FEDERAL ENERGY REGULATORY COMMISSION
Washington, DC 20426
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OFFICE OF ENERGY PROJECTS

Project No. P-2514-186 – Virginia
Byllesby-Buck Hydroelectric Project
Appalachian Power Company

Subject: Scoping Document 2 for the Byllesby-Buck Hydroelectric Project, P-2514-186

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 Byllesby-Buck Hydroelectric Project (FERC No. 2514) (Byllesby-Buck Project). The project consists of two developments, Byllesby and Buck, and is located on the New River in Carroll 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 Byllesby-Buck Project was described in Scoping Document 1 (SD1), issued March 8, 2019. We requested comments on SD1, conducted an environmental site review, and held scoping meetings on April 10 and 11, 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: **Byllesby-Buck Hydroelectric Project No. 2514-186**.

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 Byllesby-Buck 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

BYLLESBY-BUCK HYDROELECTRIC PROJECT

VIRGINIA

PROJECT NO. 2514-186

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

JUNE 2019

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SCOPING DOCUMENT 2

Byllesby-Buck Hydroelectric Project, No. 2514-186

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 7, 2019, Appalachian Power Company (Appalachian) filed a Pre-Application Document (PAD) and Notice of Intent to seek a new license for the Byllesby-Buck Hydroelectric Project, FERC Project No. 2514 (Byllesby-Buck Project or project).[2]

The Byllesby-Buck Project consists of two developments, Byllesby and Buck, and is located on the New River in Carroll County, Virginia. The average annual generation from 2012 to 2016 of the Byllesby Development was 36,906 megawatt-hours (MWh) and of the Buck Development was 30,874 MWh.

A detailed description of the project is provided in section 3.0. The location of the project is shown on figure 1. The Byllesby-Buck 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 Byllesby-Buck 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 Byllesby-Buck Project was issued on March 28, 1994, and expires on February 29, 2024.

