FEDERAL ENERGY REGULATORY COMMISSION
Washington, DC 20426
July 9, 2019

OFFICE OF ENERGY PROJECTS

Project No. 2466-034 – Virginia
Niagara Hydroelectric Project
Appalachian Power Company

VIA FERC Service

Subject: Scoping Document 2 for the Niagara Hydroelectric Project, P-2466-034

To the Party Addressed:

The Federal Energy Regulatory Commission (Commission) is currently reviewing the Pre-Application Document submitted by Appalachian Power Company (Appalachian) for relicensing the Niagara Hydroelectric Project (FERC No. 2466) (Niagara Project). The project is located on the Roanoke River, in Roanoke County, Virginia. The project does not occupy federal land.

Under the Integrated Licensing Process, Appalachian must file its preliminary licensing proposal or draft license application by October 1, 2021. The final license application must be filed with the Commission by February 28, 2022, two years before the license expires.

Pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended, Commission staff intends to prepare an environmental assessment (EA), which will be used by the Commission to determine whether, and under what conditions, to issue a new license for the project. To support and assist our environmental review, we are beginning the public scoping process to ensure that all pertinent issues are identified and analyzed, and that the EA is thorough and balanced.

Our preliminary review of the scope of environmental issues associated with the proposed relicensing of the Niagara Project was described in Scoping Document 1 (SD1), issued March 26, 2019. We requested comments on SD1, conducted an environmental site review, and held scoping meetings on April 24 and 25, 2019, to hear the views of all interested agencies and entities on the scope of issues that should be addressed in the EA. Based on the meetings and the submission of written comments received throughout the scoping process, we have updated SD1 to reflect our current view of issues and alternatives to be considered in the EA. ***Key changes from SD1 to SD2 are identified in bold, italicized type.***

SD2 is being distributed to the Commission's official mailing list (see section 9.0 of the attached SD2). If you wish to be added to, or removed from, the Commission's official mailing list, please send your request by email to ferconlinesupport@ferc.gov or by mail to: Secretary, Federal Energy Regulatory Commission, 888 First Street, N.E., Room 1A, Washington, DC, 20426. All written or emailed requests must specify your wish to be removed from or added to the mailing list and must clearly identify the following on the first page: **Niagara Hydroelectric Project No. 2466-034**.

You may also register online at http://www.ferc.gov/docs-filing/esubscription.asp to be notified via email of new filings and issuances related to this or other pending projects. For assistance, please contact FERC Online Support at ferconlinesupport@ferc.gov.

The enclosed SD2 supersedes SD1. SD2 is issued for informational use by all interested parties; no response is required. If you have any questions about SD2, the scoping process, or how Commission staff will develop the EA for this project, please contact Allyson Conner at allyson.conner@ferc.gov or (202) 502-6082. Additional information about the Commission's licensing process and the Niagara Project may be obtained from our website (www.ferc.gov) or Appalachian's licensing website, www.aephydro.com.

Enclosure: Scoping Document 2

SCOPING DOCUMENT 2

NIAGARA HYDROELECTRIC PROJECT

VIRGINIA

PROJECT NO. 2466-034

Federal Energy Regulatory Commission
Office of Energy Projects
Division of Hydropower Licensing
Washington, DC

JULY 2019

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1.0 INTRODUCTION

The Federal Energy Regulatory Commission (Commission or FERC), under the authority of the Federal Power Act (FPA),[1] may issue licenses for terms ranging from 30 to 50 years for the construction, operation, and maintenance of non-federal hydroelectric projects. On January 28, 2019, Appalachian Power Company (Appalachian) filed a Pre-Application Document (PAD) and Notice of Intent to seek a new license for the Niagara Hydroelectric Project, FERC Project No. 2466 (Niagara Project or project).[2]

The Niagara Project is located on the Roanoke River in Roanoke County, Virginia. The average annual generation from 2010 to 2014 of the project was 8,853 megawatt-hours (MWh).

A detailed description of the project is provided in section 3.0. The location of the project is shown in figure 1. The Niagara Project does not occupy federal land.

The National Environmental Policy Act (NEPA) of 1969,[3] the Commission's regulations, and other applicable laws require that we independently evaluate the environmental effects of relicensing the Niagara Project as proposed, and also consider reasonable alternatives to the licensee's proposed action. At this time, we intend to prepare an environmental assessment (EA) that describes and evaluates the probable effects, including an assessment of the site-specific and cumulative effects, if any, of the proposed action and alternatives. The EA preparation will be supported by a scoping process to ensure identification and analysis of all pertinent issues. Although our current intent is to prepare an EA, there is a possibility that an environmental impact statement (EIS) will be required. The scoping process will satisfy the NEPA scoping requirements, irrespective of whether the Commission issues an EA or an EIS.

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[1] 16 U.S.C. § 791(a)-825(r) (2012).

[2] The current license for the Niagara Project was issued on March 25, 1994, and expires on February 29, 2024.

[3] National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321-4370(f) (2012).

