the channel is expected to be about 130 feet with a length of about 100 feet. If necessary, during low flow conditions, flow can also be released over the spillway to maintain water quality. Applicant also proposes the following environmental measures:

- Monitor water quality (temperature and dissolved oxygen) upstream and downstream of Scott's Mill Dam.

- Provide immediate upstream passage for American Eel and Sea Lamprey.

- Work with other upstream dam owners, resource agencies, and other licensing participants to restore anadromous fish to the upper James River Basin (see Agreement in Principle on future fish passage in **Appendix A)**.

- Provide an approximate 1-inch veil of water over the dam, to preserve downstream environmental water quality. This would be achieved through a water level monitoring gauge upstream of the dam and using the Holcomb Rock gauge to estimate inflow and matching project output to release flows that are slightly below the inflow level. If the water level falls below 1 inch over the weir, the turbine flow will be adjusted (reduced) to enable the upstream water level to be maintained. It is likely that through this process, the water level in the headpond will result in a veil greater than 1 inch. If the water level exceeds one inch, a further adjustment can be made to increase the flow through the turbines. Applicant uses a similar strategy to maintain flows over the Cushaw dam. Such operation usually results in a more conservative operation and water levels that are greater than the 1inch veil. Coordinated operations with the upstream Reusens could also facilitate maintaining the veil.

- Direct approximately half the flow from the upstream turbines into the main channel of the James River to preserve habitat quality in the area immediately downstream of Scott's Mill Dam. This will be accomplished by orienting the upstream turbine flow discharge toward the main channel. As necessary, the area upstream of the island downstream of the dam (Anthony's Island) will be excavated to achieve this goal. Because there is already a hydraulic connection between the main channel and the channel downstream of the arch section of the dam, orientation of the turbine discharge may be sufficient.

- Avoid entrainment by orienting the powerhouse more in line with the direction of flow. Downstream migrating fish will tend to swim with the current rather than turning 135 degrees to enter the turbine intake.

- Minimize and mitigate any effects to wetlands both upstream and downstream of Scott's Mill dam.

- Provide a canoe portage around Scott's Mill Dam on the left side of the James River. The portage will skirt the proposed American Eel and Sea Lamprey ladder on the left side of the river and will be designed in coordination with that facility.

- Work with Virginia Marine Resources Commission (VMRC) and Virginia Department of Wildlife Resources (VDWR) to provide boat ramp facilities to the public at the upper end of the headpond adjacent to Harris Creek. (There are boat ramps on both sides of the river within a mile downstream of Scott's Mill Dam, so no additional boat ramps are needed downstream.) The proposed boat ramp has been removed from the Exemption Application, but will be included in a Settlement Agreement with the resource agencies.

- Provide a fishing pier on the left side of the river downstream of the dam.

- Prepare a Historic Properties Management Plan (HPMP) to protect cultural resources in the Area of Potential Effects (APE). The HPMP will include provision for signage to identify the various cultural resources in close proximity to the site (e.g., Scott's Mill Dam, Scott's Mill grist mill site, water works canal on the right bank).

- Applicant considered connector trails and public camping, but determined there is insufficient space along River Road to provide for these recreational opportunities. On the right side the existing railroad, US Pipe Company facility and the steep bank preclude connector trails to nearby existing trails.

22. The AIP indicates that upstream passage for resident fish and anadromous species such as American shad would be installed within 10 years of license issuance. However, the AIP also notes that if American shad reach the project more than 10 years after license issuance, that upstream passage would be provided immediately. Based on these statements, it is unclear if you propose to provide upstream passage for American shad within 10 years of license issuance regardless of whether this species is observed during routine sampling by Virginia Department of Wildlife Resources (Virginia DWR) that occurs downstream of the project. Therefore, in the application, please clarify when, and under what conditions, Scott's Mill Hydro proposes to install upstream passage for American shad (or anadromous species).

RESPONSE

As noted in comment response 21, the trigger for fish passage is based on American shad sampling downstream of Scott's Mill Dam. If juvenile shad are found, at VDWR's monitoring site downstream of Scott's Mill, upstream passage

of American shad will be provided. This could be less than 10 years or more than 10 years after the Commission grants the Exemption.

23. The Water Quality Study Report in Appendix J indicates that surface water temperatures in the Scott's Mill impoundment were 3.6 degrees Fahrenheit (°F) to 7.2°F cooler, and dissolved oxygen (DO) levels 1.6 milligrams per liter (mg/L) to 3.2 mg/L lower, than surface waters in the impoundment of the upstream Reusens Project (FERC Project No. 2376). This difference is attributed to the release of cooler, deeper (less oxygenated) bottom waters through the Reusens Project into the Scott's Mill impoundment. However, according to the project record for the Reusens Project, that project was not operating from 2012 through July 2017,[1] including the September 2016 sampling period at Scott's Mill Dam (during which time the Reusens Project was presumably spilling all inflow through its surface floodgates into the Scott's Mill impoundment). Therefore, to assist staff in understanding the potential effects of the operation of the upstream Reusens Project on water quality in the Scott's Mill impoundment, please clarify this discrepancy and provide an explanation for the considerably lower water temperatures and DO levels in the Scott's Mill impoundment (compared to Reusens) that were observed during September 2016.

RESPONSE

Although the Reusens project was not operating and flow was spilling through the surface spill gates, it is likely that water was being withdrawn from the top section of the water column, not just the top foot of the water column. Depending upon the level of stratification, the mixture of water released from Reusens would include cooler, less oxygenated water from the Reusens reservoir, perhaps even from depths below 10 feet.

The 7.6 mg/l DO sample in the Reusens tailrace could be the product of the 9.6 mg/l surface water and less oxygenated water at greater depths. Please note that Table 3 of the Appendix J water quality section of the Exemption Application indicates that in the Scott's Mill headpond, the DO decreases from 8.4 mg/l at the

[1] Notice of Intent and Pre-Application Document filed for the Reusens Project on February 28, 2019. Accession No. 20190228-5222.

surface to 6.9 mg/l in the DO profile taken upstream of Scott's Mill Dam. Without conducting a flow net analysis and having a DO profile in Reusens reservoir upstream of the dam, it is difficult to say for certain that this is the case, but Scott's Mill stands by its explanation in Appendix J that water is being withdrawn from the water surface and deeper areas of Reusens reservoir. The same explanation holds for water temperatures upstream and downstream of Reusens.

Terrestrial Resources

24. Page G-3 of the Terrestrial Habitat Report (Table 1, Appendix G) provides a list of vegetative species that were observed on the riverbanks and islands. In the narrative description on pages G-2 and G-3, the report indicates that the southwestern riverbank has the smallest abundance and diversity of species and the islands have the greatest abundance and diversity. To help staff understand the composition of species at the project, please specify where the species listed in Table 1 were observed and clarify if these species are present in all locations surveyed, or if some of the species are only present in specific locations (i.e., the southwestern riverbank, northeastern riverbank, or one or more of the islands).

RESPONSE

See revised table below:

Table 1: Dominant Vegetative Species Observed

TREES:	***SW Riverbank***	***NE Riverbank***	***Islands***
River birch (*Betula nigra*)	*	*	*
Tuliptree (*Liriodendron tulipifera*)	*	*	*
Sycamore (*Platanus occidentalis*)	*	*	*
Red maple (*Acer rubrum*)	*	*	*
Tree-of-Heaven (*Ailanthus altissima*)	*	*	*
Black locust (*Robinia pseudoacacia*)	*	*	*
Flowering dogwood (*Cornus florida*)			*
Shagbark hickory (*Carya ovata*)		*	*
American beech (*Fagus grandifolia*)		*	*
Chestnut oak (*Quercus prinus*)			*
Northern red oak (*Quercus rubra*)		*	*
Sweetgum (*Liquidambar styraciflua*)			*
Green ash (*Fraxinus pennsylvanica*)	*	*	*
SHRUBS:			
Hazel alder (*Alnus serrulata*)		*	*

Boxedler (*Acer negundo*)			*
Chinese privet (*Ligustrum sinense*)	*	*	*
Sweetbay (*Magnolia virginiana*)		*	*
HERBACEOUS VEG. AND WOODY VINES:			
Wild grape (*Vitis* spp.)		*	*
Poson ivy (*Toxicodendron radicans*)	*	*	*
Blackberry (*Rubus* spp.)	*	*	*
Greenbrier (*Smilax* spp.)	*	*	*
Soft rush (*Juncus effusus*)			*

25. Page 21 of Appendix B, which contains responses to comments on the DLA, states that wetland maps of the area upstream of the Scott's Mill Dam are presented in Appendices J and G. However, the only map presented in either place is a map of the wetlands on Daniel Island. Please provide wetland maps that cover the entire project area.

RESPONE

Liberty University (LU) conducted a previous 2013 wetland delineation on Daniel Island (upstream of the Scott's Mill Dam), which was then verified by the US Army Corps of Engineers (USACE) on 1/22/2014. Since verified wetland delineations are valid only for five (5) years, this delineation expired on 1/22/2019. We are aware of no changes on Daniel Island since that time which would have altered hydrology, soils, or vegetation. Current wetland boundaries may therefore be similar to prior wetland extents in 2013-2014.

Four other upstream islands (including Treasure Island Woodruff Island) and one downstream island (Percival Island) are located within the study area. US Department of Agriculture (USDA) Web Soil Survey (WSS) records indicate that these other five islands are comprised of 9A soils (Combs loam, 0-3% slopes, frequently flooded, 1-33% hydric/wetland). In contrast, only the upstream (northwestern) end of Daniel Island is composed of 9A soils, with the remaining 90% of the Daniel Island being either CT soils (Chewacla-Toccoa complex, 33-65%

hydric/wetland) or 31A soils (Sindion-Yogaville complex, 0-3% slopes, frequently flooded, 33-65% hydric/wetland). For the purpose of this wetland mapping effort, the entirety of the six primary islands (from upstream to downstream: un-named island, Woodruff Island, Treasure Island, un-named Island, Daniel Island, Percival Island) and a small area of 9A soil along the northeastern riverbank (at the NW end of Woodruff Island) are assumed to be potentially-jurisdictional wetlands (total area of approximately 160 acres). Due to steep 3-6' high slopes along the riverbanks and islands though, less than one acre of potentially-jurisdictional wetland area is likely to be affected by proposed project additional impoundment (and such effects will be similar to what these areas already experience in response to localized flooding). Appendix C contains a USDA WSS map excerpt indicating potential hydric soils within the project area.