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

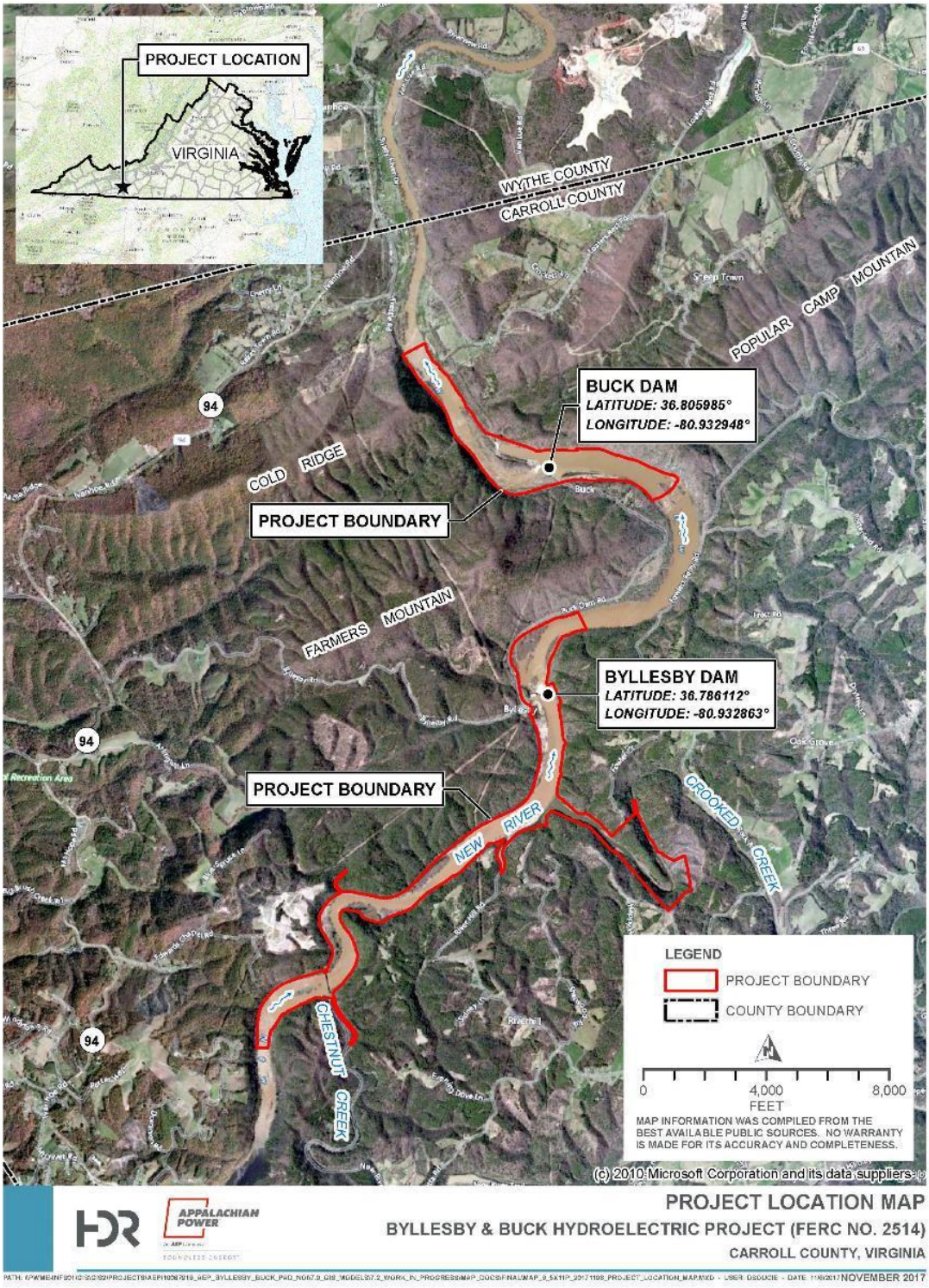

Figure 1. Location of the project. (Source: Appalachian).

2.0 SCOPING

This 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 8, 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 8, 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 Galax, Virginia on April 10 and 11, 2019, and an environmental site review was conducted on April 10, 2019, to identify potential resource issues associated with the Byllesby-Buck 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***
Don Orth, Virginia Tech	***March 15, 2019***
Bureau of Indian Affairs	***April 2, 2019***
Arlene Warren, Virginia Department of Health	***April 30, 2019***
National Park Service	***May 7, 2019***
U.S. Fish and Wildlife Service	***May 7, 2019***
Virginia Department of Game and Inland Fisheries	***May 7, 2019***
Virginia Department of Environmental Quality	***May 7, 2019***
Caitlin Carey, Virginia Tech	***May 8, 2019***
New River Conservancy	***May 8, 2019***
Virginia Department of Conservation and Recreation	***May 8, 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 Byllesby-Buck 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: Virginia Department of Game and Inland Fisheries (Virginia DGIF), U.S. Fish and Wildlife Service (FWS), and the New River Conservancy (NRC) state that a potentially lower (e.g., 1 foot) winter pool elevation (to minimize ice damage to project facilities) could result in bank erosion at the project in areas where there is a limited riparian buffer and could inhibit recreational access to the impoundments. Virginia DGIF also comments that lower winter pool elevations could impact waterfowl hunting. In addition, FWS states that lower winter pool elevations could affect wetlands and bog turtle habitat.

Response: In the PAD, Appalachian states that it is evaluating the feasibility of operating the developments with 1-foot lower reservoir levels during the winter months of December through March, which would reduce the risk of overtopping project structures when ice jams occur. No other changes in project operation are proposed. Should Appalachian formally propose to lower the impoundments during winter in its final license application, we would analyze the effects of the proposed measure on potentially affected resources in our Environmental Assessment (EA) for the project.

Project Boundary

Comment: Numerous commenters suggest that the project boundary should include the approximately 1.2-mile-long stretch of river between the two dams of the project, which is not currently enclosed in the existing project boundary. The commenters recommend including this stretch of river due to direct effects of project operation on multiple resources.