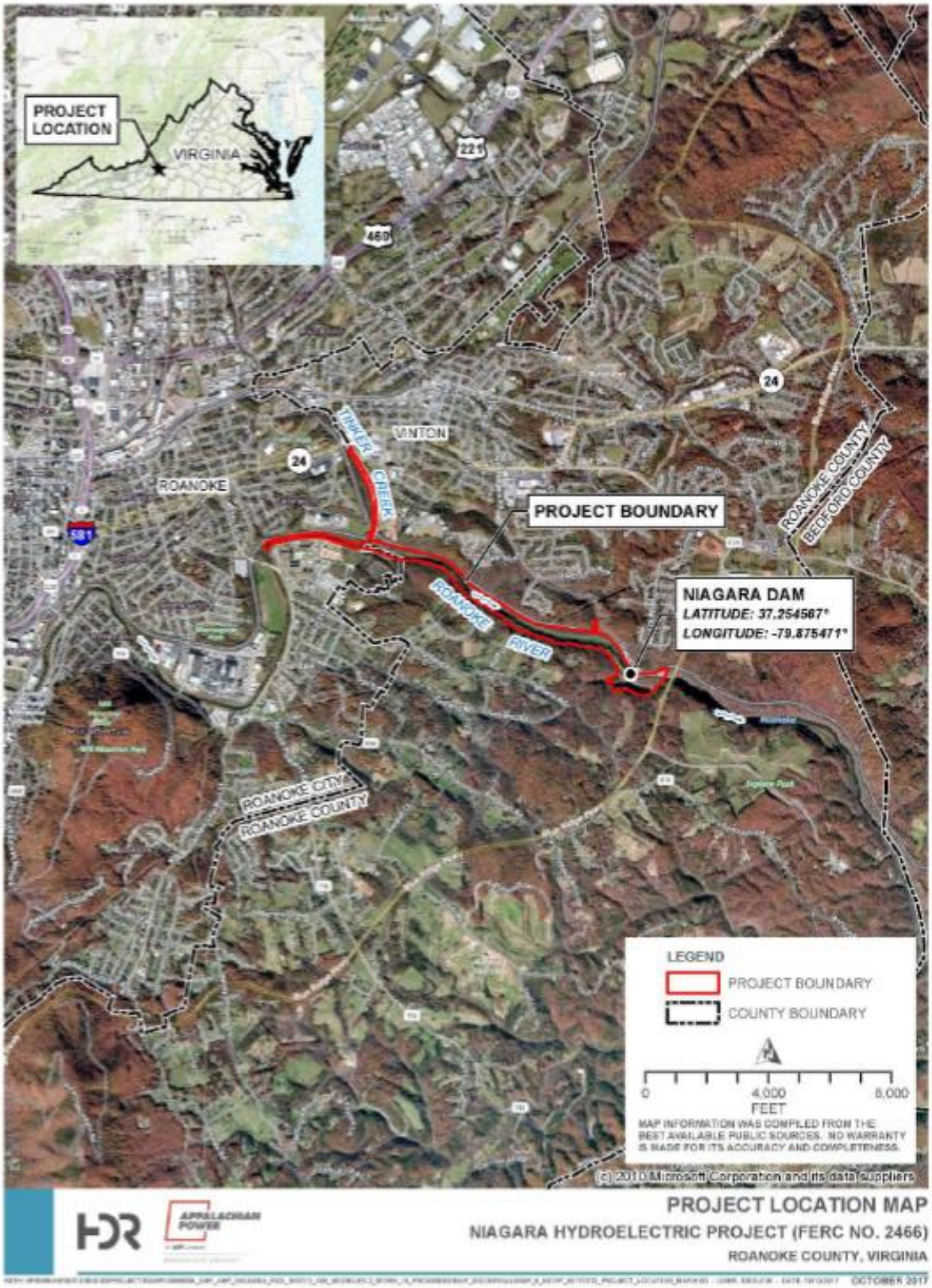

Figure 1. Location of the project. (Source: Appalachian).

2.0 SCOPING

Scoping Document 2 (SD2) is intended to advise all participants as to the proposed scope of the EA and to seek additional information pertinent to this analysis. This document contains: (1) a description of the scoping process and schedule for the development of the EA; (2) a description of the proposed action and alternatives; (3) a preliminary identification of environmental issues and proposed studies; (4) a request for comments and information; (5) a proposed EA outline; and (6) a preliminary list of comprehensive plans that are applicable to the project.

2.1 PURPOSES OF SCOPING

Scoping is the process used to identify issues, concerns, and opportunities for enhancement or mitigation associated with a proposed action. In general, scoping should be conducted during the early planning stages of a project. The purposes of the scoping process are as follows:

- invite participation of federal, state, and local resource agencies, Indian tribes, non-governmental organizations (NGOs), and the public to identify significant environmental and socioeconomic issues related to the proposed project;

- determine the resource issues, depth of analysis, and significance of issues to be addressed in the EA;

- identify how the project would or would not contribute to cumulative effects in the project area;

- identify reasonable alternatives to the proposed action that should be evaluated in the EA;

- solicit, from participants, available information on the resources at issue, including existing information and study needs; and

- determine the resource areas and potential issues that do not require detailed analysis during review of the project.

2.2 COMMENTS, SCOPING MEETINGS, AND ENVIRONMENTAL SITE REVIEW

Commission staff issued Scoping Document 1 (SD1) on March 26, 2019, to enable resource agencies, Indian tribes, non-governmental organizations (NGO's), and the public to more effectively participate in and contribute to the scoping process. In SD1, we requested clarification of the preliminary issues concerning the project and identification of any new issues that needed to be addressed in the EA. We revised SD1 following the scoping meetings, environmental site review, and review of written comments filed during the scoping comment period, which ended May 25, 2019. This SD2 presents our current view of issues and alternatives to be considered in the EA. To facilitate review, key changes from SD1 to SD2 are identified in bold and italicized type.

We conducted scoping meetings in Roanoke, Virginia on April 24 and 25, 2019, and an environmental site review was conducted on April 24, 2019, to identify potential resource issues associated with the Niagara Project. The scoping meetings and environmental site review were noticed in local newspapers and the Federal Register. A court reporter recorded and transcribed oral comments made during both scoping meetings.

In addition to oral comments received at the scoping meetings and written comments received from individuals, written comments were filed by the following entities:

COMMENTING ENTITY	*FILING DATE*
Tri-County Lakes Administrative Commission	*May 22, 2019*
Federal Energy Regulatory Commission	*May 22, 2019*
U.S. Environmental Protection Agency	*May 23, 2019*
Roanoke Valley Greenway Commission	*May 23, 2019*
U.S. Department of the Interior, National Park Service	*May 24, 2019*
Virginia Department of Environmental Quality	*May 24, 2019*
Virginia Department of Game and Inland Fisheries	*May 24, 2019*
Town of Vinton	*May 24, 2019*
Dr. Paul Angermeier, Virginia Tech	*May 24, 2019*
U.S. Department of the Interior, Fish and Wildlife Service	*May 28, 2019*
Roanoke County	*May 28, 2019*
Roanoke River Blueway Committee	*May 28, 2019*

All comments received are part of the Commission's official record for the project. Information in the official file is available for inspection and reproduction at

the Commission's Public Reference Room, located at 888 First Street, NE, Room 2A, Washington, D.C., 20426, or by calling (202) 502-8371. Information also may be accessed through the Commission's eLibrary system using the "Documents & Filings" link on the Commission's webpage at http://www.ferc.gov. Call (202) 502-6652 for assistance.