A wetlands survey of the islands within the study boundary was conducted in March 2021. The survey indicated that the project would not affect wetlands. The consultant report is provided in Appendix C.

26. Page E-62 states that "downstream water level effects are expected to be very minor and hence, there should be little or no effect on riparian vegetation." However, the application provides very little information about riparian habitat downstream of the dam and the study area for the Terrestrial Resources Report (Appendix J) does not appear to include any of the area downstream. To support staff's analysis, please describe the riparian habitat downstream of the dam and provide an estimate of the magnitude of fluctuation downstream of the project.

RESPONSE

Dominant riparian vegetation upstream and downstream of Scott's Mill Dam is generally similar in terms of species composition, density, and diameter (see Comment 24 response species list above). However, tree and sapling diameters on the upstream (NW end) of Percival Island (also known as Anthony Island) appear to be 20-30% smaller than on islands between Scott's Mill Dam and Reusen's Dam upstream. This may be due to periodic flood flow scour here (as riverine substrate also appears to be larger diameter here than substrate within the upstream Scott's Mill Dam impoundment upstream). The extent of riparian vegetation inundation downstream of Scott's Mill Dam will likely be comparable to periodic Q1-Q5 flood flow. However, the frequency of this inundation may be more frequent.

27. Page E-62 states that proposed dredging will occur in an area of "probable" wetlands and any wetland impacts would be mitigated, as required by the U.S. Army Corps of Engineers. However, no specifics are provided regarding how you plan to mitigate those wetland impacts. To assist staff's analysis, please describe any proposed measures to mitigate impacts to the affected wetlands.

RESPONSE

In Virginia, the USACE and VDEQ have developed a compensatory mitigation hierarchy, with purchase of commercial mitigation bank credits as the first (preferred) alternative, followed by purchase of credits from the Virginia Aquatic Resources Trust Fund (VARTF - second choice), and then applicant-proposed on-site or off-site mitigation (final options). Available mitigation credits are tracked using the USACE Regulatory In-Lieu Fee and Bank Information Tracking System (RIBITS), which currently indicates 0.14 ac of available wetland credits and 27,791 lf of available stream credits from a total of seven commercial mitigation banks within the Middle James River Basin Service Area (HUC 2080203). In this river basin/service area, VARTF presently has 0.46 ac of wetland credits and 4,987 lf of stream credits available. If insufficient mitigation credits are available, the proposed project will discuss off-site mitigation options with USACE and VDEQ staff during the Clean Water Act (CWA) Section 404/401 permitting process.

Threatened and Endangered Species

28. According to U.S. Fish and Wildlife Services IPaC database,[2] the northern long-eared bat, a federally endangered species, has the potential to exist in the project area. However, no studies were conducted. Page A-54 states that, during the study planning process, it was determined that the project has the potential to impact bat roosting habitat, but based on the applicant's pre- and post-project water level studies, as well as the terrestrial study, Scott's Mill Hydro's biologist determined there would be no effect to bats based on hydrology and shoreline steepness. Page E-65 of the application states that the project "will have little effect on water levels and primarily affect steep shoreline areas" and claims "that bats were unlikely to be affected by the project." However,

[2] https://ecos.fws.gov/ipac/.

although you have determined bats will be unlikely to be affected, the federally endangered northern long-eared bat has the potential to be present in the project area. Therefore, please provide a description of any northern long-eared bat habitat that is located within the project area studied for the Terrestrial Habitat Assessment (Appendix G). Also, please clarify if you are planning any tree-clearing activities related to your proposed construction or dredging activities.

RESPONSE

Northern long-eared bat (NLEB) summer roosting habitat (mature trees larger than 2-4" in diameter, with loose bark) is present along much of the James River and throughout the surrounding region. For most land-development projects, potential bat impacts are minimized by ensuring that any required tree clearing occurs while bats are hibernating (no tree clearing within the April 15-September 15 time-of-year restriction [TOYR} period). Since the proposed Scott's Mill project should not require tree clearing, should not affect winter hibernacula (caves or structures), and should not increase upstream or downstream riparian vegetation inundation outside the normal range experienced by the river (due to periodic flooding), the potential to impact bat habitat should be minimal. The USFWS Information and Planning Consultation (IPaC) system requires a standard conclusion of "May Affect, Not Likely to Adversely Affect" for most project sites within the typical NLEB habitat range (if no tree clearing or structure demolition is proposed).

Recreation Resources

29. Page 7 of Appendix B states that, "Consultation with local recreation experts from the adjacent counties and resource agencies (e.g., Virginia Department of Conservation and Recreation and Virginia DWR), indicated the local recreation needs." To provide staff with a more accurate picture of recreation at the project, please provide a record of this consultation. The record should include the names of the experts with whom you spoke, the dates the consultation occurred, and a summary of what was discussed. If this information is already provided in the application, please indicate where it is located.

RESPONSE

Information related to local recreation consultation is spread throughout Appendix A part 1 and part 2 to Exhibit E, Record of Consultation. Examples include:

- Part 1, Pg. 16, recreation discussion at the December 2, 2015 joint meeting;
- Part 1, Pg. 25 – 27, input from the Upper James River Riverkeeper;
- Part 1, Pg. 41, VDWR no comment on recreation study plan;

Schedule C
Project No. 14867-001

- Part 2, Pg. 26, Joint meeting May 8, 2018;
- Part 2, Pg. 55, Settlement Agreement In Principle, Jan. 20, 2020

In addition to the consultation record, Scott's Mill has extensively coordinated with Amherst County and their consultant on the County's recreational needs. The following email correspondence is but one email between the County's consultant and Scott's Mill on a whitewater study conducted by Amherst County.

From: Wayne Dyok <dyok@prodigy.net>
Sent: Tuesday, November 13, 2018 1:49 AM
To: j.anderson126@verizon.net
Cc: Mark Fendig <mfendig@aisva.net>; Luke Graham <lukegraham_5@yahoo.com>; dcrodgers@countyofamherst.com
Subject: Re: Scott's Mill Hydro - Whitewater Recreation Study

John - Attached is the FEMA flood study for the James River near Lynchburg.

Wayne

On Monday, November 12, 2018 8:52 AM, Wayne Dyok <dyok@prodigy.net> wrote:

Hi John. It was a pleasure talking with you on Friday. Based on that call, it is my understanding that you are trying to complete the whitewater study by the end of the year, but that schedule could change depending the County's review. We would appreciate an email copy of the scope of work in order for us to accurately describe the alternatives being evaluated in our license application. Our understanding is that there are a couple of alternatives that involve Scott's Mill dam. One is removal and the others may include a whitewater course on both the left and right sides of the river. If my understanding of the discussion is correct, you could use different grades (slopes) for the whitewater course. At this time you are considering about a one percent grade (i.e., whitewater class 2 or 3), but the grade could be as much as three percent. Flow would typically be in the 400 to 600 cfs range, but would not be needed all day or every day. Please correct any misunderstandings I may have. Thanks.

Also as we discussed, Scott's Mill Hydro LLC is investigating the feasibility of including a boat ramp upstream of Scott's Mill Dam on the left bank. Mark is working with Liberty University which owns a parcel on the left bank downstream from Reusens Dam to see if we can use that parcel.

Would it be possible to obtain a copy of the slides you showed Mark?

As to your request of Mark, please see my responses below.

Mark
Many thanks for your valuable input on your FERC license application and dam property. You indicated that you and your consultant team have mapping and the FEMA model for your project area and are willing to share this information with us. Kindly ask your team if they can provide us with:

1. Point file for the bathymetric survey and depth to bedrock borings. Either I or Luke Graham, my assistant, will try to get you a usable bathymetric survey map file. At Scott's Mill Dam, the dam is pretty much founded on bedrock. There are borings for the bridge that crosses the James River downstream of the dam. I believe that Hurt and Proffitt or VA DOT can provide those to you.
2. Compiled base map that includes both the bathymetric work and the overbanks. If there is a geo-referenced aerial photograph, provide that too. I will see what I can do here. It may take me a day or two to provide that info to you.
3. Certified FEMA hydraulic model and cross sections. Provide your existing effective model and proposed effective model (if different). I will send that to you later today. I have to leave now for an appointment that will take most of the day.

Thanks in advance,

Regards,
Wayne

30. Throughout the Recreational Resources Study (Appendix J), various references are made to reports, studies, and conversations without citation. Additionally, for the citations that are provided (e.g., Stanovick et al., 1991), a "Literature Cited" section is not included in the study report. So that staff can review the referenced information, please provide citations for all references, including conversations with other entities, and provide a "Literature Cited" section. If any non-published information is cited (i.e., phone conversation memos or meeting transcripts), please provide documentation of this information for the project record.

RESPONSE

Commission staff requested literature citations for the Recreation Study. Citations are as follows:

- Stantovick, J.J., Kokel, R.W., Creamer, A.E., Nielson, L.A., and D. J. Orth. 1991. James River Mainstem Investigation, Job 4-Angler Survey, Federal Aid in Fish Restoration, Project 74-R
- Amherst County Comprehensive Plan, 2007-2027, countyofamherst.com/egov/documents
- Virginia Department of Game and Inland Fisheries, 2000, James River Angler Survey
- City of Lynchburg Comprehensive Plan, 2002-2020, Chapter 13, Parks and Recreation

Schedule C
Project No. 14867-001

31. In our comments on the DLA, we requested "…a map indicating where the proposed fishing pier and canoe portage route, put-in, take-out, and parking areas, described on page E-70, are located in relation to proposed project facilities, and the river, within a clearly delineated proposed project boundary." Figures 6-4 and 6-5 in Exhibit E, and the project boundary map provided in Exhibit G, do not display the information requested. Please provide a map that clearly displays the project boundary and the exact location of all existing and proposed recreation facilities. If an exact location for any facilities cannot be provided, please provide an outline of the estimated location(s).