Response: The geographic scope of analysis for project effects on a given resource is not limited to the existing project boundary, which is an administrative area that includes all project works, lands, and facilities that are necessary for project operation and/or serve a project purpose. At this time, creating a single, continuous project boundary, encompassing the dams at both developments and the 1.2-mile-long stretch of the New River between those dams, would not affect any studies to be conducted or staff's analysis of the effects of project operation on environmental resources, which is not limited to the project boundary.

Cumulative Effects

Comment: In SD1, staff did not identify any resources that could be cumulatively affected by the continued operation and maintenance of the Byllesby-Buck Project in combination with other hydroelectric projects and activities in the New River Basin. FWS states that the project, in conjunction with other dams and hydropower projects on the New and Kanawha Rivers, contributes to cumulative effects on fish and freshwater mussel populations by: forming barriers to migration and dispersal, causing entrainment impacts, reducing riverine (riffle) habitats and increasing lacustrine habitats where sediments accumulate, causing fish stranding in bypassed reaches with insufficient minimum flows, reducing the transport of suitable spawning substrate, and increasing water temperatures.

Virginia DGIF recommends the following resources could be cumulatively affected: (1) sedimentation impacts to reservoir habitat; (2) downstream sediment transport due to project operation with multiple ecological and recreational effects; (3) temperature and other water quality parameters affected by the existence of the project; and (4) riverine habitat and biota altered by the project reservoirs and in the bypassed reaches.

Response: Neither FWS nor Virginia DGIF provide any evidence supporting how, or to what geographic extent, the continued operation and maintenance of the project would combine with effects from other hydroelectric projects and activities in the New River Basin to contribute to cumulative effects on environmental resources.

Therefore, at this time, we have no basis for including any resources in our cumulative effects analysis. Should data collected during the required studies demonstrate that project effects extend beyond the immediate vicinity of the project and interact with other projects and activities in the New River Basin in a manner that could elicit cumulative effects, the scope of our analyses will be re-evaluated at that time.

Geologic and Soil Resources

Comment: Several commenters state that sedimentation and sediment transport (including the potential re-mobilization of PCBs[4] due to project operation and maintenance dredging) have significant effects on habitats at the project and that such effects need to be assessed.

Response: We have added a bullet to section 4.2.1 of this document to indicate that our environmental analysis will evaluate the effects of continued project operation and maintenance (including localized maintenance dredging via the project's drag rake[5] and more infrequent impoundment-wide dredging after large storm events) on sedimentation in the project impoundments and sediment transport through each development, including the potential for the re-mobilization of PCBs.

Aquatic Resources

Comment: Virginia DGIF, FWS, and NRC state that, in addition to water temperature (already included in SD1), water quality issues need to include a consideration of the effects of project operation and maintenance on turbidity and chlorophyll a levels.

Response: While turbidity could be affected by project operation and maintenance (e.g., by releasing sediment collected by the drag rake through the project intakes), it is unclear, nor do the commenters specify, how chlorophyll a levels could be affected by project operation. Accordingly, we modified a bullet in section 4.2.2 of this document to indicate that our environmental analysis will include the effects of project

[4] PCBs, or polychlorinated biphenyls, are an industrial contaminant whose use was banned in 1979, but are still present as legacy contaminants in some aquatic systems, where they associate with, and are bound to, sediments.

[5] The trash rake systems at the project were upgraded in 1997 to include a drag rake that extends into the forebays and scrapes along the bottom of the impoundments to remove built-up sediments that are then passed downstream through the intakes.

operation and maintenance on turbidity levels, but did not add chlorophyll a, at this time, as a resource that will be considered in our environmental analysis.

Comment: Don Orth, FWS, Virginia DGIF, and Caitlin Carey comment that staff's analysis should include the effect of project operation on Eastern hellbender, New River crayfish, and freshwater mussels, including green floater and pistolgrip.

