

FEDERAL ENERGY REGULATORY COMMISSION

Washington, DC 20426

May 17, 2011

OFFICE OF ENERGY PROJECTS

Project No. 2503-147 – South Carolina
and North Carolina
Keowee-Toxaway Hydroelectric Project
Duke Energy Carolinas, LLC

Subject: Scoping Document 1 for Keowee-Toxaway Hydroelectric Project

To the Party Addressed:

The Federal Energy Regulatory Commission (Commission) is reviewing the Pre-Application Document submitted by Duke Energy Carolinas, LLC (Duke) for relicensing the Keowee-Toxaway Hydroelectric Project (Keowee-Toxaway Project) (FERC No. 2503). The Keowee-Toxaway Project is located on the Toxaway, Keowee, and Little Rivers in Oconee County and Pickens County, South Carolina and Transylvania County, North Carolina. The Keowee-Toxaway Project occupies no federal lands.

Pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended, Commission staff intends to prepare an environmental assessment (EA), which the Commission will use 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 the EA is thorough and balanced.

We invite your participation in the scoping process and are circulating the enclosed Scoping Document 1 (SD1) to provide you with information on the Keowee-Toxaway Project. We solicit your comments and suggestions on the SD1, which contains our preliminary list of issues and alternatives to be addressed in the EA. We are also requesting that you identify any studies that would help provide a framework for collecting pertinent information on the resource areas under consideration necessary for the Commission to prepare the EA for the project.

We will hold two scoping meetings for the Keowee-Toxaway Project to solicit your oral and written comments on SD1 and the scope of the EA. A daytime meeting will be held at 1:00 p.m. on June 15, 2011, at the Seneca High School Auditorium, 100 Bobcat Ridge, Seneca, South Carolina, 29678. An evening meeting will be held at 6:00

p.m. on June 15, 2011, at the same location. We also will visit the project site on June 14 and 15, 2011, starting at 1:00 p.m. on June 14, 2011, and 8:00 a.m. on June 15, 2011.

We invite all interested agencies, Indian tribes, non-governmental organizations, and individuals to attend one or all of these meetings. Further information about these meetings and the environmental site review is available in the enclosed SD1.

SD1 is being distributed to all entities listed on the Commission's official mailing list for this project (see section 9.0). In the case of SD1 only, we are also mailing the document to those on Duke's mailing list who do not appear on the Commission's mailing list. If you wish to be added to or removed from the Commission's official mailing list, please send your request by mail to: Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission, 888 First Street, N.E., Room 1A, Washington, D.C. 20426. All written 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: **Keowee-Toxaway Hydroelectric Project No. 2503-147**.

You may also register online at <http://www.ferc.gov/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.

Please review SD1 and, if you wish to provide comments, follow the instructions in section 6.0. If you have any questions about the scoping process or the development of the EA for this project, please contact Stephen Bowler at (202) 502-6861, or stephen.bowler@ferc.gov. Additional information about the Commission's licensing process and the Keowee-Toxaway Project may be obtained from the Commission's website, www.ferc.gov, or Duke's relicensing website, <http://www.duke-energy.com/keowee-toxaway-relicensing/project-relicensing.asp>.

Enclosure: Scoping Document 1

cc: Mailing List
Public Files

SCOPING DOCUMENT 1
KOEWEE-TOXAWAY HYDROELECTRIC PROJECT

SOUTH CAROLINA
NORTH CAROLINA

PROJECT NO. 2503-147

Federal Energy Regulatory Commission
Office of Energy Projects
Division of Hydropower Licensing
Washington, D.C.

May 2011

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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 March 11, 2011, Duke Energy Carolinas, LLC (Duke) filed a Pre-Application Document (PAD) and Notice of Intent with the Commission for a new license for Keowee-Toxaway Hydroelectric Project (Keowee-Toxaway Project), FERC Project No. 2503.² The Keowee-Toxaway Project is located on a set of headwaters tributaries to the Savannah River, including the Toxaway, Keowee, and Little Rivers in Oconee County and Pickens County, South Carolina and Transylvania County, North Carolina. A small portion of Jocassee Development is in North Carolina. The project does not occupy any federal lands.

The Keowee-Toxaway Project consists of two developments: the 175.5-megawatt (MW) Keowee Development and the 710-MW Jocassee Development. The Keowee-Toxaway Project interacts directly with several adjacent energy and water uses. Lake Keowee serves as the cooling water source for Duke's existing 2,538-MW Oconee Nuclear Station. Immediately below the project are the U.S. Army Corps of Engineers' (Corps) Hartwell Lake and Thurmond Lake, both located on the Savannah River. Above the project, Duke's existing 1,065-MW Bad Creek Hydroelectric Project (P-2740) uses Lake Jocassee as the water source for pumped storage operations. Duke has agreements with two water withdrawers, the City of Seneca, South Carolina and the Greenville, South Carolina Water System.

The National Environmental Policy Act (NEPA) of 1969³, the Commission's regulations, and other applicable laws require that we independently evaluate the environmental effects of relicensing the Keowee-Toxaway Project as proposed, and also consider reasonable alternatives to the 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 project-specific and cumulative effects, if any, of

¹ 16 U.S.C. § 791(a)-825(r) (2006).