RESPONSE

The recreation features proposed for the project are presented on Sheet two of Exhibit G. This map is presented below.

POINT OF BEGINNING FOR PARCEL #4

IPF

N 61°54'04"E 99.83'

DRILL HOLE IN ROCK FD.

50.32'

N 21°46'41"W

S 21°46'41"E 44.83'

N 61°54'04"E 41.43'

IPS AT 10.00'

POINT OF BEGINNING FOR PARCEL #2

188.16'

N 25°22'11"W

LAMPREY/EEL PASSAGE

LAT 37.424804 N
LONG -79.139788 W

C-1

Δ= 06°17'15"
R= 3010.703'
L= 330.39'
CH= 330.22'
CB= N 18°38'04"W

S 14°07'08"E 836.28'

SECTION - 2
MERRY - MOOR

PARCEL #4
1.967 ACRES

STATE ROUTE NO. 685

50' R/W

N 15°29'26"W 329.45'

S 15°29'26"E 329.45'

152.76'

N 08°22'47"W

338.04'

N 16°47'16"W

N 20°04'26"W 76.37'

10'x10 FISHING PIER

CANOE PORTAGE

PARCEL # 2
0.964AC.±

PARCEL #3

DAM

RAISED PRIMARY OVERFLOW SPILLWAY (ELEV. 516.4')

JAMES RIVER

N 87°23'13"E 75.91'

IPF

S 16°45'14"E 150.15'

IPF

IPF

Δ=05°45'06"
R= 2800.618'
L= 281.14'
CH= 281.02'
CB= N 12°36'53"W

C-2

S 39°50'00"E 188.59'

99.22'

N 09°44'20"W

(RIVER ROAD)

S 09°44'20"E 141.82'

382.93'

N 10°22'26"W

S 39°50'00"W 51.63'

PROJECT BOUNDARY

APPROX. LOCATION LOW WATER LINE

JAMES RIVER

C-1

Δ= 06°17'12"
R= 2960.703'
L= 324.86'
CH= 324.69'
CB= S 18°38'02"E

C-2

Δ= 05°45'06"
R= 2750.618'
L= 276.12'
CH= 276.00'
CB= S 12°36'53"E

REF: PLAT BY A.E.P. DATED JUNE 10, 1941

SCALE 1" = 100'

THIS SURVEY HAS BEEN PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND DOES NOT THEREFORE, NECESSARILY INDICATE ALL ENCUMBRANCES ON THE PROPERTY.

THIS PLAT HAS BEEN PREPARED FROM AN ACTUAL FIELD SURVEY DONE AS PER DATE OF THIS PLAT AND THERE ARE NO VISIBLE EASEMENTS OR ENCROACHMENTS EXCEPT AS SHOWN HEREON.

PARCEL #5
ISLANDS IN RIVER

0.068 AC.±

0.269 AC.±

ROCKFILL SLOPE

IMPROVED CHANNEL

LIBERTY BROADCASTING

DANIEL'S ISLAND

N 71°09'30"E

LYNCHBURG - A.E.P.

S 69°55'02"W

ROCKFILL SLOPE

3.503 AC.±

ANTHONY'S ISLAND

AMSTEAD INDUSTRIES, INC.
(GRIFFIN PIPE PRODUCTS, CO.)

LAT 37.424104 N
LONG -79.142161 W

RECONSTRUCTED BASTION

POWERHOUSE (LPS MODULES, 9 TURBINES)

TAILRACE

CREST GATES (2)

TRAINING WALL

LAMPREY/EEL PASSAGE

LOWERED ARCH DAM (ELEV 508.0')

JAMES RIVER HEADPOOL

S 18°31'21"E 114.15'

S 19°46'13"E 36.13'

S 40°21'31"E 140.51'

S 24°04'56"E 152.76'

S 48°25'44"E 120.87'

S 44°20'31"E 25.44'

APPROX. LOCATION LOW WATER LINE

166.07'

S 79°30'30"W

IPF AT 26.07'

NAIL & CAP SET IN CONC.

429.80'

ROCKFILL SLOPE

PARCEL #1
2.882 AC.±

STONE WALL

CANAL

STONE WALL

STORAGE SHED

AMSTEAD INDUSTRIES, INC.
(GRIFFIN PIPE PRODUCTS CO.)

IPS AT 40.00'

N 71°09'30"E 70.00'

EXISTING RAILROAD RAILS

IPS

N 16°23'30"W

493.37'

IPF

N 46°02'00"W

12'

12'

RETAINING WALL

CANAL FILLED (TWO 2.5' CULVERTS INSTALLED)

CHESAPEAKE AND OHIO RAILWAY CO.

POINT OF BEGINNING FOR PARCEL #1

LAT 37.421881 N
LONG -79.142318 W

LYNCHBURG, VA

Exhibit G

Scott's Mill Project

FERC No. P-14867

Project Boundary

NOTE:

PARCEL #5 PLOTTED FROM MAP OF LYNCHBURG DAM BY APPALACHIAN POWER COMPANY DATED JUNE 10, 1941. NO FIELD SURVEY WAS DONE OF PARCEL #5 AT THIS TIME.

THIS FIGURE IS INTENDED FOR ILLUSTRATIVE PURPOSES ONLY. PROPOSED FEATURES HAVE NOT BEEN SURVEYED/STAKED. PROPOSED FEATURES ARE SHOWN PER SCOTT'S MILL HYDRO (M. FENDIG, W. DYOK), 3/30/21

COMMONWEALTH OF VIRGINIA
DOUGLAS A. LEE
No 1691
Dec. 10, 98
LAND SURVEYOR

SOURCE OF TITLE:

APPALACHIAN ELECTRIC POWER CO. DOCUMENT NO. 1302 FROM THE CHESAPEAKE AND OHIO RAILWAY CO. DATED JUNE 17, 1940.

SCALE: 1" = 75 FEET

LEE SURVEYING, INC.
"Surveying the world one piece at a time"
8404 Timberlake Road • Lynchburg, VA 24502
Ph. (804) 237-8820 FAX (804) 237-4253

100 50 0 100 200
GRAPHIC SCALE IN FEET

PLAT SHOWING RESURVEY OF PARCELS 1 - 6, PROPERTY OF

A. E. P.

MADISION DISTRICT, AMHERST COUNTY
CITY OF LYNCHBURG, VIRGINIA

DATE: DEC. 10, 1998 DRAWN BY: DAL

COMM.• 981214 FILE •

SHEET 2 OF 2

32. Pages 8 and 9 of Appendix B state that an existing informal parking area is used by recreationalists to access the project area and that this area is owned by Liberty University. Because Scott's Mill Hydro is proposing to use this site to install a boat ramp and improve the parking area, it needs to be included within the project boundary pursuant to section 4.41(h)(2) of the Commission's regulations. Therefore, please provide a revised Exhibit G that clearly indicates this area within the project boundary, pursuant to section 4.41(f)(7)(vii)(D) of the Commission's regulations. In addition, please provide a detailed explanation of the improvements you intend to make to this area and how many parking spaces the formalized lot would accommodate. Finally, so that staff can understand the current condition of the site at which the boat ramp and associated parking lot would be installed, please provide photos of this area.

RESPONSE

The parcel owned by Liberty University (LU) upon which the boat ramp is to be located was included in the Exhibit G map included in the Exemption Application. However, as noted in the transmittal letter and in the response to comment 6, Scott's Mill has not yet consummated an agreement with LU. Therefore, the boat ramp parcel has been removed from Exhibit G. The final Settlement Agreement is expected to include a boat ramp.

33. Pages E-65 to E-67 of Exhibit E provide a list of recreational opportunities within 60 miles of the project. However, not all the locations listed are within 60 miles. For example, Cass Scenic Railroad State Park is approximately 139 miles from the project area. So that staff can better understand the recreational setting and what recreational opportunities are available in the region, please clarify how far these opportunities are located from the project, preferably grouped in a list by decreasing distance intervals (e.g., 60, 20, and 5 miles from the project).

RESPONSE

Replace Section 6.3.6.1.1 with the following.

The Scotts Mill Project is within 60 miles (approximately a one-hour drive) of numerous recreational opportunities including boating, fishing, hiking, camping and viewing nature. These opportunities, which are managed by Federal, State, local and non-governmental entities are listed below with distances from the project in miles:

Federal

- Appomattox Courthouse National Historic Park -22;
- Blue Ridge Parkway (managed by the National Park Service) - 22;
- Otter Lake Waterfalls – 22 Miles;
- George Washington National Forest; - 24;
- Jefferson National Forest – 24;
- Appalachian National Scenic Trail – 24;
- James River Face Wilderness Area – 24 and
- Shenandoah National Park – 59.

Virginia

- Appomattox-Buckingham State Forest – 32;
- Holiday Lake State Park – 34;
- Natural Bridge State Park – 36;
- •Smith Mountain Lake State Park – 39;
- Lake Nelson (also managed by VDWR) – 40;
- Horsepen Lake WMA – 40;
- James River State WMA – 42;
- Mount Pleasant Special Management Area – 42;
- Lake Robertson State Recreation Area – 51;
- High Bridge State Park – 55;
- Staunton River Battlefield State Park – 57 and
- Bear Creek Lake State Park – 60.