Response: Eastern hellbender were included in section 4.2.2 of SD1 as a species of special concern. We modified this bullet to also include the effects of project operation on freshwater mussels (including green floater and pistolgrip) and New River crayfish.

Comment: Virginia DGIF and NRC state the analysis of the existing 360-cubic foot per second (cfs) minimum flow for aquatic resources (referenced in SD1) needs to include an examination of how power generation flow fluctuations affect aquatic resources in terms of effects on fish and mussel spawning.

Response: In section 4.2.2 of SD1, we included a bullet indicating that our environmental analysis will consider the adequacy of the existing 360-cfs minimum flow at each development. Regarding potential flow fluctuations, Appalachian proposes to continue operating the project in a run-of-river mode, whereby outflow from the project approximates inflow. Therefore, flow fluctuations downstream of the tailraces associated with power generation that could affect fish and mussel spawning are not expected at the Byllesby-Buck Project due to the proposed run-of-river operation. Consequently, no changes have been made to this document.

<u>Terrestrial Resources</u>

Comment: During the scoping meetings, Virginia DGIF noted that the Wetland and Riparian Habitat Characterization study proposed in the PAD was not included in the list of proposed studies provided in SD1.

Response: The list of proposed studies in this document now includes the Wetland and Riparian Habitat Characterization study that was proposed in the PAD.

Comment: Don Orth, FWS, Virginia DGIF, and Caitlin Carey comment that an analysis of continued project operation and maintenance on riparian and wetland habitat needs to include consideration of emergent and submerged aquatic vegetation beds (e.g., hornleaf riverweed and water willow) and the importance of these beds to terrestrial and aquatic species.

Response: ***We have added emergent and submerged aquatic vegetation beds, including hornleaf riverweed and water willow, to the bulleted list of resources in section 4.2.3 as terrestrial resources that could be affected by project operation and maintenance.***

Threatened and Endangered Species

Comment: ***FWS and Virginia DGIF comment that the candy darter, which occurs in the upper New River watershed, was federally listed as endangered in November 2018 and is known to occur in Cripple Creek, a tributary that enters the New River approximately 5 river miles downstream from the Buck Development.***

Response: ***Due to the potential for this listed species to occur in the project area, we have added the candy darter to the bulleted list in section 4.2.4, of federally listed species that could be affected by project operation and maintenance.***

Comment: ***FWS states that the potential 1-foot winter drawdown at both developments could impact the federally listed threatened bog turtle (Glyptemus muhlenbergii), which is dependent on wetland habitat for all of its life stages.***

Response: ***We have added the bog turtle to the bulleted list in section 4.2.4, as a federally listed species that could be affected by project operation and maintenance.***

Recreation Resources

Comment: ***Numerous commenters state that project tailraces tend to be popular locations for fishing and that Appalachian does not provide access to such desirable fishing locations.***

Response: ***We have modified a bullet in section 4.2.5 to include evaluation of fishing opportunities in the project developments' tailraces.***

Comment: ***Virginia DGIF states the analysis of the existing 360-cfs minimum flow for aquatic resources needs to include an examination of how power generation flow fluctuations impact recreational use.***

Response: ***In section 4.2.5 of SD1, we included a bullet on the effects of project operation on recreation in the project area. Appalachian proposes to continue operating the project in a run-of-river mode, whereby outflow from the project approximates inflow. Therefore, flow fluctuations downstream of the tailraces associated with power generation that could affect recreation are not expected at the***

Byllesby-Buck Project due to the proposed run-of-river operation. Consequently, no changes have been made to this document.

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 Byllesby-Buck 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 Byllesby Development consists of: (1) a 64-foot-high, 528-foot-long concrete dam and main spillway section topped with four sections of 9-foot-high flashboards, five sections of 9-foot-high inflatable Obermeyer crest gates, and six bays of 10-foot-high Tainter gates; (2) an auxiliary spillway including six sections of 9-foot-high flashboards; (3) a 239-acre impoundment with a gross storage capacity of 2,000 acre-feet; (4) a powerhouse containing four generating units with a total authorized installed capacity of 21.6 megawatts (MW); and (5) appurtenant facilities.