² The current license for the Keowee-Toxaway Project was issued with an effective date of September 1, 1966, for a term of 50 years and expires on August 31, 2016. *See* 36 FPC 675 (1966).

³ National Environmental Policy Act of 1969, as amended (Pub. L. 91-190. 42 U.S.C. § 4321-4347, January 1, 1970, as amended by Pub. L. 94-52, July 3, 1975, Pub. L. 94-83, August 9, 1975, and Pub. L. 97-258, § 4(b), Sept. 13, 1982).

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 a draft and final 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.

2.0 SCOPING

This Scoping Document 1 (SD1) 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. Pursuant to NEPA, the process should be conducted early in the planning stage of the project. The purposes of scoping 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 issues related to the proposed action;
- 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 resource issues, 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.

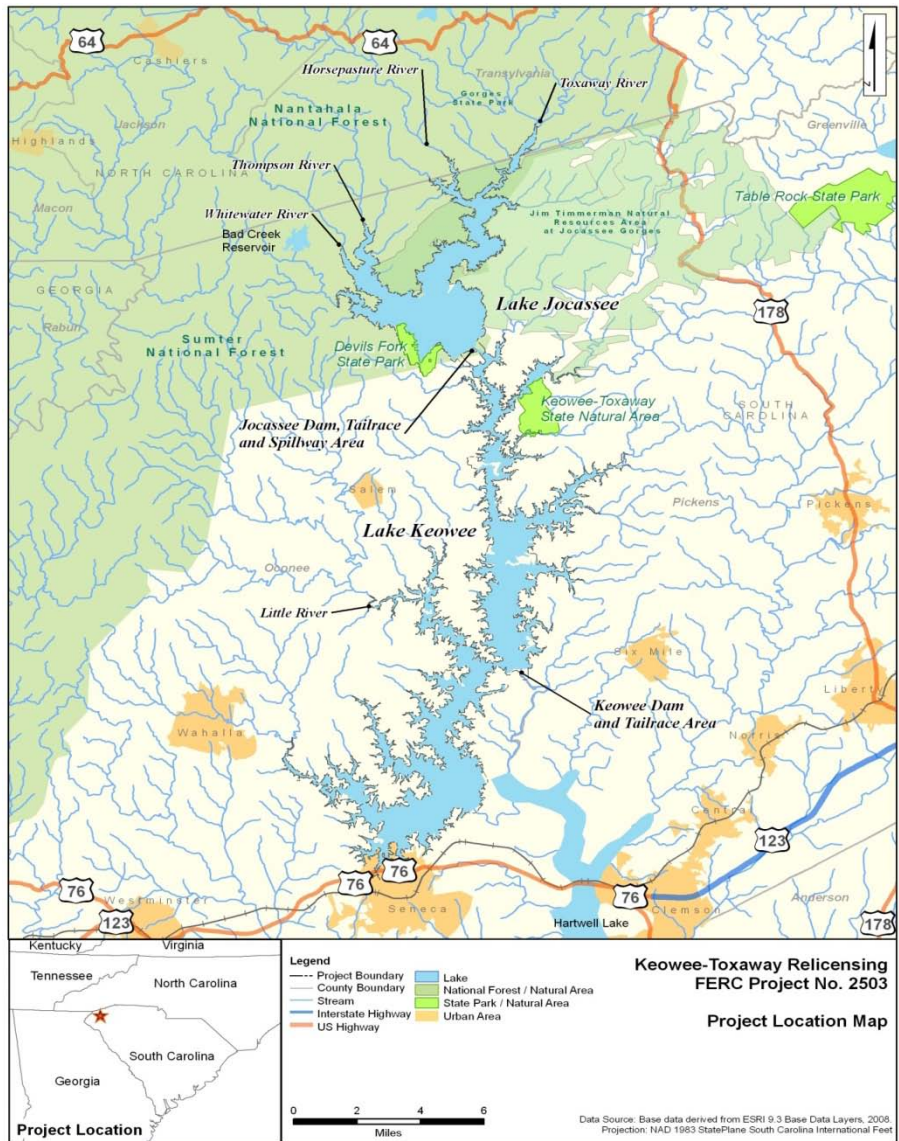


Figure 1. Location of the Keowee-Toxaway Project (Source: PAD).

2.2 COMMENTS, SCOPING MEETINGS, AND ENVIRONMENTAL SITE REVIEW

During preparation of the EA, there will be several opportunities for the resource agencies, Indian tribes, NGOs, and the public to provide input. These opportunities occur:

- during the scoping process and study plan meetings when we solicit oral and written comments regarding the scope of issues and analysis to be addressed;
- in response to the Commission's notice that the project is ready for environmental analysis; and
- after issuance of the draft EA when we solicit written comments on the draft EA.