Local

- The City of Lynchburg, Virginia, (operates and maintains 850 acres of parkland) – 0;
- City of Bedford (two natural area parks, 1 skate board park, two athletic field parks -26;
- The City of Lexington, Virginia, (operates and maintains 2600 acres of parkland) - 44 and
- City of Roanoke; (14,000 acres of public land) 56 Miles

Other

- Paradise Lake Family Campground – 14;
- Lynchburg RV Resort – 18;

- Lynchburg Blue Ridge Parkway KOA – 19;
- Yogi Bear's Jellystone Park Camp-Resort (Natural Bridge Station) – 36;
- Lake Nelson Family Campground (Arrington) – 39;
- Smith Mountain Pumped Storage Hydroelectric Project (Smith Mountain Lake and Leesville Lake) – 40;
- Wintergreen Resort – 51;
- Misty Mountain Camp Resort (Greenwood) – 59;
- Shenandoah Acres Resort (Stuarts Draft) – 59;
- Charlottesville KOA – 60 and
- Goshen Scout Reservation – 60.

Land Use and Aesthetic Resources

34. In our comments on the DLA, we requested information on land use in the project area, however, this information was not provided in the exemption application. Page E73 of Exhibit E categorizes the land use surrounding the project as a mixture of riparian, forested, and recreational. The descriptions are vague and do not provide enough detail to identify the land use within the proposed project boundary. In the application, please provide the following information:

a. the types of land use within the project boundary (i.e., industrial, urban, rural, forested, riparian, undeveloped, recreational, residential, etc.);
b. the amount, in acres, for each category; and
c. a map depicting land use categories.

Also, please identify the percentage of lands within each category that are applicant owned and privately owned.

RESPONSE

The actual land included within the project boundary is minimal. It includes only the land upstream and downstream of Scott's Mill Dam needed for project purposes. Scott's Mill owns all these lands. On the north side of Scott's Mill Dam, the project boundary extends about 200 feet upstream and 550 feet downstream of the dam. In this area the project lands extend from the shoreline to VDOT property on River Road. The width of this sliver of land is only about 50

feet wide for a total area of about 0.9 acres. This entire area has steep banks and is comprised of riparian and forested habitat.

On the south side of the river, approximately 0.3 acres of Daniel Island is included in the project area. Part of this area is needed to divert flow toward the powerhouse from the main channel of the James River. Daniel Island is primarily riparian habitat. Only about 0.2 acres will be needed to accommodate the channel connecting the main channel with the intake channel. About 3 acres of Anthony Island (also known as Perceval Island) downstream of Scott's Mill Dam are included to ensure that a portion of the powerhouse flow can be diverted to the main channel to maintain water quality. This island is vegetated with riparian habitat. The remaining land needed for construction and operation of the powerhouse is industrial. It consists mainly of land leased to U.S. Pipe. There is a small amount of riparian vegetation along the riverbank, but the area is otherwise industrial. Approximately one acre of the industrial land will be needed to construct and operate the powerhouse. No lands upstream are necessary to operate and maintain the project. Scott's Mill has a flowage easement on the islands upstream of Scot's Mill Dam, but the islands themselves are excluded from the project boundary since they are unnecessary for project operation. These areas are depicted on Exhibit G, presented in the response to comment 31.

35. The operation of the proposed project would result in a reduction in flow over the main spillway (river left, looking downstream) because a large portion of the flow that currently spills over the dam (e.g., up to 4,500 cfs) would be diverted to the opposite side of the impoundment and through the modular powerhouses (on river right). Page J-64 of Appendix J, Visual Resources Report, presents the aesthetic values of these current and future flow conditions over the dam in such a way that makes it difficult for staff to determine the level of potential impact (e.g., describing the aesthetic qualities of various flows by using an inconsistent range of cfs values). Please present this information using the same cfs ranges and descriptors to compare existing aesthetic conditions to future aesthetic conditions (e.g., by comparing the aesthetic value of existing 800- to 1,200-cfs flows to the aesthetic value of future 800- to1,200-cfs flows). For example, flows (spill over the dam) in the 800 cfs to 1,200 cfs range are considered visually impressive and currently occur X percent of the time. Once the project is constructed and operational, flows over the dam in the 800 cfs to 1,200 cfs range would occur only Y percent of the time. Additionally, please provide a map indicating the locations of the key viewing areas (KVAs) used for the analysis.

Schedule C
Project No. 14867-001

RESPONSE

Replace Section 6.3.7.2.2 Aesthetics impacts and recommendations with the following.

"The most significant aesthetic impact will be the reduction in flows over the dam. Applicant intends to provide a constant flow of water over the dam during post-project operations. For flows up to the hydraulic capacity of the project (i.e., 4500 cfs), Applicant proposes a thin veil of about 1 inch depth over the dam crest. This veil will be present about 77 percent of the time. It will not be visually significant. Under existing conditions, flows at 800 cfs are not visually significant. Based on photographs taken at flows of 800 cfs, 1400 cfs, 1500 cfs and 1800 cfs, flows become more visually attractive but not spectacular. In general, it appears that at discharges below 1,000 cfs, flow could be considered not visually significant. Such flows occur about 25 percent of the time.

Flows at 3,000 and above were given a spectacular visual rating. Based on the visual character of flows between 1,800 cfs and 3,200 cfs, Applicant concluded that flows between 1,000 cfs and 3,000 could be considered visually attractive. Visually attractive flows between 1,000 cfs and 3,000 cfs occur about 40 percent of the time. Spectacular flows between 3,000 cfs and 4,500 cfs (the hydraulic capacity of the powerhouse) occur about 12 percent of the time.

The following table illustrates the percent of time that the aesthetic resources are "not visually significant", "visually appealing" or "spectacular category."

Table - Waterfall Visual Resource Assessment

SM Flow (cfs)	Pct. of Time	Exist. Cond.	Dam Flow	Post Proj. Rating
<1,000	25	Not. Sig.	30	Not. Sig.
1,000-3,000	40	Appealing	30	Not. Sig.
3,000-4,500	12	Spectacular	30	Not. Sig.
4,500-5,500	6	Spectacular	30-1,000	Not Sig.
5,500-7,500	6	Spectacular	1,000-3,000	Appealing
>7,500	11	Spectacular	>3000	Spectacular

In summary, under existing conditions 25 percent of the time the flow is not visually significant, 40 percent of the time it is appealing and 35 percent of the time it is spectacular. During project operations, 83 percent of the time the visual resources of water flowing over the dam are not

visually significant. Six percent of the time they are appealing and 11 percent of the time they are spectacular. The more spectacular visual flows will occur only 11 percent of the time under project operations compared to 35 percent under existing conditions.

Because views of the flow of water over the dam are limited from River Road and the view from the 5th Street bridge is distant, the impacts from these key viewing areas (KVAs) are not as significant as they might otherwise be. The most significant effect will be to the seven homes on Norwood Street and from the passerby view on the street. However, a large part of their view is also toward the U.S. Pipe industrial site and the railroad. Because there are few observers with unobstructed views of the dam and because they will be able to observe the higher flows 11 percent of the time (i.e., about 40 days per year), Applicant does not propose any further mitigative measures to preserve the aesthetics of the water flowing over the dam, other than to provide a veil over the dam 77 percent of the of the time that the flow is less than the hydraulic capacity of the turbines.

The powerhouse should blend into the surrounding and generally will be shielded from most viewing locations (see **Photograph 22 in Appendix C**). This should not be a significant impact on the environment. Since the Applicant is not proposing significant changes to the headpond elevation, there should not be any impacts to the natural surrounding.

Construction noise should only be a minor nuisance because the U.S. Pipe facility and adjacent railroad contribute significantly to the ambient noise level and there are no close-by sensitive receptors. The north side is quieter, but during construction recreational use at the dam site will be precluded. Therefore, noise effects would impact only those fishing from boats and the intermittent noise generated from the one-year construction of the fishway and recreational facilities will be partially drowned out by the noise for water flowing over the dam."

A map of the KVAs (5th Street bridge, River Road and Norwood Street) is presented below.


Key Viewing Areas
Scotts Mill Rd
F St
E St
Norwood St
D St
Cabell St
Hancock St
C St
B St
A St
Stonewall St
James River
River Rd
S Amherst Hwy
Rivermont Ave
Church St
5th St
Main St
Commerce
7th St
5th St
Rocky Hill Rd
Lynchs Ferry Rd
Feet
0
250
500
N

Cultural Resources

36. Pages B-10 and B-11 of Appendix B state that the Virginia State Historic Preservation Officer (SHPO) has identified the area of potential effects (APE) as the project boundary, and that the project boundary was extended to include the head pond. Please provide a map showing the APE, as well as the project boundary. Additionally, please clarify whether the Virginia SHPO approved the APE that includes the extended project boundary.

RESPONSE

Exhibit G presents the project boundary. Since the APE corresponds with the area within the project boundary, no purpose is served preparing a second map showing the APE. The SHPO has reaffirmed that the APE includes the extended project boundary, less the upstream islands.

Roberts, Timothy <tim.roberts@dhr.virginia.gov>
To: Jim Thornton
Cc: Wayne Dyok
Tue, Mar 30 at 12:47 PM

Good afternoon Jim.,

The Virginia Department of Historic Resources (DHR) has received your request for concurrence with the dimensions of the expanded area of potential effects (APE) for the referenced project. DHR understands the revised boundaries of the APE have been expanded to include the entirety of the new project boundary that extends from just downstream of the existing Scott's Mill Dam to just below Reusen's Dam upstream. DHR concurs with this expanded boundary. Please let this email serve as DHR's official response to the request for comment.

Thank you for consulting with our office.

Best regards,

Tim

Show original message

--
Timothy Roberts, Archaeologist
Review and Compliance Division
Department of Historic Resources
2801 Kensington Avenue
Richmond, VA 23221

Schedule C
Project No. 14867-001

(804) 482-6103
www.dhr.virginia.gov

Engineering Issues

37. There are two spillways at the proposed project, a 735-foot-long primary spillway and a secondary, 140-foot-long (arch-shaped) spillway. Scott's Mill Hydro proposes to install a 2-foot-high concrete cap on the crest of the primary spillway and to remove a portion of the secondary spillway to help divert flow into the proposed powerhouse. In order to address any upstream inundation effects of the proposed installation of a 2-foothigh concrete cap on the crest of the primary spillway and reduced total length of the spillways (due to the proposal to remove a portion of the secondary spillway), an analysis is required comparing the upstream inundation effects under existing and proposed conditions. To evaluate the inundation effects, the analysis must include:

a. A study of historical storms/floods that occurred near the dam. This analysis could entail preparing a hydrologic model to develop inflow and outflow hydrographs based on observed precipitation and flow data and existing river basin characteristics;
b. a flood frequency analysis of historical inflows and outflows in order to determine the annual recurrence interval of observed maximum flood events;
c. a comparison of upstream impacts on non-project properties and structures (e.g., residences, campgrounds, businesses) based on the existing and proposed conditions under normal flow and flood scenarios;
d. inundation maps for all scenarios evaluated, including electronic shapefiles; and
e. input/output files of any model simulations used in the analysis.