The Buck Development consists of: (1) a 42-foot-high, 353-foot-long concrete dam; (2) a 1,005-foot-long, 19-foot-high spillway section topped with 20 sections of 9-foot-high flashboards, four sections of 9-foot-high inflatable Obermeyer crest gates, and six bays of 10-foot-high Tainter gates; (3) a 66-acre impoundment with a gross storage capacity of 661 acre-feet; (4) a powerhouse containing three generating units with a total authorized installed capacity of 8.5 MW; and (5) appurtenant facilities

Each development is undergoing modification, as approved by an order amending license issued by the Commission on May 18, 2017,[6] to replace several sections of existing wooden flashboards with inflatable Obermeyer crest gates. Once installed and operational, the available Obermeyer crest gates will serve to smooth project operation by reducing instances of inadvertent flow to the bypassed reaches and

[6] 159 FERC ¶ 62,187.

the frequency of maintenance drawdowns associated with wooden flashboard failure and replacement.

3.1.2 Existing Project Operations

The Byllesby-Buck Project operates in a run-of-river mode under all flow conditions. Because the Buck Development is only about 3 miles downstream from the Byllesby Development, the operation of the two developments is closely coordinated. Buck Development operation is dependent on flows through the Byllesby Development. Under normal operating conditions, Appalachian operates the project to use available flows for powerhouse generation, and maintains the elevation of the Byllesby impoundment between 2,078.2 feet and 2,079.2 feet[7] and the Buck impoundment between 2,002.4 feet and 2,003.4 feet. Under article 403 of the current license, Appalachian is also required to release a minimum flow of 360 cfs or inflow to the project, whichever is less, downstream of the project powerhouses.

When inflow to either development exceeds the maximum hydraulic capacity of the turbines (5,868 cfs for Byllesby and 3,540 cfs for Buck), the Tainter gates are opened to pass the excess flow. Gate openings are planned and based on monitoring of the upstream U.S. Geological Survey (USGS) gage at Galax (#03164000) and Byllesby and Buck forebay elevations. If inflows exceed the capacity of the Tainter gates, the inflatable Obermeyer crest gates are operated to pass additional flow, followed by manual tripping of the wooden flashboards, if required. The wooden flashboards must be subsequently re-installed during a period when the impoundment is drawn down to the spillway crest elevation. During flood-stage flows, all generating units at the powerhouse may need to be shut down due to the loss of operating head. The Byllesby auxiliary spillway is operated after release of all available inflatable crest gate and wooden flashboard sections, typically at flows in excess of 46,690 cfs.

Ramping rates are required under Article 406 of the current license for the protection of fish resources downstream of the Buck spillway. The gradual reduction of flow allows fish to progressively leave the bypassed reach, versus possible stranding at sudden flow discontinuation. Following periods of spill from the Buck spillway when a spillway gate has been opened 2 feet or more, Appalachian is required to discharge flows through a 2-foot-wide gate opening for at least 3 hours. Appalachian is then required to reduce the opening to 1 foot for at least an additional 3 hours, after which Appalachian may close the gate.

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

Tainter gate operation and electricity generation at both Byllesby and Buck is remotely controlled from Appalachian's 24-hour control center located in Columbus, Ohio. Operators are stationed at the control center 24 hours per day, 7 days per week. Plant personnel are present at the Byllesby-Buck Project during normal working hours (8 hours per day during weekday mornings and afternoons) to perform routine maintenance.

3.2 APPLICANT'S PROPOSAL

The proposed action is to continue the existing operation and maintenance of the Byllesby-Buck Project. The current license for the project expires on February 29, 2024.