2.3 ISSUES RAISED DURING SCOPING

The issues raised by participants in the scoping process are summarized and addressed below. Note that the primary purpose of SD2 is to identify the issues to be analyzed in the EA. The summary does not include every oral and written comment made during the scoping process. We revised SD1 to address only those comments relating directly to the scope of environmental issues for the Niagara Project. Comments on the PAD and study requests are not discussed here, but will be considered during study plan development and the ensuing study plan meetings. Further, we do not address comments that are recommendations for license conditions, such as protection, mitigation, and enhancement (PM&E) measures, as these comments will be addressed in the EA or any license order that is issued for this project. We will request final terms, conditions, recommendations, and comments when we issue our Ready for Environmental Analysis (REA) notice. Finally, we do not address comments or recommendations that are administrative in nature, such as requests for changes to the mailing list. Those items will be addressed separately.

General Comments

Comment: U.S. Fish and Wildlife Service (FWS) requests additional information on the existing project facilities, specifically the bar-spacing on the trash racks, the intake velocity within one foot of the trash racks, and more details pertaining to the turbines (e.g., runner diameter, rated speed, number of blades).

Response: As stated in section 4.3.5 of the PAD, the steel trashracks have 3.625-inch bar spacing. Section 5.4.2.1 of the PAD indicates that forebay intake velocities were calculated as part of an entrainment study for the previous re-licensing and ranged from 0.9 to 1.2 feet per second (Appalachian Power Company 1991).[4] Details on the vertical shaft Francis units can be found in section 4.3.9 of the PAD.

[4] Appalachian Power Company. 1991. Application for License for Major Water Power Project 5 Megawatts or Less (Project no. 2466). Virginia.

Cumulative Effects

Comment: FWS requests that cumulatively affected resources include the Roanoke logperch (Percina rex).

Response: As indicated in section 4.2.4 of SD1, Roanoke logperch will be included in the cumulative effects analysis. Section 4.1.1 was modified to clarify that Roanoke logperch will be included as a resource that could be cumulatively affected.

Comment: In SD1, staff identified water quality and aquatic habitat as resources that could be cumulatively affected by the continued operation and maintenance of the Niagara Project in combination with other hydroelectric projects and activities in the Roanoke River. FWS requests that cumulatively affected resources include diadromous fish due to the presence of multiple, stacked hydropower projects on the Roanoke River that have collectively inhibited fish migration. FWS states that barriers to fish migration have affected the dispersal of mussels throughout the Roanoke River.

Response: FWS states that diadromous fishes such as American eel, river herring, and sturgeon may have historically migrated into the upper Roanoke River prior to dam construction, and points to efforts in the Roanoke River to restore passage for eels. Currently, upstream passage is provided via trap and transport of eels at Roanoke Rapids and Gaston hydroelectric project (FERC Project No. 2009), and FWS indicates that there are plans to provide passage at the John H. Kerr Dam, operated by the United States Army Corps of Engineers. There are no fish passage facilities at the remaining hydroelectric dams further upstream on the Roanoke River (Leesville and Smith Mountain [FERC Project No. 2210], and Niagara). There is indication that some diadromous species (e.g., American eels and American shad) have historically migrated into the headwaters of the Roanoke River (NMFS and FWS 2016). [5] ***Accordingly, we have modified sections 4.1.1 and 4.2.2 to include diadromous fishes as resources that could be cumulatively affected by the continued operation of the Niagara Project in combination with other hydropower projects on the Roanoke River.***

Comment: FWS requests that the geographic scope of the cumulative effects analysis on aquatic habitat and water quality be expanded downstream to the first hydropower project dam encountered on the river (Roanoke Rapids). FWS states that the nature of multiple stacked hydropower projects on the Roanoke River has caused

[5] National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (FWS). 2016. Roanoke River Diadromous Fishes Restoration Plan. Raleigh, North Carolina. May 2016.

cumulative impacts on aquatic resources. The series of dams prevent upstream passage of American eel and other migratory fishes, and subjects them to entrainment and impingement during downstream migration. Restricted eel migration has led to diminished freshwater mussel populations and reduced water quality throughout the Roanoke River. Further, FWS states that with dam construction, large stretches of riverine habitat (including run and riffle habitats) have been converted to lacustrine conditions, eliminating habitat for the endangered Roanoke logperch. FWS believes the dams have contributed to the physical and genetic isolation of logperch populations.

Response: In SD1, staff identified the geographic scope for cumulative effects to include the Roanoke River from the confluence of the North and South Forks to the upper extent of Smith Mountain Lake. Based on information regarding diadromous fish restoration efforts in the Roanoke River (NMFS and FWS 2016), there is some indication that the geographic scope identified by the FWS may be reasonable for diadromous fishes. We acknowledge that the series of dams has altered aquatic habitat across a broad stretch of the Roanoke River. Accordingly, we have modified the geographic scope for the cumulative effects analysis of diadromous fish and aquatic habitat in section 4.1.2 to extend downstream to the Roanoke Rapids Dam.

The known range of the upper Roanoke River population of the Roanoke logperch extends from the Niagara Dam upstream into the North and South Forks (FWS 2007).[6] Additional populations are located in the Pigg River and tributaries of the middle Roanoke River. Although the historical connectivity of these populations is not well understood, construction of hydroelectric projects has contributed to fragmentation of the species habitat (FWS 2007). Hence, we have modified the geographic scope of cumulative effects for the Roanoke logperch to extend downstream to the confluence of Big Otter Creek with the Roanoke River, which is the known downstream extent of the middle Roanoke River population.