In addition to written comments solicited by this SD1, we will provide an opportunity for oral testimony at two public scoping meetings that we will conduct and an environmental site review in the vicinity of the project. We invite all interested agencies, Indian tribes, NGOs, and individuals to attend one, or both, of the meetings to assist us in identifying the scope of environmental issues that should be analyzed in the EA. All interested parties are also invited to participate in the environmental site review. The times and locations of the meetings and environmental site review are as follows:

Daytime Scoping Meeting

Date and Time: Wednesday, June 15, 2011, 1:00 p.m. (EDT)
Location: Seneca High School Auditorium
100 Bobcat Ridge
Seneca, SC 29378
Phone Number: (864) 886-4460

Evening Scoping Meeting

Date and Time: Wednesday, June 15, 2011, 6:00 p.m. (EDT)
Location: Seneca High School Auditorium
100 Bobcat Ridge
Seneca, SC 29678
Phone Number: (864) 886-4460

Environmental Site Review Day 1, Jocassee Pumped Storage Development

Date and Time: Tuesday, June 14, 2011, 1:00 p.m. (EDT)
Location: Jocassee Pumped Storage Station
799 Jocassee Lake Road
Salem, SC 29676
Contact: ktrelicensing@duke-energy.com

Environmental Site Review Day 2, Keowee Hydroelectric Development

Date and Time: Wednesday, June 15, 2011, 8:00 a.m. (EDT)
Location: Oconee Nuclear Station⁴
155 E Pickens Hwy
Seneca, SC 29672-0713
Contact: ktrelicensing@duke-energy.com

To register for the environmental review, email ktrelicensing@duke-energy.com by May 20, 2011. For more details, please visit Duke's web site at <http://www.duke-energy.com/keowee-toxaway-relicensing/jocassee-keowee-tours.asp>.

The scoping meetings will be recorded by a court reporter, and all statements (verbal and written) will become part of the Commission's public record for the project. Before each meeting, all individuals who attend, especially those who intend to make statements, will be asked to sign in. Those individuals who speak at a scoping meeting will be asked to clearly identify themselves for the record. Interested parties who choose not to speak or who are unable to attend the scoping meetings may provide written comments to the Commission, as described in section 6.0. These meetings will be posted on the Commission's calendar located on the internet at www.ferc.gov/EventCalendar/EventsList.aspx, along with other related information.

Meeting participants should come prepared to discuss their issues and/or concerns as they pertain to the relicensing of the Keowee-Toxaway Project. It is advised that participants review the PAD in preparation for the scoping meetings. Copies of the PAD are available for review at the Commission in the Public Reference Room or may be viewed on the Commission's website (www.ferc.gov), using the "eLibrary" link. Enter the docket number, P-2503, to access the documents. For assistance, contact FERC Online Support at FERCONlineSupport@ferc.gov, or toll free at 1-866-208-3676, or for

⁴ Participants on the Keowee Hydro Station tour must provide appropriate photo identification and complete a Nuclear Regulatory Commission registration process prior to admittance. No photography will be allowed inside Keowee Hydro.

TTY, (202) 502-8659. A copy of the PAD is also available at the Seneca Public Library, 300 E. South Second Street, Seneca, SC 29678, 864-882-4855, and several other venues. The PAD can also be viewed on Duke's website, <http://www.duke-energy.com/keowee-toxaway-relicensing/jocassee-keowee-tours.asp>.

Following the scoping meetings and comment period, all issues raised will be reviewed and decisions made as to the level of analysis needed in the EA. If our preliminary analysis indicates that any issues presented in SD1 have little potential for causing significant effects, the issue(s) will be identified and the reasons for not providing a more detailed analysis will be given in the EA.

If we receive no substantive comments on SD1, then we will not prepare a Scoping Document 2 (SD2). Otherwise, we will revise SD1 and issue SD2 to address comments received during the comment period. The SD2 will be issued for informational purposes only; no response will be required.

3.0 PROPOSED ACTION AND ALTERNATIVES

In accordance with NEPA, the environmental analysis will consider the following alternatives, as appropriate: (1) the no-action alternative; (2) Duke's proposed action; and (3) Commission staff's alternative.

3.1 NO-ACTION ALTERNATIVE

Under the no-action alternative, the Keowee-Toxaway Project would continue to operate as required by the current project license. Energy production would continue and no new environmental protection, mitigation, or enhancement (PM&E) measures would be implemented. We use this alternative to establish baseline environmental and economic conditions for comparison with other alternatives.

3.1.1 Existing Project Facilities

Jocassee Development

The Jocassee Development includes: a 385-foot-tall, 1,800-foot-long main earthfill dam with top elevation at 1,125 ft above mean sea level (msl); two circular intake structures passing water to two water conveyance tunnels leading to four turbines; two saddle dikes (825 feet and 500 feet in length) to contain the reservoir pool; a partially-open powerhouse just downstream of the dam; four reversible pump-turbine units with wicket gates; a 50-foot wide, concrete, ogee-type spillway with 2 Taintor gates; and a 230-kilovolt (kV) transmission system.

The original license was issued for a generating capacity of 612 MW at the Jocassee Development and a hydraulic capacity of 31,300 cubic feet per second (cfs). Runners were replaced in units three and four in 2006 and 2007 as part of a license amendment (August 24, 2006) that allowed an increase in the installed capacity to 661 MW and hydraulic capacity to 33,900 cfs. Under another license amendment (December 1, 2010), similar work is occurring on units one and two, increasing the approved generating capacity at Jocassee to 710 MW and hydraulic capacity to 36,200 cfs.