3.2.1 Proposed Project Facilities and Operation

Appalachian is presently evaluating the feasibility and benefits of operating the developments with 1-foot-lower impoundment levels (i.e., still a 1-foot operating band, but with 1-foot lower normal maximum and minimum impoundment elevations) during the winter months (e.g., December through March). The purpose of the lower winter impoundment level would be to reduce the risk of overtopping project structures (and the resultant risks to the project, downstream areas, and personnel and public safety) due to ice jams on the New River, such as those that occurred at the project in January 2010. Should Appalachian propose this modification in its license application it is not expected to significantly affect project generation. No other changes to project operation or facilities are proposed at this time.

3.2.2 Proposed Environmental Measures

Appalachian proposes to continue the existing operation and maintenance of the Byllesby-Buck 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 Byllesby-Buck 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 elevation of the Byllesby impoundment between 2,078.2 feet and 2,079.2 feet and the elevation of the Buck impoundment between 2,002.4 feet and 2,003.4 feet (Article 401).

- Continue providing a minimum flow of 360 cfs, or inflow to the project, whichever is less, to the New River downstream of each powerhouse (Buck and Byllesby) to protect aquatic resources (Article 403).

- Continue implementing the existing ramping rate[8] for the Buck bypassed reach; whereby, following periods of spill when a spillway gate has been opened 2 feet or more, water will continue to be released into the bypassed reach through a 2-foot-gate opening for at least 3 hours, then the gate opening will be reduced to 1 foot for 3 hours before closing the gate.

Terrestrial Resources

- Continue to follow a Commission-approved Wildlife Management Plan that includes provisions to annually inspect undeveloped land within the project boundary for evidence of increased human disturbance, consult with Virginia Virginia DGIF about activities that affect these lands and notify Virginia DGIF of any unanticipated impacts within these lands, and monitor bank erosion (Article 408).

Threatened and Endangered Species

- There are no existing or proposed PM&E measures related to threatened and endangered species for the Byllesby-Buck Project. The potential need for PM&E measures will be evaluated during the relicensing process.

Recreation and Land Use

- Continue to follow a Commission-approved recreation plan and continue to provide project recreation access, monitor recreation use and demand,

[8] 70 FERC ¶ 62,130 (1995). Order Modifying and Approving Ramping Rate Assessment Plan.

consult with interested stakeholders on potential recreation enhancement measures, and update the recreation plan as needed (Article 411).

Aesthetic Resources

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

Cultural Resources

- Continue to follow a Commission-approved cultural resources management plan (CRMP) and to update the CRMP with the filing of its final license application. Appalachian does not anticipate any adverse effects to cultural resources (Article 409).

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 such as the potential 1-foot-lower impoundment levels during winter, 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 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 Byllesby-Buck 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.

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[9] 16 U.S.C. §§ 791(a)-825(r).

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 for the Byllesby-Buck Project, and preliminary staff analysis, we have not identified any resources that could be cumulatively affected by the proposed continued operation and maintenance of the Byllesby-Buck Project in combination with other hydroelectric projects and other activities in the New River Basin.

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 Byllesby-Buck 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.

4.2.1 Geologic and Soils Resources

- Effects of continued project operation and maintenance on shoreline erosion in the impoundments at each development (Buck and Byllesby).

- ***Effects of continued project operation and maintenance (including localized maintenance dredging via the project's drag rakes and more infrequent impoundment-wide dredging after large storm events) on sedimentation in the project impoundments and sediment transport through each development, including the potential for the re-mobilization of PCBs.***

4.2.2 Aquatic Resources

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

- Adequacy of the existing 360-cfs minimum flow for aquatic resources, including resident fish species, downstream of each development (Buck and Byllesby).

- Whether there is a need for a minimum flow (beyond leakage) in the Buck bypassed reach.

- Effects of continued project maintenance (periodic impoundment drawdowns to replace flashboards and periodic dredging to remove sediments from the impoundments) on aquatic resources, particularly freshwater mussels and fish spawning habitat in the impoundments of each development.

- Effects of continued project operation on aquatic resources, including entrainment and impingement mortality of resident fishes, such as walleye, smallmouth bass, and spotted bass at each development.