As for expanding the geographic scope for water quality, FWS did not provide evidence to support how the continued operation and maintenance of the Niagara Project in combination with other projects in the basin would affect water quality beyond the scope identified in SD1. Therefore, the geographic scope for water quality will remain as identified in SD1, from the confluence of the North and South Forks of the Roanoke River to the upper extent of Smith Mountain Lake.

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[6] U.S. Fish and Wildlife Service (FWS). 2007. Roanoke logperch (Percina rex) 5-Year Review: Summary and Evaluation. Summer 2007. Available online at: https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=E01G. Accessed June 24, 2019.

Aquatic Resources

Comment: Several commenters express concern about the adequacy of the existing minimum flow requirement of 8 cubic feet per second (cfs) to support aquatic resources in the bypassed reach of the Roanoke River at the Niagara Dam.

Response: In section 4.2.2 of SD1, staff indicated that the EA would evaluate the effects of project operation, including the existing minimum flow requirement, on fish and aquatic habitat downstream of the project and in the bypassed reach. Therefore, no changes have been made to SD2.

Comment: FWS, Virginia Department of Game and Inland Fisheries (Virginia DGIF), and Virginia Department of Environmental Quality (Virginia DEQ) request that the EA account for project effects on freshwater mussels.

Response: We modified a bullet in section 4.2.2 of this document to indicate that the EA will consider the effects of project operation and maintenance on freshwater mussels.

Threatened and Endangered Species

Comment: FWS states that additional state and federally listed mussel species have the potential to occur in the project area, including Atlantic pigtoe (Fusconaia masoni, state threatened and proposed federally threatened), green floater (Lasmigona subviridis, state threatened) and James spinymussel (Pleurobema collina, federally and state endangered).

Response: In the PAD, the applicant provided a list of threatened or endangered species with the potential to occur in the project area, which included the Indiana bat, northern long-eared bat, and Roanoke logperch. Staff verified this species list using the FWS Environmental Conservation Online System (ECOS) Information for Planning and Consultation (IPaC) website. Although neither Atlantic pigtoe nor James spinymussel were included in the IPaC results for the project area, based on FWS's comments we have included the Atlantic pigtoe and James spinymussel in the bulleted list under section 4.2.4 of federally listed species that could be affected by project operation and maintenance. State-listed species, including freshwater mussels, will be considered in the Aquatic Resources section.

Recreation and Aesthetics

Comment: Several commenters describe the existing canoe portage trail as too long and too steep for re-entry into the tailrace. Multiple commenters also state that vehicular access to the portage is restricted by a keyed gate.

Response: In section 4.2.5 of SD1, staff indicated that the EA would address the adequacy of existing recreational facilities and public access to meet current and future recreational demand. Therefore, no changes have been made to SD2.

Comment: Several commenters describe the need for a debris management plan that would incorporate a trash collection system at the dam. The commenters state that trash passed through the project results in unsightly accumulations of trash below the Niagara Dam and further down river.

Response: In section 4.2.5 of SD1, staff indicated that the EA would address the effects of continued project operation on aesthetics in the project area. Therefore, no changes have been made to SD2.

Comprehensive Plans

Comment: The Roanoke Valley Greenway Commission and Roanoke County request that the Roanoke Valley/Blue Ridge Parkway Trail Plan Environmental Assessment and the Blue Ridge Parkway General Management Plan/Environmental Impact Statement be considered as comprehensive plans. Roanoke County also requests that the Blue Ridge Parkway Foundation Document Overview for Virginia/North Carolina and the Roanoke River Greenway Plan be considered as comprehensive plans.

Response: Entities must file any potential comprehensive plans in accordance with section 2.19 of the Commission's regulations, along with a cover letter indicating that the documents are to be considered as comprehensive plans under section 10(a)(2)(A) of the FPA, with the Commission. State and federal comprehensive plans can be e-filed at: http://www.ferc.gov/docs-filing/efiling.asp. Once registered and logged in, click efiling, then select 'Hydro: Washington DC' in the first efiling menu column, followed by 'Report/Form for Existing Project' in the second column. In the third column, select 'Report/Form' and then click the 'next' button. On the next screen, enter ZZ09-5 as the docket number and click search. Then, select ZZ09-5-000 (using the plus sign) as the appropriate docket for your filing and upload your document or documents.

Comment: FWS identified the Roanoke River Diadromous Fishes Restoration Plan as an existing Commission-approved comprehensive plan that should be considered during our environmental review. In addition, FWS stated that it will consider filing the Roanoke Logperch Recovery Plan for FERC's consideration as a comprehensive plan.

Response: We have added the Roanoke River Diadromous Fishes Restoration Plan to our list of plans that are relevant to the project and have modified section 8.0 accordingly. If FWS submits the Roanoke Logperch Recovery Plan to the Commission as a comprehensive plan pursuant to section 2.19 of the Commission's regulations and it receives approval as a comprehensive plan, in the EA we would consider the extent to which the Niagara Project is consistent with the plan.

3.0 PROPOSED ACTION AND ALTERNATIVES

In accordance with NEPA, the environmental analysis will consider the following alternatives, at a minimum: (1) the no-action alternative, (2) the applicant's proposed action, and (3) alternatives to the proposed action.

3.1 NO-ACTION ALTERNATIVE

Under the no-action alternative, the Niagara Project would continue to operate as required by the current project license (i.e., there would be no change to the existing environment). No new environmental protection, mitigation, or enhancement measures would be implemented. We use this alternative to establish baseline environmental conditions for comparison with other alternatives.