Keowee Development

The Keowee Development includes: a 165-foot-high, 3,500-foot-long earthfill dam impounding the Keowee River, and a 165-foot-high, 1,800-foot-long earthfill dam impounding the Little River (in the same reservoir pool, but three miles to the South); four saddle dikes to contain the pool; an intake dike at the Oconee Nuclear Station; a concrete power house at the base of Keowee dam; a concrete intake structure leading to two penstocks; two Francis-type, mixed flow turbine-generator units controlled by wicket gates; a 176-foot wide, concrete, ogee-type spillway with 4 Taintor gates; a 150-foot by 500-foot concrete tailrace; and a 230-kV transmission system. The installed capacity is 78.75 MW and the hydraulic capacity is 24,920 cfs.

3.1.2 Existing Project Operations

Jocassee Development

The Jocassee Development is operated as a pumped-storage project, with the pump-turbines used for generating power during peak demand periods (typically during the day), and for pumping water back through the tunnels to Lake Jocassee (typically during the night). Lake Jocassee is licensed to operate within a range of a normal high level of 1,110.0 ft msl to a low level of 1,080 ft msl. The Jocassee Development typically is operated within a range of approximately 1,109.5 ft msl and 1,100 ft msl when not in drought conditions. A daily range of four feet or more in Lake Jocassee level is common during high-demand periods. The gross storage is 1,206,798 acre-feet and usable storage is 225,387 acre-feet. The spillway capacity is 20,000 cfs. The pumps can deliver 25,000 cfs per hour.

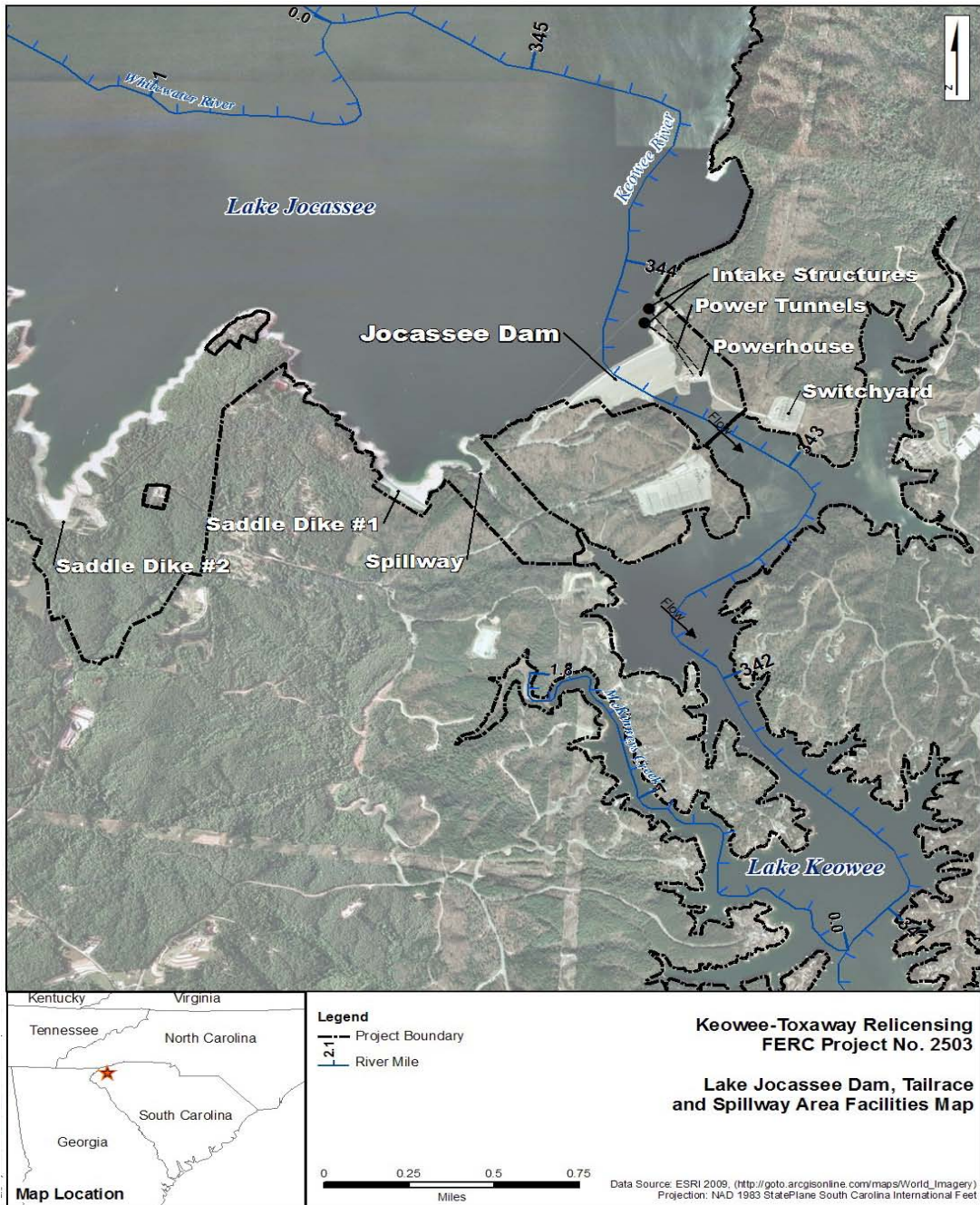


Figure 2. Project facilities for the Jocassee pumped storage portion of the Keowee-Toxaway Project (Source: PAD).