- Effects of continued project operation and maintenance on species of special concern such as Eastern hellbender, ***freshwater mussels (including green floater and pistolgrip)***, and ***New River crayfish***.

- Adequacy of the existing ramping rate to prevent fish stranding in the Buck bypassed reach.

4.2.3 Terrestrial Resources

- Effects of continued project operation ***and maintenance***, on riparian and wetland habitat, ***emergent and submerged aquatic vegetation beds (including hornleaf riverweed and water willow),*** and associated wildlife.

- Effects of continued project operation and maintenance on upland wildlife 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, ***bog turtle, candy darter,*** and Virginia spiraea.

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.

- Adequacy of existing recreational facilities and public access to the project***, such as fishing in the project developments' tailraces,*** 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.

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 both the Byllesby and Buck developments. Appalachian anticipates that this assessment will consist of a survey of the project impoundments 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 single season water quality study by continuously monitoring (at 15-minute

Resource Area and Study Name	Proposed Study
	intervals) water temperature, DO, and water levels from June through October at three locations: (1) upstream of the Byllesby impoundment, (2) downstream of the Byllesby powerhouse, and (3) downstream of the Buck powerhouse. In addition, once per month from June through October, depth profiles of water temperature, DO, pH, and specific conductance will be collected at three locations within each impoundment (Buck and Byllesby). This survey would be used to gather baseline water quality data to determine consistency with applicable water quality standards and designated uses.
Bypass Reach Aquatic Habitat and Flow Assessment	Appalachian proposes to perform a desktop aquatic habitat assessment of each project bypassed reach, utilizing high resolution aerial imagery and/or Light Detection and Ranging (LiDAR) data to: (1) delineate the reach into pool, riffle, run, and shoal habitats; (2) characterize dominant substrate types; and (3) identify instream habitat types (e.g., littoral zones, hard structure, woody debris, vegetative cover). Appalachian proposes to supplement the desktop habitat assessment described above, with limited field reconnaissance to confirm site conditions. In addition, Appalachian would collect water level logger and discharge measurements during controlled test gate openings at the spillway to develop a stage-discharge rating curve for a select location.

Resource Area and Study Name	Proposed Study
Inflatable Obermeyer Crest Gate Operational Effectiveness Evaluation	Appalachian proposes to conduct a study to confirm that operation of the project dams with the inflatable Obermeyer crest gates has the desired effects of minimizing impoundment fluctuations and instances of inadvertent spill to the bypassed reaches (especially at the Buck Development). Appalachian proposes to conduct this evaluation utilizing an operations model that has been developed for the project. Using this model, Appalachian will be able to simulate project operation with the Obermeyer crest gates installed, including instances of spills to the bypassed reach(es), impoundment level changes, and powerhouse generation for a hypothetical period of time. The level loggers to be installed in the bypassed reach(es) as part of the Bypass Reach Aquatic Habitat and Flow Assessment described above will serve to collect data about water level changes due to spillway operations. These data can be used to validate the operations model.
Terrestrial Resources	
Wetland and Riparian Habitat Characterization	***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 mapped will be classified using the FWS's wetland classification system, unless otherwise recommended by resource agencies. During the wetland survey, investigators will identify the dominant***

Resource Area and Study Name	Proposed Study
	plants present within a wetland habitat to the species level. During the field habitat surveys, investigators will examine the soil matrix down to a depth of approximately 18 inches, if possible, and analyze soil 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.

6.0 EA PREPARATION SCHEDULE

At this time, we anticipate the need to prepare an EA. The EA will be sent to all persons and entities on the Commission's service and mailing lists for the Byllesby-Buck 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 any 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 Byllesby-Buck Project, including those for developing the license application, is attached as Appendix A to this SD1.

7.0 PROPOSED EA OUTLINE

The preliminary outline for the Byllesby-Buck Project EA is as follows:

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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. The staff has preliminarily identified and reviewed the plans listed below that may be relevant to the Byllesby-Buck 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 Byllesby-Buck Project.