RESPONSE

As noted by Commission staff, there are two components of the spillway: a 735-foot long primary straight section and a 140-foot long arch shaped section. A 2-foot cap will be placed on the primary section. The crest elevation of the straight spillway is 514.4 feet. Scott's Mill proposes to increase that elevation to 516.4 feet. The crest elevation of the arch section is 514.8 feet. Once the proposed project is completed the top portion of the arch section will be removed. The powerhouse will become the new control for the arch section of the dam. The new

crest elevation will be 521.5 feet. The effective length of this section is 164 feet (i.e., 18 modules each 8 feet wide). The powerhouse is designed to allow overflow once upstream water levels exceed 521.5 feet. This corresponds to a flow of about 50,000 cfs, which is equivalent to a flood level that is less than the 10-year flood. During detail design, this elevation may be refined in consultation with Commission staff. Once a headpond of 521.5 feet is reached, the powerhouse will act like a spillway.

As water levels exceed elevation 524 feet (i.e., 10-year flood level of 79,00 cfs), the complexity of flow increases because bank overflow is occurring. Under existing conditions, per FEMA results, there is still about a 6-foot water level differential and Scott's Mill Dam remains a control point for upstream water levels. However, as flows increase above the 10-year flood level, the backwater becomes more dominant and Scott's Mill becomes less of a control point. At the 500-year flood, there is only a two-foot elevation differential upstream and downstream of Scott's Mill Dam. As flows increase above the 10-year flood level more and more flow passes around the dam.

To assess the effect of increasing the crest elevation of the straight portion of the spillway by 2 feet and eliminating the arch portion of the spillway, but replacing it with a new effective powerhouse spillway at a crest elevation of 521.5 feet, the weir equation can be used to calculate the change in upstream water levels. Under existing conditions, FEMA calculated that the head difference at 79,100 cfs (10-year flood) was 6 feet. The corresponding downstream water level would be about 518 feet, submerging the crest of the main spillway by about 3.6 feet. Assuming a weir coefficient of 4.2, applying a 6-foot head over Scott's Mill Dam (5.6 feet over the arch section), the total flow over the dam would be 53,000 cfs and the remaining flow would be overbank flow. The 26,000 cfs of overbank flow is obviously more than the actual amount that would occur. Given the likely error band in FEMA calculations, a more reasonable estimate of head might be 7.5 feet[3]. Using the weir equation, this would yield a flow of 63,400 cfs over the main spillway, 11,100 cfs over the arch section and 4600 cfs of overbank flow. This appears to be a more reasonable estimate of flow distribution.

The 7.5 foot of head also appears to be a reasonable estimate of head based on examination of measured headwater and tailwater levels. The measured head

[3] It is assumed that the headwater level remains at elevation 524 feet and the error band is associated with the tailwater level.

difference at a flow of 25,100 cfs was 10.7 feet (Table A-3 of the Exemption Application). At a flow of 8,800 cfs the head difference was 12 feet. Therefore, a head difference of 7.5 feet at 79,100 cfs seems reasonable.

Using the weir equation, assuming post project conditions and ignoring any overbank flow changes, Scott's Mill calculated that the equivalent head to pass 79,100 cfs over the main spillway and powerhouse would be 8.1 feet, or an increase of 0.6 feet at the dam[4]. In this calculation a coefficient of 4.2 was used for the main spillway to be consistent with existing conditions. However, for the powerhouse overflow, a coefficient of 3 was assumed. Scott's Mill also assumed a tailwater of 516.5 feet to be consistent with the existing condition calculations above. At this flow, Scott's Mill remains a flow control.

For the 10-year flow, Table A-3 of the exemption application ignored overbank flow and flow over the powerhouse to yield a maximum water level differential of 2.2 feet. The current calculations are an improvement over the earlier water level estimates. At higher flood frequencies, the water level differential at the dam would decrease and become close to zero because Scott's Mill is no longer a control point. Therefore, the maximum upstream inundation change occurs at a flow of about 25,000 cfs when the powerhouse shuts down and all flow passes over the spillway.

At 25,100 cfs, the measured head over the dam crest was 4.1 feet over the main spillway and 3.7 feet over the arch section. Using a weir coefficient of 3.5 results in 21,400 cfs flowing over the main spillway and 3500 cfs over the arch section for a total of 24,900 cfs. Therefore, at a flow of 25,000 cfs a weir coefficient of 3.5 seems appropriate.

For post project conditions, at 25,100 cfs, all flow will be over the main spillway and the new crest elevation will be 516.4 feet rather than 514.4 feet. Using a weir coefficient of 3.5, the head over the crest would be 4.6 feet or at elevation 521 feet

[4] If it is assumed that the FEMA error band is totally with the upstream water level and not the tailwater, then the headwater level would be 526.1 feet (i.e., 8.1 feet above a tailwater elevation of 518 feet) rather than 524 feet and more water would pass over the powerhouse.

as presented in table A-3 of the exemption application (i.e., 2.5 feet higher than water levels during existing conditions).

The key to inundation of upstream areas during flows above the hydraulic capacity of the powerhouse is the change in water levels at Scott's Mill Dam between existing conditions and post construction, operational conditions and propagating those water levels upstream. Using Manning's equation, the upstream water levels can be estimated. Standard practice is to conduct an hydraulic modeling using a model such as HEC-RAS. Data inputs are flows, cross sections (geometry data and plan data), starting water levels, and roughness coefficients). Scott's Mill has bathymetry information and could expend the effort to conduct such a modeling analysis. However, the critical information to be gained is the change in water level upstream. Based upon a maximum water level change of 2.5 feet at a flow of about 25,000 cfs, Scott's Mill does not believe that it is cost effective or necessary to conduct hydraulic modeling. Sufficient information exists from FEMA's analysis to estimate upstream water level changes at flows of 25,000 cfs. Upstream water level changes would be less than 2.5 feet as discussed below.

Manning's equation is Q=1.49/n*AR**(2/3)*S**0.5, where Q is the flow in cfs, n is Mannings n (or a roughness coefficient), A is the cross sectional area, R is the hydraulic radius defined as cross sectional area divided by perimeter, and S is the hydraulic gradient. Although measurements on Google and in the Exemption Application suggest that the distance between Ruesen's Dam and Scott's Mill Dam is 3.6 miles, the FEMA studies indicate a distance of 3.15 miles. Hence the estimates of upstream water levels will assume 3.15 miles.

Based on FEMA's studies, the 10-year flood of 79,100 cfs has a surface water level differential of 9.4 feet. This decreases slightly as flows increase to 255,000 cfs (500-year flood).[5] For a flow of 25,000 cfs, the surface water differential is likely to be on the order of 10 feet. (Since the analysis considers the differential, a 10 foot or 11foot water level difference will not significantly affect the results.) Based on the distance between dams, the hydraulic gradient under existing conditions is 0.0006 feet per foot.

[5] For a 500-year flood (255,000 cfs), the FEMA water differential between Reusens and Scott's Mill was 7.5 feet, for the 100-year flood (159,000 cfs) it was 8.5 feet, and for the 10-year flood (79,000 cfs), it was 9.4 feet. Hence for a flow of 25,000 cfs, a water level differential is likely to be between 10 or 11 feet.

Because the James River is relatively wide compared to its average depth, the wetted perimeter is essentially the width of the river (i.e., the typical width of the river upstream of Scott's Mill Dam under normal flow conditions is on the order of 600 to 700 feet based on the bathymetry study). Therefore, the width and the perimeter become almost the same number. Accordingly, the hydraulic radius can be represented by the average depth. Since the cross-sectional area is equal to the width times the average depth, Manning's equation can be rewritten as Q=1.49/n*W*D**1.67*S**0.5. If a Manning's n of 0.326 is assumed (a reasonable assumption based on V. T. Chow), the average width is 800 feet, the average depth is 8 feet, and the slope is 0.0006, the calculated discharge is 25,000 cfs. The calculated velocity would be about 4 feet per second which appears reasonable. With a depth increase of 2 feet at the dam, the velocity would decrease to about 3 feet per second immediately upstream of the dam. Because head loss in a stream is a function of the velocity squared, the head loss of 0.0006 feet per foot (or 0.6 feet per thousand feet) during post project conditions with a 2-foot increase would be about 56 percent of the head loss under existing conditions. Hence instead of the water level rising 0.6 feet in that first 1000 feet upstream, it would only rise about 0.34 feet. The water level differential would be 2.5 feet less 0.26 feet or about 2.24 feet. This calculation could be redone for every 1000 feet, but in essence in roughly 10,000 feet (or two miles), pre-project conditions would persist from that point upstream to Reusens.

A check on the estimates for velocities, widths, and depths for the 25,000 cfs case can be undertaken by examining FEMA's analysis for the 100-year flood (159,000 cfs). The cross-sectional area at FEMA RM 253.43 was 23,648 square feet and the width was 1070 feet, resulting in an average velocity of 6.7 feet per second. Average depth was 22.1 feet. For a flow of 25,000 cfs, the average velocity will be significantly less than 6.7 feet per second. Based on the bathymetric survey, the James River average width at 25,000 cfs is on the order of 700 or 800 feet. Therefore, the average depth would be between about 6 and 9 feet. In examining the bathymetric data, for a flow of 25,000 cfs, the average depth is more likely to be in the range of 8 feet, as used in the above analysis.