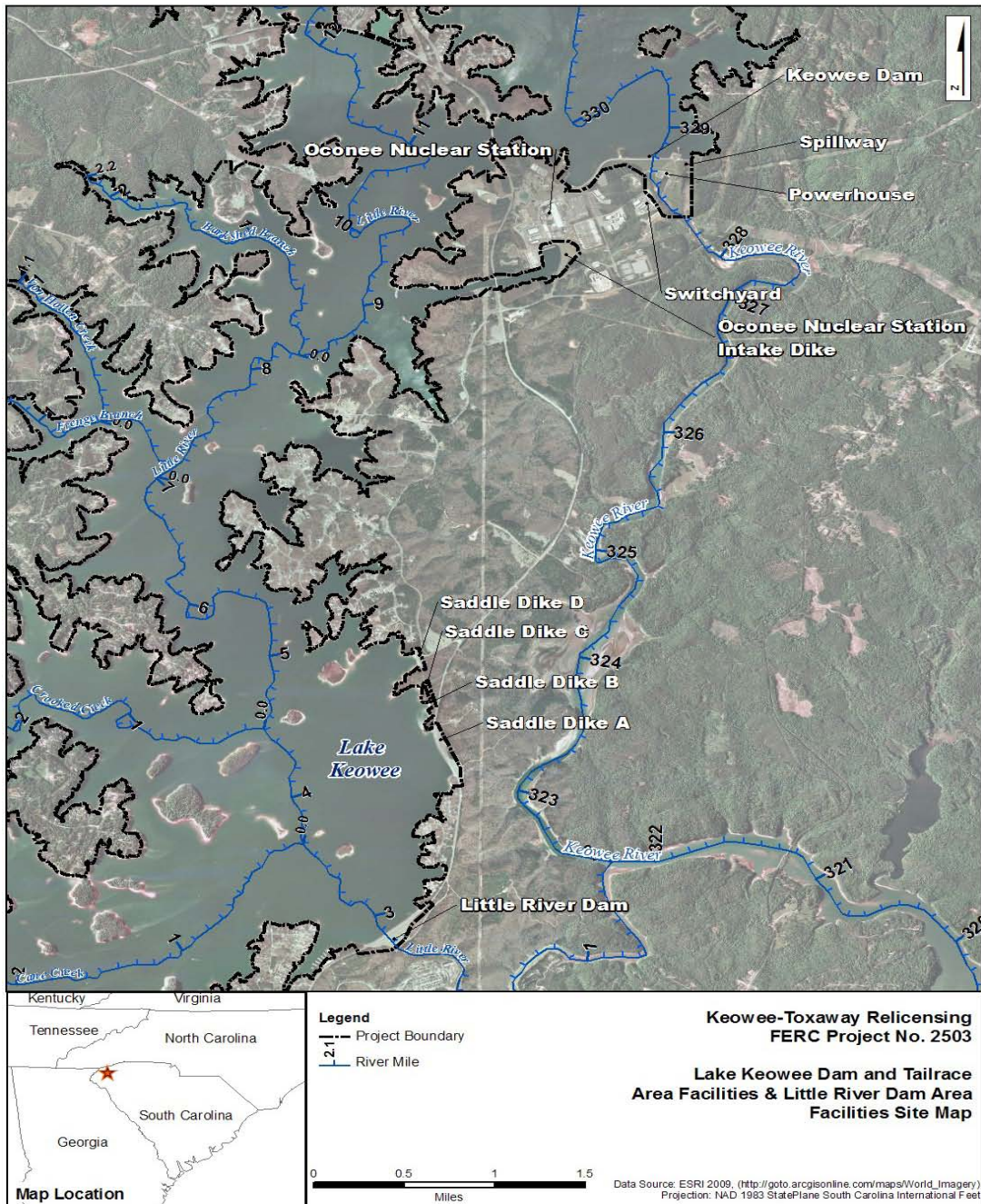


Figure 3 Project facilities for the Keowee hydropower plant portion of the Keowee-Toxaway Project (Source: PAD).

Keowee Development

Energy generated from the Keowee Development is used to meet Duke's system electric demands and to provide standby emergency power for the 2,538-MW Oconee Nuclear Station. Lake Keowee provides cooling water to the Oconee Nuclear Station, and municipal water to the city of Seneca and the Greenville Water System. Lake Keowee is licensed to operate within a range from a normal high level of 800 ft msl to a normal low level of 775 ft msl. However, based on Nuclear Regulatory Commission (NRC) requirements for the Oconee Nuclear Station and other agreements and business considerations, the Keowee Development typically is operated within a range of approximately 799.5 and 794.6 ft msl. A daily fluctuation of 2 feet or more in Lake Keowee is common during high-demand periods. Gross storage is 869,338 acre-feet and usable storage is 90,319 acre-feet.