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

Ohio River Basin Commission. 1977. Kanawha River Basin comprehensive coordinated joint plan. Cincinnati, Ohio. July 1977.

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.

U.S. Forest Service. 1978. Mount Rogers National Recreation Area final management plan. Department of Agriculture. Roanoke, Virginia.

U.S. Forest Service. 2004. Revised Land and Resource Management Plan for the Jefferson National Forest. Management Bulletin R8-MB 115A. Department of Agriculture. Roanoke, Virginia.

U.S. Forest Service. 1993. George Washington National Forest revised land and resource management plan. Department of Agriculture, Harrisonburg, Virginia.

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. Annadale, Virginia. February 1986.

9.0 MAILING LIST

The list below is the Commission's official mailing list for the Byllesby-Buck Project (FERC No. 2514). If you want to receive future mailings for the Byllesby-Buck 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: Byllesby-Buck Project No. 2514-186. 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
BYLLESBY-BUCK 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	1/7/2019	5.3(d)(2)
Appalachian	File NOI/PAD	1/7/2019	5.5, 5.6
FERC	Tribal Meetings	2/6/2019	5.7
FERC	Issue Notice of Commencement of Proceeding and Scoping Document 1	3/8/2019	5.8
FERC	Scoping Meetings and Project Site Visit	4/10/2019, 4/11/2019	5.8(b)(viii)
All Stakeholders	File Comments on PAD/Scoping Document 1 and Study Requests	5/7/2019	5.9
FERC	Issue Scoping Document 2 (if necessary)	6/21/2019	5.10
Appalachian	File Proposed Study Plan	6/21/2019	5.11(a)
All Stakeholders	Proposed Study Plan Meeting	7/21/2019	5.11(e)
All Stakeholders	File Comments on Proposed Study Plan	9/19/2019	5.12
Appalachian	File Revised Study Plan	10/19/2019	5.13(a)
All Stakeholders	File Comments on Revised Study Plan	11/3/2019	5.13(b)
FERC	Issue Director's Study Plan Determination	11/18/2019	5.13(c)
Mandatory Conditioning Agencies	File Any Study Disputes	12/8/2019	5.14(a)
Dispute Panel	Select Third Dispute Resolution Panel Member	12/23/2019	5.14(d)

Responsible Party	Pre-Filing Milestone	Date	FERC Regulation
Dispute Panel	Convene Dispute Resolution Panel	12/28/2019	5.14(d)(3)
Appalachian	File Comments on Study Disputes	1/2/2020	5.14(i)
Dispute Panel	Dispute Resolution Panel Technical Conference	1/7/2020	5.14(j)
Dispute Panel	Issue Dispute Resolution Panel Findings	1/27/2020	5.14(k)
FERC	Issue Director's Study Dispute Determination	2/16/2020	5.14(l)
Appalachian	First Study Season	Spring - Fall 2020	5.15(a)
Appalachian	File Initial Study Report	11/17/2020	5.15(c)(1)
All Stakeholders	Initial Study Report Meeting	12/2/2020	5.15(c)(2)
Appalachian	File Initial Study Report Meeting Summary	12/17/2020	5.15(c)(3)
All Stakeholders	File Disagreements/Requests to Amend Study Plan	1/16/2021	5.15(c)(4)
All Stakeholders	File Responses to Disagreements/Amendment Requests	2/15/2021	5.15(c)(5)
FERC	Issue Director's Determination on Disagreements/Amendments	3/17/2021	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	11/17/2021	5.15(f)
All Stakeholders	Updated Study Report Meeting	12/2/2021	5.15(f)

Responsible Party	Pre-Filing Milestone	Date	FERC Regulation
Appalachian	File Updated Study Report Meeting Summary	12/17/2021	5.15(f)
Appalachian	File Final License Application	2/28/2022	5.17
All Stakeholders	File Disagreements/Requests to Amend Study Plan	1/16/2022	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	2/15/2022	5.15(f)
FERC	Issue Director's Determination on Disagreements/Amendments	3/17/2022	5.15(f)