Scott's Mill maintains there is no need to consider historical storms that occurred in the area. FEMA's study of the 10, 50, 100 and 500 year events do just that. The maximum flood of record that occurred in 1985 has between a 100 and 500

year return interval. Further FEMA has conducted a detailed flood frequency analysis.

Because the storage is small in the Scott's Mill headpond, during floods there would only be minor attenuation. For example, the surface acreage of the headpond is 318 acres at average flows. For a 10 foot increase in water level as would occur when flows increase from 3,000 cfs to over 80,000 cfs, and assuming some increase in reservoir width (e.g., from 700 to 900 feet), the total volume stored would be on the order of 5,000 acre-feet. That is the equivalent of about 2500 cfs for one day.

As discussed throughout the Exemption Application and in this response above, the impacts to non-project properties and structures would not be significant because the changes in water level do not exceed 2.5 feet under worst case conditions and these water level differences attenuate upstream. The shoreline banks are steep and the changes in velocity and water level on erosion, wetlands, vegetation, terrestrial habitat, docks, or any nearby structures would exhibit only minor effects. In fact, the greater stability of water levels during flows that are less than 4,500 cfs may be considered as a benefit by adjacent property owners as there is currently about a one-foot water level change from low flows to about 4,500 cfs, which is the hydraulic capacity of the powerhouse. Again because of the bank steepness, inundation maps would be of little value. Scott's Mill invites Commission staff to observe field conditions during natural flow variations. The changes from project operations would do little to affect these variations except when flows are below 4,500 cfs.

38. The stability analyses in the Preliminary Supporting Design Report only includes calculations for the powerhouse units (LPS Modules). The applicant should also provide stability analyses, under all probable loading conditions, for the existing Scott's Mill Dam primary overflow section and masonry bastion section. The stability analyses should be based on the proposed configuration of each structure as shown in Exhibit F of the application. Please include free body diagrams for each structure with the analyses including the proposed powerhouse.

RESPONSE

Scott's Mill contracted with McMillan Jacobs (MJ) to conduct a stability analysis of the primary overflow section of the dam (see Appendix D). Given that the FEMA studies indicate a one-foot elevation difference in water levels between

upstream and downstream water levels, high flood flows with low frequencies of occurrence were determined not to be controlling factors for the stability analysis.

MJ considered the stability of the Scott's Mill Dam with and without ice loading. Although the James River can experience cold winter weather, the Scott's Mill headpond has not iced over in recent memory. Extreme weather conditions may occur with climate change, such as occurred in February of this year, but the duration and magnitude of cold temperatures are very unlikely to be long enough or cold enough to result in significant ice loading. Hence the ice loading conditions analyzed are not presented in the MJ report. Similarly, seismically, the area is stable and stability analysis with earthquake loading was not undertaken for this level of design. However, during detail design, Scott's Mill will conduct a full stability analysis in coordination with the Commission and Commonwealth of Virginia.

APPENDIX B2

RESPONSES TO FERC'S ADDITIONAL INFORMATION REQUESTS IN LETTER DATED AUGUST 5, 2021

Scott's Mill Hydropower Project

FERC Project No. 14867

This appendix provides the Commission's August 5, 2021 additional information requests (AIR). After each AIR Applicant provides its response and references where the information can be found in the license application.

SCHEDULE A REQUIRED INFORMATION
Information Needed for a License Application (18 C.F.R. §§ 4.32, 4.61)

General Content

1. As required by section 4.32(a)(1) of the Commission's regulations, a license application must identify every person, citizen, association of citizens, domestic corporation, municipality, or state that has or intends to obtain and will maintain any proprietary right necessary to construct, operate, or maintain the project.

Response
Included in Initial Statement.

2. As required under section 4.32(a)(2), a license application must provide the namesand mailing addresses of every city, town, or similar local political subdivision that has apopulation of 5,000 or more people and is located within 15 miles of the project, and of all Indian tribes that may be affected by the project.

Response
Included in Initial Statement.

3. As required under section 4.32(a)(3), you must notify, via certified mail, every property owner within the bounds of the project, or adjacent to any project works, of thefiling of your license application; also notify, via certified mail, the applicable entities in section 4.32(a)(2). Such notification must contain the name, business address, and telephone number of the applicant and a copy of Exhibit G contained in the application and must state that a license application is being filed with the Commission.

Response
All adjacent property owners were identified and received a certified letter which included a copy of Exhibit G.

4. The Initial Statement must be revised by:
   a. indicating you are applying for a license rather than an exemption, as

required by section 4.61(b)(1).

b. indicating whether you are claiming preference under section 7(a) of the Federal Power Act, as required by section 4.61(b)(5).
c. specifying when project construction is planned to be completed in relation to license issuance, as required by section 4.61(b)(9).

Response
Included in Initial Statement. Applicant is claiming preference under section 7(a) of the Federal Power Act. Construction is planned for one year following license issuance.

5. As required under section 4.61(c)(1)(x), a license application must provide the estimated capital costs and annual operation and maintenance expenses of each proposedenvironmental measure.

Response
Table 4-2 has been developed to include capital and annual operations and maintenance costs for the proposed environmental measures.

6. Notice of the license application must be published as required by section 4.32(b)(6) of the Commission's regulations.

Response
Applicant published notice of the license application in the Lynchburg News and Observer on the date the application was filed.

Exhibit A

7. Page A-4 of Exhibit A of the original exemption application states the project impoundment would encompass approximately 316 acres at the proposed normal operating pool of 516 feet above mean sea level (msl). However, the normal maximumsurface elevations specified in Table A-1 and Exhibit G are 516.3 feet msl and 516 feetmsl, respectively. Therefore, in any license application filed for the project, please clarify this discrepancy and indicate the normal maximum surface elevation under proposed project operation using prominent vertical datums such as the National Geodetic Vertical Datum of 1929 or North American Vertical Datum of 1988.

Response
The normal operating pool will be at elevation 516.4 feet NAVD88. Applicant measured the

surface water area to the upstream project boundary using GIS tools. The area of the headpond within the Reusens project boundary was then estimated and added to the total to net an impoundment surface area of 305 acres at the normal operating level. Inconsistencies were corrected in the application.

8. Page A-4 of Exhibit A of the original exemption application states the 50 percent exceedance flows across the period of record (1927-2017) at the Holcomb Rock United States Geological Survey Gage (No. 02025500) range from 883 cubic feet per second (cfs) to 4,790 cfs and presents the associated annual and monthly flow duration curves in figures A-8 through A-20. However, there is no table containing the annual and monthlyflow statistics. Therefore, please provide, in any license application filed for the project, a table that reports the monthly mean, median, and minimum and maximum observed flows over the chosen period of record and also describes any pro-ration factors that wereused to calculate these flow statistics. This information will provide insight on the hydrology of the river at the proposed project site and aid staff in assessing the potential effects of project operation on water quantity.

Response

Table E-6-1 of the Exemption Application provided the monthly maximum and mean flows for the period of record. The period of record was expanded from July 9, 2027 to December 31, 2020 and the mean monthly flow was added to the table. No revisions to the minimum and maximum values were needed for the maximum and minimum daily flows. (The median flow is the 50 percent flow level.) Table E-6-1 is referenced in Exhibit A. Since the drainage area for Scott's Mill is only about 1.5 percent larger than the drainage area for the Holcomb Rock gauge, no adjustments were made to the flow statistics to convert to Scott's Mill flows. To obtain more accurate estimate of Scott's Mill flows, the flows could be multiplied by 1.015.

10. Table A-2 of Exhibit A of the original exemption application provides only the length of a transmission line. Therefore, in any license application filed for the project,please provide a detailed description of the proposed transmission line including its voltage and interconnection point with the grid.

Response

A more detailed description of the transmission line has been provided in the license application. The transmission line will be a 1200-foot-long overhead line connecting the powerhouse to an existing American Electric Power (AEP) substation on U.S. Pipe Property. The voltage will be at 34.5 kV.

11. Figure A-23 of Exhibit A of the original exemption application provides a one-line diagram for the proposed project. However, the diagram is poorly presented. Therefore, please provide, in any license application filed for the project, a detailed single-line electrical diagram that shows the rating and capacity of electrical equipment, circuit conductors, and protection devices and file the diagram separately as "Critical Energy Infrastructure Information (CEII)."

Response
The one-line diagram was revised to include the requested information. It has been removed from Exhibit A and filed as CEII information.

Exhibit E

12. Staff's comments on the original exemption application indicated the project- specific water quality data that had been collected to date (limited to 2 days of sampling in the impoundment) were insufficient to characterize the existing baseline conditions at the proposed project and evaluate the potential effects of project operation on upstream and downstream water quality. In response to this comment, the revised exemption application contained additional water quality data consisting of multiple years of grab sample data—of water temperature and dissolved oxygen (DO)—from two sites routinelysampled by the Virginia Department of Environmental Quality (Virginia DEQ). However, one of the Virginia DEQ sites is 11 miles upstream of the proposed project (and is upstream of, and potentially affected by the operation of the Reusens Hydroelectric Project, FERC No. 2376), while the other site is 1.5 miles downstream of Scott's Mill Dam. As such, data from these sites are likely not representative of existing water quality conditions in the immediate vicinity of the proposed project (upstream and downstream of the dam) and serve little utility in assessing the potential effects of project operation on water quality. For example, the proposed operation of the project would result in decreased spill over the main spillway, which could reduce water quality (increase temperatures and decrease DO concentrations) immediately downstream of the main spillway. In addition, the proposal to enlarge the dam (and deepen the impoundment) could increase the potential for stratification in the project impoundment (with low DO bottom waters potentially being passed downstream through the modular powerhouses). Without baseline water quality data from the immediate project vicinity, these potential effects are difficult to discern. Therefore, if longer-term, more representative, water quality data are not provided from immediately upstream and downstream of the dam, staff may request, during its adequacy review of any license application filed for the project, that a water quality study be conducted during the low- flow high-temperature season to allow the existing environment to be described and support staff's environmental analysis of the potential effects of the project on water quality.