Operation of the project is also subject to provisions of a 1968 Operating Agreement (1968 Agreement) between Duke, the Corps, and the Southwestern Power Administration when certain water storage triggers are reached downstream in the Corps reservoirs at the Hartwell and J. Strom Thurmond projects. The circumstances surrounding the 1968 Agreement have changed substantially for Duke (the Oconee Nuclear Station and Bad Creek Hydroelectric Project were constructed), and the Corps (the Richard B. Russell Project was constructed), thus this agreement is currently under review. Duke is undertaking its review of the 1968 Agreement separate from the relicensing process, but it could lead to proposed changes to project lake levels and releases, particularly under low flow conditions.

3.2 APPLICANT'S PROPOSAL

Duke prefers to defer proposing changes to existing operations until later in the relicensing process when operation studies are completed, and in the review of the 1968 Agreement and related issues. Duke proposes no new development or changes in project operation at this time. The current license for the project expires on August 31, 2016.

3.2.1 Proposed Project Facilities and Operations

No new or upgraded facilities, structural changes, or operational changes to the Keowee-Toxaway Project are proposed at this time.

3.2.2 Proposed Environmental Measures

Based on information in the PAD and preliminary staff analysis, we are proposing to address aesthetic and socioeconomic issues as part of recreation and land use and

geologic and soil resources, rather than as stand-alone topics. Duke proposes the following PM&E measures.

Geologic and Soil Resources

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

Aquatic Resources

Existing Measures

Duke has implemented the following PM&E measures for aquatic resources during the current license term:

Duke, in cooperation with South Carolina DNR, used chemical control methods to treat about 7.4 acres of *Hydrilla* infestation in the Cane Creek arm of Lake Keowee. In addition, Duke manually removed small shallow beds of *Hydrilla* when they were observed. Annual surveys for *Hydrilla* continue at Lake Keowee, but no additional infestations have been observed since 2002.

Potential Measures

There are no specific proposed PM&E measures related to aquatic resources for the Keowee-Toxaway Project. The potential need for PM&E measures will be evaluated during the relicensing process.

Terrestrial Resources

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

Threatened and Endangered Species

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

Recreation and Land Use

Existing Measures

Duke proposes to continue to operate and maintain the existing project recreation facilities under the current license and make improvements to the project recreation facilities as approved in its Recreation Management Plan.⁵

Potential Measures

There are no proposed PM&E measures related to recreation and land use for the relicensing of the Keowee-Toxaway Project. The potential need for additional PM&E measures would be evaluated during the relicensing process.

Cultural Resources

Existing Measures

There are no existing PM&E measures applied to properties within the proposed Keowee-Toxaway Project area of potential effects (APE).

Potential Measures

Develop and implement a Historic Properties Management Plan (HPMP) to protect and manage National Register of Historic Places (National Register) eligible cultural resources within the project's APE.

3.3 ALTERNATIVES TO THE PROPOSED ACTION

Commission staff will consider and assess all alternative recommendations for operational or facility modifications, as well as additional PM&E measures identified by the Commission staff, resource agencies, Indian tribes, NGOs, and the public. To the extent that any modifications would reduce the power produced by the project, we will evaluate costs and contributions to airborne pollution related to generation of replacement power by fossil fuel stations.

⁵ 132 FERC ¶ 62,045 (2010).

3.4 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY

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

3.4.1 Federal Government Takeover

In accordance with section 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.⁶ We do not consider federal takeover to be a reasonable alternative in this case. 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.

3.4.2 Non-power License

A non-power license is a temporary license the Commission would issue 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 Keowee-Toxaway 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.

3.4.3 Project Decommissioning

Decommissioning of the project could be accomplished with or without removal of some, or all, project facilities, including the dam(s). 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.

⁶ 16 U.S.C. §§ 791(a)-825(r) (2006).

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 preliminary staff analysis, we have identified the following resources that may be cumulatively affected by the proposed operation of the project: aquatic resources (including water quality and fishery resources) and terrestrial resources.

4.1.2 Geographic Scope

The 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 hydropower and non-hydropower activities within the Jocassee/Keowee watershed. Because the proposed action can affect the resources differently, the geographic scope for each resource may vary.

At this time, we identify the Jocassee/Keowee contributing watersheds, including the basins of the tributaries to Lake Keowee (Keowee and Little River and smaller streams) and the tributaries to Lake Jocassee (Whitewater Thompson, Horsepasture, and Toxaway Rivers, Bad Creek, and other streams) as our upstream geographic scope of analysis for aquatic resources. The land use in the contributing watershed influences the lake levels, water quality, and aquatic habitat of Lake Keowee and Lake Jocassee. In addition, we have tentatively identified the downstream geographic scope of analysis as extending to the outflow of Lake Thurmond. The operations of Lake Keowee and Lake

Jocassee influence lake levels, water quality, releases, and aquatic habitat in Lake Hartwell and Lake Thurmond. Additionally, the Lake Keowee and Lake Jocassee tributaries and Lake Hartwell are connected biologically through direct movement of fish and other organisms from the unimpounded Jocassee/Keowee tributaries and from the movement of fish, plankton, etc. through the Keowee and Little River dams.