3.1.1 Existing Project Facilities

The Niagara Project consists of: (1) a 52-foot-high, 462-foot-long concrete dam, inclusive of the right non-overflow abutment (70 feet) and main spillway (392 feet); (2) a 62-acre impoundment with a gross storage capacity of 425 acre-feet at the normal pool elevation of 884.4 feet;[7] (3) an 11-foot-diameter, 500-foot-long corrugated metal pipe penstock with associated entrance and discharge structures; (4) a 1,500-foot-long bypassed reach; (5) a 92-foot-long, 58-foot-wide, 42-foot-high concrete powerhouse containing two generating units with a total authorized installed capacity of 2.4 megawatts (MW); (6) a 103-foot-long auxiliary spillway with a crest elevation of 886 feet located downstream of the upstream intake; (7) transmission facilities consisting of 50-foot-long 2.4-kilovolt (kV) generator leads and a 3-phase, 2.4/12-kV, 2,500-kilovolt ampere (kVA) step-up transformer; and (8) appurtenant facilities.

3.1.2 Existing Project Operations

The Niagara Project operates in a run-of-river mode under all flow conditions, where inflow equals outflow. The project is operated to maintain the impoundment at or near elevation 884.4 feet, which is 0.6 feet below the crest of the spillway. During extreme flow conditions, such as rapidly changing inflows, Appalachian operates the project with a minimum impoundment elevation of 883.4 feet. Run-of-river operation may be temporarily modified by operating emergencies beyond the control of Appalachian and for short periods upon mutual agreement among Appalachian, U.S. Fish

[7] All elevations herein are referenced to National Geodetic Vertical Datum of 1929 (NGVD 29).

and Wildlife Service (FWS), and the Virginia Department of Game and Inland Fisheries (Virginia DGIF).

During periods of high flow, all flows exceeding the maximum generation capacity of the powerhouse are passed over and through the main spillway. When the reservoir elevation reaches 886.0 feet, water begins to spill over the auxiliary spillway. When the tailwater elevation at the powerhouse reaches 832.0 feet, the generating units are shut down.

Appalachian releases a minimum flow of 50 cubic feet per second (cfs), or inflow to the impoundment, whichever is less, below the project. Appalachian provides a total minimum flow of 8 cfs into the bypassed reach through the sluice gate or over the spillway. Flows are measured at the U.S. Geological Survey (USGS) gage located approximately 200 feet downstream of the powerhouse (USGS 2056000 Roanoke River at Niagara, Virginia).

3.2 APPLICANT'S PROPOSAL

The proposed action is to continue the existing operation and maintenance of the Niagara Project.

3.2.1 Proposed Project Facilities and Operation

Appalachian is not proposing any changes to its project facilities or in project operation.

3.2.2 Proposed Environmental Measures

Appalachian proposes to continue the existing operation and maintenance of the Niagara Project which includes the protection, mitigation, and enhancement (PM&E) measures required by the current license and subsequent amendments. These measures are described below.

<u>Geologic and Soil Resources</u>

- There are no existing or proposed PM&E measures related to geology and soils for the Niagara Project. The potential need for PM&E measures will be evaluated during the relicensing process.

Aquatic Resources

- Continue operating the project in a run-of-river mode, maintaining the elevation of the impoundment at or near 884.4 feet (Article 401).

- Continue providing a minimum flow of 50 cfs, or inflow to the project, whichever is less, to the Roanoke River downstream of the powerhouse (Article 402).

- Continue providing a minimum flow of 8 cfs to the project's bypassed reach (Article 403).[8]

Terrestrial Resources

- Continue to follow a Commission-approved Wildlife Management Plan that includes monitoring habitat over the term of the existing license (Article 407).

Threatened and Endangered Species

- There are no existing or proposed PM&E measures related to terrestrial resources for the Niagara Project. The potential need for PM&E measures will be evaluated during the relicensing process.

Recreation and Land Use

- Continue to provide recreation access via a canoe portage trail (Article 411).

Aesthetic Resources

- There are no existing or proposed PM&E measures related to aesthetic resources for the Niagara Project. The potential need for PM&E measures will be evaluated during the relicensing process.

[8] 93 FERC ¶ 62,049 (2000). Order Approving Modification to Flow Monitoring Plan.

Cultural Resources

- There are no existing or proposed PM&E measures related to cultural resources for the Niagara Project. The potential need for PM&E measures will be evaluated during the relicensing process.

3.3 DAM SAFETY

It is important to note that dam safety constraints may exist and should be taken into consideration in the development of proposals and alternatives considered in the pending proceeding. For example, proposed modifications to the dam structure, such as the installation of flashboards or fish passage facilities, could impact the integrity of the dam structure. As the proposal and alternatives are developed, the applicant must evaluate the effects and ensure that the project would meet the Commission's dam safety criteria found in Part 12 of the Commission's regulations and the Engineering Guidelines (http://www.ferc.gov/industries/hydropower/safety/guidelines/eng-guide.asp).

3.4 ALTERNATIVES TO THE PROPOSED ACTION

Commission staff will consider and assess all alternative recommendations for operational or facility modifications, as well as PM&E measures identified by the Commission, the agencies, Indian tribes, NGOs, and the public.

3.5 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY

At present, we propose to eliminate the following alternatives from detailed study in the EA.

3.5.1 Federal Government Takeover

In accordance with § 16.14 of the Commission's regulations, a federal department or agency may file a recommendation that the United States exercise its right to take over a hydroelectric power project with a license that is subject to sections 14 and 15 of the FPA.[9] We do not consider federal takeover to be a reasonable alternative. Federal takeover of the project would require congressional approval. While that fact alone would not preclude further consideration of this alternative, there is currently no evidence showing that federal takeover should be recommended to Congress. No party has

[9] 16 U.S.C. §§ 791(a)-825(r).

suggested that federal takeover would be appropriate, and no federal agency has expressed interest in operating the project.

3.5.2 Non-power License

A non-power license is a temporary license the Commission would terminate whenever it determines that another governmental agency is authorized and willing to assume regulatory authority and supervision over the lands and facilities covered by the non-power license. At this time, no governmental agency has suggested a willingness or ability to take over the project. No party has sought a non-power license, and we have no basis for concluding that the Niagara Project should no longer be used to produce power. Thus, we do not consider a non-power license a reasonable alternative to relicensing the project.