Response
The water quality section has been supplemented with additional information from VDEQ. Appendix L has been added to present the updated information. Applicant strongly believes that

the data upstream and downstream can be used to represent data at Scott's Mill as supplemented by the short duration of actual water temperature and dissolved oxygen measurements. The storage in the James River is quite limited between these two stations, Reusens having the most storage. Applicant agrees that there would be less flow over Scott's Mill Dam and this could affect dissolved oxygen but not likely water temperatures in any significant way as the retention time will continue to be quite short. Both water temperatures and dissolved oxygen (DO) are within current state standards and not likely to change. Applicant is proposing to monitor water quality for at least the first three years of operation and has a contingency plan if dissolved oxygen levels fall below state standards. Applicant's DO data collection clearly showed the increase in DO immediately downstream from the dam and acknowledges that the turbines will not provide the same level or aeration. However, State standards should continue to be met.

13. Supplemental fisheries data were provided (as a Microsoft Excel file) as part of the revised exemption application filed on March 31, 2021. Rather than using full species names (e.g., bluegill), the dataset uses three-letter species codes (e.g., BLG) to identify species. Although there is a table in the Excel file indicating which species eachcode refers to, there are numerous codes in the dataset itself (catch data) that have no corresponding species names, including the following: COS, CRS, CYS, GOS, LDF,

MMS, RFS, ROD, RRC, RYS, SFS, SID, SNS, SPS, SUN, SWS, TLS, TSS, WAM, and YEB. As such, it is unknown what species these codes represent, or if they are data entryerrors. Therefore, in any license application filed for the project, please include an updated Microsoft Excel file that contains the correct species names for all fish data.
Also, please re-calculate any summary statistics [e.g., length ranges and catch-per-unit-effort, (CPUE) values] affected by these corrections. Correcting this dataset will allowCommission staff to more accurately analyze potential project effects on resident and migratory fish species that may be present at the proposed project.

Response
VDWR provided additional information to enable the species names to be better identified. Appendix M (an Excel spreadsheet) was added to the application to provide the requested species statistics. The fisheries section of the application was likewise modified. This should enable Commission staff to analyze potential project effects on resident and migratory fish species.

14. The fisheries dataset described above in item 12 contains no indication of the sampling gear that was used to collect these data. While it appears that boat electrofishing may have been used in some of the surveys—as Table E-6-4 references CPUE values for American eel based on boat electrofishing surveys conducted by Virginia Department of Wildlife Resources (Virginia DWR)—it is unknown whether other gear types were also used to collect these data. Therefore, in any license application filed for the project, please specify the gear type(s) used

during the surveys. If more than one gear type was used, please calculate and provide gear-specific CPUE values. It is also unclear what time of day sampling occurred at. Therefore, please indicate the general time of day (day, night) sampling occurred. Also, no sampling dates are provided for the impoundment sampling site (Red-and-Dots) located at river mile (RM) 260. Therefore, please indicate the dates or months during which sampling occurred at this site. Lastly, please report the unit of measurement for fish lengths (e.g., millimeters) and whether the lengths correspond to standard length, fork length, or total length. This information will aid staff's analysis of potential project effects (e.g., entrainment and impingement) of resident and migratory fish species that may be presentat the proposed project.

Response

Exhibit E, Appendix M provides information on the sampling gear for CPUE data for American Eel. The data was provided by VDWR and is a comprehensive summary of the data they have collected.

15. Staff's comments on the original exemption application sought additional information on the level of effort and body lengths for the American eel (CPUE) data provided in table E-6-4 of Exhibit E. While the revised exemption application includes sampling effort data and eel lengths for the sampling sites located at river miles (RM) 257 (downstream of Scott's Mill), 260 (Scott's Mill impoundment), and 264 (upstream ofthe Reusens Project), such data is not provided for the sampling sites at RMs 274 and 282, which are upstream of the Coleman Falls (FERC No. 5456) and Cushaw (FERC No.906) projects. Therefore, in any license application filed for the project, please provide, to the extent that such information is available, the amount of effort (e.g., pedal time), sampling dates, and eel length data from the surveys conducted upstream of the Coleman Falls and Cushaw projects. This information will assist Commission staff's analysis ofthe potential effects of the proposed project on eel migration in the James River.

Response

Applicant has provided all available American Eel sampling data in Exhibit E and Appendix M.

16. Staff's comments on the original exemption application requested that Scott's MillHydro conduct a desktop entrainment study to evaluate the potential effects of project operation on resident and migratory fish populations found in the project vicinity.
In response to these comments, the revised exemption application states that such an analysis is not needed because the proposed project is being designed to exclude fish from the turbines altogether because the powerhouse and associated trash rack would beoriented 135 degrees from the incoming flow, which would require fish moving downstream (towards the powerhouse) to make an improbable 45 degree turn in order toencounter the trash racks and

potentially become entrained or impinged. Scott's Mill Hydro notes that a similar trash rack design is currently in use, and is highly effective atminimizing entrainment, at the Williamette Falls Project (FERC No. 2233) in Oregon.

However, there are several key differences between the fish exclusion system at Williamette Falls and that proposed at Scott's Mill. Namely, the powerhouse at Williamette Falls is oriented completely parallel to the incoming flow (not 135 degrees asis the case for Scott's Mill), and the fish exclusion system at Williamette Falls was designed and tested for juvenile salmonids (not American eel, which is the primary migratory species of concern at the proposed Scott's Mill Project).[9] As such, the results from the entrainment studies conducted at the Williamette Falls Project are not directly transferable to the proposed Scott's Mill Project; nor is it likely (without decreasing the trash rack spacing) that the proposed project could be designed to completely *eliminate* fish entrainment as implied by Scott's Mill Hydro.

For the reasons above, Commission staff reiterates its comments on the original exemption application and requests that a desktop entrainment and impingement study be conducted to support any license application filed for the project. In addition to American eel and American shad,[10] the study should evaluate the impingement potential

(based on expected approach velocities, body widths, and burst swimming speeds) and estimated turbine mortality—using the Franke et al. (1997) blade strike model—of the ten most common (abundant) fish species in the project impoundment based on the updated fisheries data requested in items 13 and 14 above. The associated study report should indicate the expected turbine survival of fish in 1-inch size increments across theentire size range of fish susceptible to entrainment. Staff's recommended desktop impingement and entrainment study would provide useful baseline estimates of the worst-case scenario for turbine mortality of resident and migratory fish at the project by assuming the proposed trash rack design (oriented 135 degrees to the flow direction) doesnot alter the swimming or migratory behavior of fish and their associated susceptibility toentrainment or impingement, which would help inform the need for fish protection measures at the project.

---

[9] American eel is present upstream of the proposed Scott's Mill Project (see table E-6-4 of Exhibit E of the original exemption application) and could easily fit through theproposed trash racks, which would have a clear spacing of 3 inches.

[8] Although it has not been documented in the project vicinity during recent surveys, American shad is included here due to the proposal to conditionally install passage for this species should it become present at the project in the future.

Response
Applicant has oriented the powerhouse to minimize the likelihood for entrainment. The Settlement Agreement with resource agencies requires a 95 percent passage effectiveness. If that is not achieved applicant will be required to install screens with a ¾ spacing which would further minimize entrainment. Applicant does recognize the Commission's right to request additional information and has conducted an entrainment study. The results are presented in Exhibit E.

Exhibit G

17. As required under section 4.39(a), Exhibit G drawings must be stamped by a registered land surveyor. The Exhibit G drawings provided in the original and revised exemption applications lack a registered land surveyor's stamp. Therefore, any license application filed for the project must include Exhibit G drawings that are stamped by a registered land surveyor.

Response
Exhibit G of the license application has been stamped by a registered land surveyor. Exhibit G is provided both as ArcView shape files and as a PDF. The PDF version was transmitted to adjacent land owners.

18. As required under section 4.61(f), which refers to section 4.41(h) of the Commission's regulations, the project boundary map must enclose all project works and other features described under Exhibit A that are to be licensed. The transmission line ofthe proposed project is described in table A-2 of the original exemption application but isnot included on the Exhibit G drawings. Therefore, any license application filed for the project must add the transmission line to the Exhibit G drawings and file all project boundary data in a georeferenced electronic format (such as ArcView shapefiles, GeoMedia files, MapInfo files, or any similar format).

Response
The project boundary presented in Exhibit G has been modified to include all project works and other features to be licensed. It also includes Applicant's proposed transmission line. The upstream extent of the project boundary is the downstream extend of the FERC project boundary for the Ruesens Project.

19. A local park, Riverside Park, is located along the western shoreline of the impoundment and is operated and maintained by the City of Lynchburg, Virginia. Because the park is not described in the revised exemption application, nor is its locationdepicted in Exhibit G, Commission staff are unable to determine if any lands associated with the park overlap with the

proposed project boundary or would potentially serve a project purpose. Such information is necessary to determine the extent to which a licensee can exercise its right of eminent domain (if necessary) (i.e., if the licensee is

unable to obtain the property interests of all lands serving a project purpose).[11] Therefore,in any license application filed for the project, please indicate, on Exhibit G, the location of Riverside Park, as well as any other nearby local or state parks, recreation areas, or wildlife refuges. If the Exhibit G indicates any overlap between any such lands and the proposed project boundary, please consult with the property owner(s) of such lands to discuss the option of obtaining the necessary property rights to those lands.

Response

Riverside Park is on the bluff to the west of the James River. The park is separated by the CSX railroad and does not connect with the James River. The park does not overlap with the project boundary and Applicant sees no hope of it ever being connected unless the CSX railroad is abandoned. Accordingly, Applicant has not included the park on the Exhibit G drawings or referenced it in the actual license application, other than a passing reference to the 850 acres of Lynchburg parkland near the project site in the Recreation section of Exhibit E.