At this time, we identify the Jocassee/Keowee watershed as our geographic scope of analysis for terrestrial resources. Regulation of flows by the project and upstream dams causes daily and seasonal changes in surface water fluctuations that may have led to shoreline erosion, spread of invasive species, and alteration of riparian and wetland habitats. Project facilities and operations; transmission line right-of-way maintenance; agricultural activities; roads; and residential, commercial, and industrial development have collectively contributed to the loss and alteration of wildlife habitat. Many of these non-project developments may have not occurred within the project boundary, but are close enough to have an effect on resources within the project area. Upstream and upslope development and land clearing in combination with project operations may contribute to establishment and spread of invasive species throughout the Jocassee/Keowee watershed. Road construction, vehicular traffic, and foot traffic associated with recreational pursuits may also contribute to the degradation and loss of sensitive habitats and displacement of wildlife.

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 aquatic and terrestrial resources. Based on the term of the proposed license, the temporal scope will look 30 to 50 years into the future, concentrating on the effect on aquatic and terrestrial resources from reasonably foreseeable future 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 Keowee-Toxaway Project. This list is not intended to be exhaustive or final, but contains those issues raised to date that could have substantial effects. 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 project operation and project-related recreation on shoreline erosion.*

4.2.2 Aquatic Resources

- The effects of project operations on dissolved oxygen (DO) and temperature dynamics in Lake Jocassee and Lake Keowee relative to trout habitat needs.
- Effects of project operation on lake levels, and releases downstream, particularly during low flow periods. Evaluation of associated effects on operation of the Oconee Nuclear Station, the Bad Creek Hydroelectric Project, the Corp's downstream projects, and water withdrawals from Lake Keowee and Lake Jocassee.*
- The effect of project operations on water quality, particularly DO, immediately downstream of Jocassee Pumped Storage Station, and on downstream aquatic habitats and organisms.
- The effect of proposed reservoir drawdowns on the DO and temperature in Lake Keowee and the resulting releases in the tailrace of Keowee Hydro Station.*
- The effect of project operations on spring and summer fish populations downstream of the Jocassee Pumped Storage Station and Keowee Hydro Station.
- The effects of reduced flows on the fish community in the Little River bypassed reach.
- Entrainment mortality related to the Jocassee Pumped Storage Station and Keowee Hydro Station.*

4.2.3 Terrestrial Resources

- Effects of continued project operation, maintenance (e.g., road maintenance, rights-of-way vegetation management, and shoreline management), and project-related recreation on riparian and wetland habitat, and associated wildlife, including waterfowl nesting and foraging habitat and productivity, as well as the establishment and spread of exotic invasive species.*
- Effects of continued project operation, maintenance, and project-related recreation on unique ecological communities and state protected terrestrial species, such as Oconee bells, Rafinesque's big-eared bat, eastern small-footed myotis, peregrine falcon, bald eagle, red crossbill, cerulean and Swainson's warblers, green salamander, wood frog, pickerel frog, northern cricket frog, southern coal skink, and other state listed species potentially occurring in the project area.*

4.2.4 Threatened and Endangered Species

- Effects of project operation, maintenance, and project-related recreation on threatened and endangered species such as the rock gnome lichen, and other federally listed species potentially occurring in the project area.

4.2.5 Recreation and Land Use

- The adequacy of existing recreation facilities and public access within the project boundary to meet current and future (over the term of a new license) recreational demand.
- Effects of project operation (lake level fluctuations) on recreation facilities and public access.
- Effects of continued implementation of the existing Recreation Management Plan.
- The adequacy of the existing Shoreline Management Plan (SMP) to protect the environmental resources at the project.

- Effects of continuing the current policies for permitting piers, boat docks, and other facilities (non-project use of project lands and waters) on land use.

4.2.6 Cultural Resources

- Effects of project operation and maintenance on historic and archeological resources within the APE that are listed, or may be eligible for inclusion, in the National Register.
- Effects of project operation and maintenance on properties of traditional religious and cultural importance to an Indian tribe.
- Effects of project-induced recreation on cultural resources.
- Effects of Duke’s SMP on historic properties within the APE.

4.2.7 Developmental Resources

- Effects of potential operational changes on the energy and capacity benefits of the project and effects of various PM&E measures on project economics.

5.0 PROPOSED STUDIES

Depending upon the findings of studies completed by Duke and the recommendations of the consulted entities, Duke will consider, and may propose certain other measures to enhance environmental resources affected by the project as part of the proposed action. Duke’s initial study proposals are identified by resource area in Table 1. Detailed information on Duke’s initial study proposals can be found in the PAD. (Duke’s list has been reorganized by staff to fit the format of this SD1). Further studies may need to be added to this list based on comments provided to the Commission and Duke from interested participants, including Indian tribes.

Table 1. Duke’s Initial Study Proposals (Source: PAD- reorganized by staff).

Resource Area and Issue	Information Need
Geologic and Soil Resources	
Shoreline Erosion	Identify areas of erosion along the shoreline of Lake Jocassee.