3.5.3 Project Decommissioning

Decommissioning of the project could be accomplished with or without dam removal. Either alternative would require denying the relicense application and surrender or termination of the existing license with appropriate conditions. There would be significant costs involved with decommissioning the project and/or removing any project facilities. The project provides a viable, safe, and clean renewable source of power to the region. With decommissioning, the project would no longer be authorized to generate power.

No party has suggested project decommissioning would be appropriate in this case, and we have no basis for recommending it. Thus, we do not consider project decommissioning a reasonable alternative to relicensing the project with appropriate environmental measures.

4.0 SCOPE OF CUMULATIVE EFFECTS AND SITE-SPECIFIC RESOURCE ISSUES

4.1 CUMULATIVE EFFECTS

According to the Council on Environmental Quality's regulations for implementing NEPA (40 C.F.R. 1508.7), a cumulative effect is the effect on the environment that results from the incremental effect of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time, including hydropower and other land and water development activities.

4.1.1 Resources that could be Cumulatively Affected

Based on information in the PAD and ***comments received during scoping*** for the Niagara Project, and preliminary staff analysis, we have identified water quality (i.e., dissolved oxygen and water temperature), aquatic habitat, ***and fisheries resources (i.e., diadromous fishes and Roanoke logperch)*** as resources that could be cumulatively affected by the proposed continued operation and maintenance of the Niagara Project in combination with other hydroelectric projects and other activities in the Roanoke River Basin.

4.1.2 Geographic Scope

Our geographic scope of analysis for cumulatively affected resources is defined by the physical limits or boundaries of: (1) the proposed action's effect on the resources, and (2) contributing effects from other non-hydropower activities (municipal and industrial water withdrawals/discharges) within the upper Roanoke River. We have identified the geographic scope for water quality to include the Roanoke River from the confluence of the North and South Forks (near Lafayette, Virginia) to the upper extent of Smith Mountain Lake, the 20,260-acre impoundment for the Smith Mountain Pumped Storage Project FERC No. 2210. We chose this geographic scope because it appears to capture the main municipalities upstream of the Niagara Project impoundment, which may cumulatively affect water quality in the identified geographic reach. ***For the Roanoke logperch, we have extended the geographic scope downstream to the confluence of Big Otter Creek with the Roanoke River. This scope encompasses the known downstream extent of the middle Roanoke River population of the Roanoke logperch. For aquatic habitat and diadromous fish, we have extended the geographic scope downstream to the Roanoke Rapids Dam, as multiple hydroelectric projects on the Roanoke River may contribute to cumulative effects on fish migration and riverine habitat.***

4.1.3 Temporal Scope

The temporal scope of our cumulative effects analysis in the EA will include a discussion of past, present, and reasonably foreseeable future actions and their effects on each resource that could be cumulatively affected. Based on the potential term of a new license, the temporal scope will look 30 to 50 years into the future, concentrating on the effect on the resources from reasonably foreseeable actions. The historical discussion will, by necessity be limited to the amount of available information for each resource. The quality and quantity of information, however, diminishes as we analyze resources further away in time from the present.

4.2 RESOURCE ISSUES

In this section, we present a preliminary list of environmental issues to be addressed in the EA. We identified these issues, which are listed by resource area, by reviewing the PAD and the Commission's record for the Niagara Project. This list is not intended to be exhaustive or final, but contains the issues raised to date. After the scoping process is complete, we will review the list and determine the appropriate level of analysis needed to address each issue in the EA. Those issues identified by an asterisk (*) will be analyzed for both cumulative and site-specific effects.

4.2.1 Geologic and Soils Resources

- Effects of continued project operation and maintenance on shoreline stability of the impoundment.

4.2.2 Aquatic Resources

- Effects of continued project operation and maintenance on water quality, including dissolved oxygen (DO) and water temperature, upstream and downstream of the impoundment, including the bypassed reach.*

- Adequacy of the existing minimum flows for protecting aquatic habitat for resident fishes, including species of special concern (orangefin madtom), and other aquatic resources, ***including freshwater mussels,*** downstream of the powerhouse (50 cfs) and in the bypassed reach (8 cfs).*

- Effects of continued project operation and maintenance on aquatic resources, including entrainment and impingement mortality of resident fishes.

- ***Effects of continued project operation and maintenance on the movement of diadromous fish species (e.g., American eel)****

4.2.3 Terrestrial Resources

- Effects of continued project operation and maintenance on riparian, wetland, and upland habitat and associated wildlife such as bald eagles.

4.2.4 Threatened and Endangered Species

- Effects of continued project operation and maintenance on the federally listed Indiana bat, northern long-eared bat, ***Atlantic pigtoe, James spinymussel,*** and Roanoke logperch.*,[10]

4.2.5 Recreation, Land Use, and Aesthetic Resources

- Effects of continued project operation and maintenance on recreation, land use, and aesthetics within the project area including the project impoundment, tailrace, and bypassed reach.

- Adequacy of existing recreational facilities and public access to the project to meet current and future recreational demand.

4.2.6 Cultural Resources

- Effects of project operation and maintenance on historic properties and archeological resources that are included in, eligible for listing in, or potentially eligible for inclusion in the National Register of Historic Places.

- Effects of project operation and maintenance on any previously unidentified historic or archeological resources or traditional cultural properties that may be eligible for inclusion in the National Register of Historical Places.

[10] Cumulative effects analysis applies only to Roanoke logperch.

4.2.7 Developmental Resources

- Economics of the project and the effects of any recommended environmental measures on the project's economics.

5.0 PROPOSED STUDIES

Depending upon the findings of studies completed by Appalachian and the recommendations of the consulted entities, Appalachian will consider, and may propose certain other measures to enhance environmental resources affected by the project as part of the proposed action. Appalachian's initial study proposals are identified by resource area in table 1. Detailed information on Appalachian's initial study proposals can be found in the PAD. Further studies may need to be added to this list based on comments provided to the Commission and Appalachian from interested participants, including Indian tribes.