Engineering Issues

19. Scott's Mill Hydro proposes to add a 2-foot-high concrete cap on the crest of the primary spillway. Staff's comments on the original exemption application—specificallyitem No. 37 in the letter issued on October 28, 2020—requested several analyses to aid its evaluation of the potential effects associated with this proposal to raise the dam, including a comparison of upstream inundation effects under existing versus proposed conditions. Specifically, staff requested that Scott's Mill Hydro conduct a study of historical storms and floods that occurred near the dam (including a flood frequency analysis), compare upstream impacts on non-project properties and structures (e.g., residences, campgrounds, and businesses) under normal flow and flood flow scenarios, and provide inundation maps (including electronic shapefiles) and all input and output files of any modeling simulations used to support these analyses.

Scott's Mill Hydro did not provide a complete response to item No. 37. First, Scott's Mill Hydro did not complete the requested study of historical storms and floodsbecause it states the information needed to assess water level changes during historic floods can be gleaned from a Federal Emergency Management Agency (FEMA) report that examined water levels in the project vicinity associated with the 10-, 50-, 100-, and500-year flood events.[12] Secondly, Scott's Mill Hydro provided no details about the homes/structures located upstream of the project with respect to their elevations and the water surface profiles for storms during existing and proposed conditions. Scott's Mill Hydro contends that such an analysis is not needed because the maximum change in water levels associated with the proposal to raise the dam would only be 2.5 feet,[13] whichit believes is unlikely to cause significant impacts to any

structures or environmental resources. Lastly, Scott's Mill Hydro did not provide any inundation maps and suggests that such maps would be of little value given the steep banks along the project impoundment (i.e., any inundation effects would be minor due to bank profile).

A complete response to item No. 37 is necessary to facilitate Commission staff's assessment of how the proposal to raise the dam would affect public safety and environmental resources. Therefore, in any license application filed for the project, please develop a hydraulic model to quantify the: (1) observed headwater and tailwater elevations at the project's spillways under historic flows (which is needed to confirm theproject's spillway discharge rating curves) and (2) incremental impacts to upstream structures and environmental resources along the proposed project's shorelines, to allow staff to determine whether additional risks are being applied to these resources/structuresby raising the dam. Also, please include a study report for the hydraulic model that includes assumptions, detailed descriptions of the methods used to quantify incremental impacts to upstream structures and environmental resources along the proposed project'sshorelines, as well as all modeling results, including inundation maps for all scenarios evaluated (and the accompanying electronic shapefiles) and all input/output files of the modeling simulations used in the analyses.

Response
Applicant conducted a model simulation of historic storms to determine upstream inundation effects to compare existing conditions to proposed conditions. Applicant evaluated floods occurring in 1985 (flood of record; peak inflow of 207,000 cfs, maximum daily inflow 180,000 cfs), 1996 (peak inflow of 116,000 cfs, maximum daily inflow 93.600 cfs), and 2004 (peak inflow 71900 with a maximum daily f). The 1985 storm has a recurrence interval between 100 and 500 years, which have corresponding flood peaks of 159,000 cfs and 255,000 cfs. The 1996 flood is smaller than the 50-year flood, which has a peak of 129,000 cfs and significantly greater than the 10 year flood (peak of 79,100 cfs). The 2004 flood is less than the 10-year flood and has about a 5 year recurrence interval.

---

[11] Section 21 of the FPA states that no licensee may use the right of eminent domain under this section to acquire any lands or other property that, prior to October 24,1992, were owned by a state or political subdivision thereof and were part of or included within any public park, recreation area or wildlife refuge established under state or local law.

[12] The FEMA report is included in Appendix B of Exhibit E of the originalexemption application.

Applicant analyzed three of the 10 storms requested by Commission staff. Because the storage in the headpond is so small relative to the inflow, there is not much difference between inflow and outflow. Accordingly, a specific flow level has approximately the same headpond elevation for each storm. That is, an inflow of say 70,000 cfs had approximately the same headpond level in all three storms (i.e., for existing conditions 522.6 feet in 1985, 522.4 feet in 1996, and 522.6 feet in 2004; for proposed project conditions 525.1 feet in 1985, 525.0 feet in 1996 and 525.1 feet in 2004). Therefore, Applicant determined there was no need to evaluate more than three storms.

Applicant included the input and output files for the three storms in Exhibit E, Appendix K. The results confirm Applicant's previous analysis of maximum water differences of 2.6 feet. (Applicant previously estimated a maximum water level differential of 2.5 feet.) Because of the steepness of the shoreline, the inundation levels between existing and proposed conditions are too small to show up on inundation maps. Therefore, only one inundation map was prepared for the 1985 flood showing a maximum flood level of 537.6 feet for the proposed conditions. Since there is approximately a 9-foot increase in water levels from Scott's Mill to Reusens based on FEMA's analysis for the 500 year flood and an 8.5 foot increase for the 100 year flood, Applicant estimated that for the 1985 flood, the water level would increase from 537.6 feet at Scott's Mill to about 546.5 feet at Reusens. Accordingly, Applicant plotted the inundation level for a contour elevation of 540 feet to estimate flooding effects. Structures were marked on the inundation map based on Google Earth map structure locations.

On the west side of the James River, there are no structures except for several structures owned by CSX railroad located about one half mile downstream from Reusens Dam. These structures appear to be between elevation 540 and 560 feet and could be affected by storms greater than the 100-year flood. Thus, a storm like the one which occurred in November 1985 flood could affect some CSX structures, but for storms less than the 100 year flood, they would not be impacted by either the existing or proposed project conditions.

On the east side there are several structures about a mile downstream of Reusens Dam at the upstream end of Woodruff Island as observed from Google Earth. They appear to be at about elevation 540 feet. The horizontal distance between contour 520 and 540, is about 150 feet. This is the least sloped area between these contour intervals from Reusens Dam to Scott's Mill Dam. For each foot increase, there is about 15 additional feet of ground that would be inundated. Thus, these structures could be minimally affected during a flood such as occurred in 1985. However, at smaller floods, the structures appear to be at a sufficiently high elevation to not be affected. Due to the accuracy of the analysis a detailed survey of elevations would be needed to determine if there were effects to these structures.

Downstream adjacent to Woodruff Island, the slope around the 520 to 540 contour is on the order of 1:10. For each foot rise there are 10 horizontal feet. Structures are set back about 100 to 600 feet from the river at about elevation 540 or greater. Only at larger floods would these

structures see effects of the proposed project conditions. Again, detailed surveys would be needed to determine the additional extent of flooding, but it would likely be on the order of 10 to 15 feet horizontally and only for floods greater than a 100-year recurrence interval.

There are additional structures to the east of Treasure Island. They are set back about 150 feet or more from the James River and appear to be at an elevation on the order of 540 feet. Similar 1:10 slopes can be found here. Again, only at the larger floods greater than 100 years would the structures potentially be affected. This area is about 2 ½ miles downstream from Reusens Dam. Per FEMA, the existing conditions flood level for the 100-year flood is 532.5 feet in this area. The proposed project conditions could increase the water level about 2 feet at a flow of 159,000 cfs (i.e., 100-year flood) to about 534.5. For the 1985 storm, modeled elevations at 159,000 cfs indicate headpond levels at Scott's Mill of 531 and 533 feet for existing and proposed conditions, respectively.

There are several structures adjacent to Daniel Island between River Road and the James River. The structures on the east side of River Road away from the James River are at an elevation of about 540 feet and again only would be affected by the floods greater than 100 years. The structures between the James River and River Road appear to be at about elevation 530. It appears these structures could be affected by the 100-year flood under existing conditions. There would be an additional increase of 2 feet in water levels under the proposed project conditions.

20. The responses to staff's comments on the original exemption application regardingthe dam stability analyses performed as part of the preliminary Supporting Design Report(SDR) are inadequate. Specifically, the computed factor of safety for the primary masonry spillway section under normal loading conditions in Appendix D of Exhibit F ofthe original exemption application does not meet the Division of Dam Safety and Inspection's (D2SI) minimum factor of safety requirement. Additionally, the analyses donot follow D2SI's Chapter III "Gravity Dams" Engineering Guidelines. The factor of safety was computed by comparing the sliding forces with the resisting forces. As specified in Chapter III "Gravity Dam" Engineering Guidelines, the factor of safety must be computed by comparing the available friction angle with the required friction angle. Therefore, the SDR of any license application filed for the project must include stability analyses of the primary masonry spillway section, masonry bastion section, and masonry arch section and powerhouse under all probable loading conditions such as normal, flood,and post-seismic loading conditions. Please note that D2SI does not accept pseudo static methods for the seismic analysis. The stability analyses must be based on the proposed configuration of each structure as shown in Exhibit F of the original exemption application. Free body diagrams must be included for each structure as well as a description of all assumptions.

[13] Scott's Mill Hydro used the weir equation to predict changes in impoundmentelevations associated with its proposal to raise the dam.

made in the corresponding analyses. More details are available in Chapter 3 of our Engineering Guidelines, which is available at: https://www.ferc.gov/sites/default/files/2020-04/chap3.pdf

Response

Applicant appreciates Commission staff's willingness to discuss the dam stability analysis in December 2021and on February 2, 2022. Per those discussions, Applicant reevaluated the stability of the main section of the Scott's Mill Dam per FERC's Engineering Guidelines. The updated stability analysis is presented in the Supporting Design Report. As part of its analysis, Applicant determined that the 1981 drawings prepared by AEP were in error. Applicant was able to obtain the original construction drawings for the horseshoe section of the dam and determined that the upstream slope was constructed at a 45 degree angle. Further the specifications demonstrate the workmanship in how the dam was constructed and the bonding of the masonry stone. Unfortunately, Applicant was unable to uncover the original construction drawings for the main spillway portion of the dam. Nonetheless, Applicant was able to make reasonable assumptions about the dam construction based on the horseshoe design. Applicant plans to verify these assumptions with field evaluation during the detail design.

Applicant conducted only a cursory analysis of the horseshoe section of dam, since much of it will be removed during project construction. However, the horseshoe section will be used as part of the cofferdam during the powerhouse construction.

Applicant did not do an evaluation of the bastion section of the dam because these section will be reconstructed and included as part of the powerhouse. It will be tied into the main section of the spillway.