Table 1. Appalachian's initial study proposals. (Source: Appalachian)

Resource Area and Study Name	**Proposed Study**
Geology and Soils	
Shoreline Stability Assessment	To provide updated information about existing project conditions, as well as to evaluate the need for any additional erosion control measures at specific areas of concern, Appalachian proposes to conduct a Shoreline Stability Assessment for the project. Appalachian anticipates that this assessment will consist of a survey of the project impoundment to locate any sites of erosion or shoreline instability. Appalachian proposes to inventory, map, and photograph any such areas, using a scoring or ranking system (e.g., Bank Erosion Hazard Index) to try to identify areas that have the potential to erode at unnaturally high rates and to prioritize any areas where remedial action may be needed.
Aquatic Resources	
Water Quality Study	Appalachian proposes to conduct a seasonal temperature and DO study at the project to confirm compliance with water quality standards and designated uses.

Resource Area and Study Name	Proposed Study
	Locations of monitoring equipment will be established through further consultation with Virginia Department of Environmental Quality and other stakeholders. The scope of the study would be limited to the FERC-approved project boundary.
Bypass Reach Aquatic Habitat Study	Appalachian proposes to perform a desktop aquatic habitat assessment of the bypassed reach to determine the amount of available habitat under the 8-cfs minimum flow. Appalachian states that this study may include a review of all work performed to date, and determination of appropriate methodologies used in conjunction with fisheries surveys conducted to update the species composition.
Terrestrial Resources	
Wetland and Riparian Habitat Survey	Appalachian proposes to conduct a wetland and riparian habitat assessment that will consist of field surveys to confirm, classify, and characterize wetland habitats and communities within the project boundary. Wetlands will be mapped and classified using the FWS's wetland classification system, unless otherwise recommended by resource agencies. During the wetland survey, investigators will identify the dominant plants present within a wetland habitat to the species level. During the field habitat surveys, investigators will examine the soil matrix down to approximately 18 inches if possible, and analyze soil

Resource Area and Study Name	Proposed Study
	characteristics in the field for hydric soil indicators. Principal wetland functions and values will also be determined. This study will also include characterization of riparian habitat resources within the project boundary.
Recreation Resources	
Recreational Needs Assessment	Appalachian proposes to conduct a recreational assessment of the project to assess existing recreational opportunities and potential improvements to facilities. Appalachian will incorporate existing monitoring information into the study report and recommendations and the scope will be limited to within the FERC-approved project boundary.

6.0 EA PREPARATION SCHEDULE

At this time, we anticipate the need to prepare a single EA. The EA will be sent to all persons and entities on the Commission's service and mailing lists for the Niagara Project. The EA will include our recommendations for operating procedures, as well as PM&E measures that should be part of any license issued by the Commission. All recipients will then have 30 days to review the EA and file written comments with the Commission. All comments on the EA filed with the Commission will be considered in preparation of the license order. A schedule for the EA preparation will be provided after a license application is filed.

The major milestones, with pre-filing target dates are as follows:

Major Milestone	Target Date
Scoping Meetings	April 2019
License Application Filed	February 2022
Ready for Environmental Analysis Notice Issued	
Deadline for Filing Comments, Recommendations, and Agency Terms and Conditions/Prescriptions	
Single EA Issued	
Comments on EA Due	
Deadline for Filing Modified Agency Recommendations	
Order Issued	

A copy of Appalachian's process plan, which has a complete list of relicensing milestones for the Niagara Project, including those for developing the license application, is attached as Appendix B to this SD1.

7.0 PROPOSED EA OUTLINE

The preliminary outline for the Niagara Project EA is as follows:

TABLE OF CONTENTS
LIST OF FIGURES
LIST OF TABLES
ACRONYMS AND ABBREVIATIONS
EXECUTIVE SUMMARY

1.0 INTRODUCTION
- 1.1 Application
- 1.2 Purpose of Action and Need for Power
- 1.3 Statutory and Regulatory Requirements
  - 1.3.1 Federal Power Act
    - 1.3.1.1 Section 18 Fishway Prescriptions
    - 1.3.1.2 Section 10(j) Recommendations
  - 1.3.2 Clean Water Act
  - 1.3.3 Endangered Species Act
  - 1.3.4 Coastal Zone Management Act
  - 1.3.5 National Historic Preservation Act
  - Other statutes as applicable
- 1.4 Public Review and Comment
  - 1.4.1 Scoping
  - 1.4.2 Interventions
  - 1.4.3 Comments on the Application

2.0 PROPOSED ACTION AND ALTERNATIVES
- 2.1 No-action Alternative
  - 2.1.1 Existing Project Facilities
  - 2.1.2 Project Safety
  - 2.1.3 Existing Project Operation
  - 2.1.4 Existing Environmental Measures
- 2.2 Applicant's Proposal
  - 2.2.1 Proposed Project Facilities
  - 2.2.2 Proposed Project Operation
  - 2.2.3 Proposed Environmental Measures
  - 2.2.4 Modifications to Applicant's Proposal—Mandatory Conditions
- 2.3 Staff Alternative
- 2.4 Staff Alternative with Mandatory Conditions
- 2.5 Other Alternatives (as appropriate)
- 2.6 Alternatives Considered but Eliminated from Detailed Study

8.0 COMPREHENSIVE PLANS

Section 10(a)(2) of the FPA, 16 U.S.C. section 803(a)(2)(A), requires the Commission to consider the extent to which a project is consistent with federal and state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by a project. Commission staff have preliminarily identified and reviewed the plans listed below that may be relevant to the Niagara Project. Agencies are requested to review this list and inform the Commission staff of any changes. If there are other comprehensive plans that should be considered for this list that are not on file with the Commission, or if there are more recent versions of the plans already listed, they can be filed for consideration with the Commission according to 18 CFR 2.19 of the Commission's regulations. Please follow the instructions for filing a plan at http://www.ferc.gov/industries/hydropower/gen-info/licensing/complan.pdf.

The following is a list of comprehensive plans currently on file with the Commission that may be relevant to the Niagara Project.

National Marine Fisheries Service and U.S. Fish and Wildlife Service. 2016. Roanoke River Diadromous Fishes Restoration Plan. Raleigh, North Carolina. May 2016.

National Park Service. The Nationwide Rivers Inventory. Department of the Interior, Washington, D.C. 1993.

U.S. Fish and Wildlife Service. Canadian Wildlife Service. 1986. North American waterfowl management plan. Department of the Interior. Environment Canada. May 1986.

U.S. Fish and Wildlife Service. n.d. Fisheries USA: the recreational fisheries policy of the U.S. Fish and Wildlife Service. Washington, D.C.

Virginia Department of Conservation and Recreation. The 2007 Virginia outdoors plan (SCORP). Richmond, Virginia.

Virginia Department of Environmental Quality. 2015. Commonwealth of Virginia State Water Resources Plan. Richmond, Virginia. October 2015.

Virginia State Water Control Board. 1986. Minimum instream flow study – final report. Annandale, Virginia. February 1986.

9.0 MAILING LIST

The list below is the Commission's official mailing list for the Niagara Project (FERC No. 2466). If you want to receive future mailings for the Niagara Project and are not included in the list below, please send your request by email to efiling@ferc.gov or by mail to: Secretary, Federal Energy Regulatory Commission, 888 First Street, N.E., Room 1A, Washington, DC 20426. All written and emailed requests to be added to the mailing list must clearly identify the following on the first page: Niagara Project No. 2466-034. You may use the same method if requesting removal from the mailing list below.

Register online at http://www.ferc.gov/esubscribenow.htm to be notified via email of new filings and issuances related to this or other pending projects. For assistance, please contact FERC Online Support at FERCOnlineSupport@ferc.gov or toll free at 1-866-208-3676, or for TTY, (202) 502-8659.

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APPENDIX A
NIAGARA PROJECT PROCESS PLAN AND SCHEDULE

Shaded milestones are unnecessary if there are no study disputes. If the due date falls on a weekend or holiday, the due date is the following business day. Early filings or issuances will not result in changes to these deadlines.

Responsible Party	Pre-Filing Milestone	Date	FERC Regulation
Appalachian	Issue Public Notice for NOI/PAD	1/28/2019	5.3(d)(2)
Appalachian	File NOI/PAD	1/28/2019	5.5, 5.6
FERC	Tribal Meetings	2/27/2019	5.7
FERC	Issue Notice of Commencement of Proceeding and Scoping Document 1	3/26/2019	5.8
FERC	Scoping Meetings and Project Site Visit	4/24/2019, 4/25/2019	5.8(b)(viii)
All Stakeholders	File Comments on PAD/Scoping Document 1 and Study Requests	5/25/2019	5.9
FERC	Issue Scoping Document 2 (if necessary)	7/9/2019	5.10
Appalachian	File Proposed Study Plan	7/9/2019	5.11(a)
All Stakeholders	Proposed Study Plan Meeting	8/8/2019	5.11(e)
All Stakeholders	File Comments on Proposed Study Plan	10/7/2019	5.12
Appalachian	File Revised Study Plan	11/6/2019	5.13(a)
All Stakeholders	File Comments on Revised Study Plan	11/21/2019	5.13(b)
FERC	Issue Director's Study Plan Determination	12/6/2019	5.13(c)
Mandatory Conditioning Agencies	File Any Study Disputes	12/26/2019	5.14(a)
Dispute Panel	Select Third Dispute Resolution Panel Member	1/10/2020	5.14(d)

Responsible Party	Pre-Filing Milestone	Date	FERC Regulation
Dispute Panel	Convene Dispute Resolution Panel	1/15/2020	5.14(d)(3)
Appalachian	File Comments on Study Disputes	1/20/2020	5.14(i)
Dispute Panel	Dispute Resolution Panel Technical Conference	1/25/2020	5.14(j)
Dispute Panel	Issue Dispute Resolution Panel Findings	2/14/2020	5.14(k)
FERC	Issue Director's Study Dispute Determination	3/5/2020	5.14(l)
Appalachian	First Study Season	Spring - Fall 2020	5.15(a)
Appalachian	File Initial Study Report	12/5/2020	5.15(c)(1)
All Stakeholders	Initial Study Report Meeting	12/20/2020	5.15(c)(2)
Appalachian	File Initial Study Report Meeting Summary	1/4/2021	5.15(c)(3)
All Stakeholders	File Disagreements/Requests to Amend Study Plan	2/3/2021	5.15(c)(4)
All Stakeholders	File Responses to Disagreements/Amendment Requests	3/5/2021	5.15(c)(5)
FERC	Issue Director's Determination on Disagreements/Amendments	4/4/2021	5.15(c)(6)
Appalachian	Second Study Season	Spring - Fall 2021	5.15(a)
Appalachian	File Preliminary Licensing Proposal (or Draft License Application)	10/1/2021	5.16(a)-(c)
All Stakeholders	File Comments on Preliminary Licensing Proposal (or Draft License Application)	12/30/2021	5.16(e)
Appalachian	File Updated Study Report	12/5/2021	5.15(f)
All Stakeholders	Updated Study Report Meeting	12/20/2021	5.15(f)

Responsible Party	Pre-Filing Milestone	Date	FERC Regulation
Appalachian	File Updated Study Report Meeting Summary	1/4/2022	5.15(f)
Appalachian	File Final License Application	2/28/2022	5.17
All Stakeholders	File Disagreements/Requests to Amend Study Plan	2/3/2022	5.15(f)
Appalachian	Issue Public Notice of Final License Application Filing	3/14/2022	5.17(d)(2)
All Stakeholders	File Responses to Disagreements/Amendment Requests	3/5/2022	5.15(f)
FERC	Issue Director's Determination on Disagreements/Amendments	4/4/2022	5.15(f)

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