Resource Area and Issue	Information Need
Aquatic Resources	
Aquatics	Determine seasonal composition and abundance of fish utilizing the Keowee and Jocassee tailwaters.
Jocassee Tailwater Water Quality	Determine DO levels and temperatures immediately downstream of Jocassee Pumped Storage Station.
Keowee Reservoir Water Quality	Develop a water quality model of DO and temperature in Keowee flow releases.
Reservoir Level	Analyze historical reservoir levels and develop statistical information for use in assessing potential reservoir levels.
Water Supply Resources	Identify current and projected future water withdrawals from and wastewater returns to the Project.
Operations	Develop a CHEOPS™ (Computerized Hydro Electric Operations Planning Software) model and a HEC-ResSim model to evaluate the water quantity related effects of potential changes in the operation of the Project.
Terrestrial Resources	
Wetlands Survey	Identify wetlands within the project boundary.
Mammal Survey	Identify mammal populations utilizing the Project.
Botanical Surveys	Identify plant populations growing within the project boundary.
Avian Survey	Identify bird populations utilizing the project.

Resource Area and Issue	Information Need
Recreation and Land Use	
Recreation Use and Needs	Determine recreational needs at the Project. ⁷
SMP Shoreline Classification Map Update	Update the SMP shoreline maps to reflect changes that have occurred and new information since the SMP shoreline maps were last revised.

6.0 REQUEST FOR INFORMATION AND STUDIES

We are asking federal, state, and local resource agencies; Indian tribes; NGOs; and the public to forward to the Commission any information that may assist us in conducting an accurate and thorough analysis of the project-specific and cumulative effects associated with relicensing the Keowee-Toxaway Project. The types of information requested include, but are not limited to:

- information, quantitative data, or professional opinion that may help define the geographic and temporal scope of the analysis (both site-specific and cumulative effects), and that helps identify significant environmental issues;
- identification of, and information from, any other EA, EIS, or similar environmental study (previous, on-going, or planned) relevant to the proposed the Keowee-Toxaway Project;
- existing information and any data that would help to describe the past and present actions and effects of the project and other developmental activities on environmental and socioeconomic resources;
- information that would help characterize the existing environmental conditions and habitats;
- identification of any federal, state, or local resource plans, and any future project proposals in the affected area (e.g., proposals to construct or operate

⁷ According to Duke, the Recreation Use and Needs Study also will include information on socioeconomics and aesthetic resources.

water treatment facilities, recreation areas, water diversions, timber harvest activities, or fish management programs), along with any implementation schedules;

- documentation that the proposed project would or would not contribute to cumulative adverse or beneficial effects on any resources. Documentation can include, but need not be limited to, how the project would interact with other projects in the area and other developmental activities; study results; resource management policies; and reports from federal and state agencies, local agencies, and Indian tribes;
- documentation showing why any resources should be excluded from further study or consideration; and
- study requests by federal and state agencies, local agencies, Indian tribes, NGOs, and the public that would help provide a framework for collecting pertinent information on the resource areas under consideration necessary for the Commission to prepare the EA/EIS for the project.

All requests for studies filed with the Commission must meet the criteria found in Appendix A, *Study Plan Criteria*.

The requested information, scoping comments, and study requests should be submitted to the Commission no later than July 11, 2011. All correspondence must clearly identify the following on the first page: **Keowee-Toxaway Project (P-2503-147)**. Scoping comments may be filed electronically via the Internet. See 18 C.F.R. 385.2001(a)(1)(iii) and the instructions on the Commission's website <http://www.ferc.gov/docs-filing/efiling.asp>. Commenters can submit brief comments up to 6,000 characters, without prior registration, using the eComment system at <http://www.ferc.gov/docs-filing/ecomment.asp>. You must include your name and contact information at the end of your comments. 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. Although the Commission strongly encourages electronic filing, documents may also be paper-filed. To paper-file, mail an original and seven copies to: Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission, 888 First Street, NE, Washington, D.C. 20426.

Register online at <http://www.ferc.gov/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.

Intervenors – those on the Commission’s service list for this proceeding – are reminded of the Commission’s Rules of Practice and Procedure, requiring parties filing documents with the Commission to serve a copy of the documents to each person whose name appears on the official service list. Intervenors can get the most recent version of the service list online at www.ferc.gov/docs-filing/service-list.asp.

Any questions concerning the scoping meetings, environmental site review, or how to file written comments with the Commission should be directed to Stephen Bowler at (202) 502-6861, or stephen.bowler@ferc.gov. Additional information about the Commission’s licensing process and the Keowee-Toxaway Project may be obtained from the Commission’s website, www.ferc.gov.

7.0 EA PREPARATION SCHEDULE

At this time, we anticipate the need to prepare a draft and final EA. The draft EA will be sent to all persons and entities on the Commission’s service and mailing lists for the Keowee-Toxaway Project. The EA will include our recommendations for operating procedures, as well as PM&E measures that should be part of any new license issued by the Commission. All recipients will then have 30 days to review the draft EA and file written comments with the Commission. All comments on the draft EA filed with the Commission will be considered in preparation of the final EA.

The major milestones, including those for preparing the EA, are as follows:

<u>Major Milestone</u>	<u>Target Date</u>
Issue Scoping Document 1	May 2011
Scoping Meetings	June 2011
NOI/PAD/SD1 comments due	July 2011
File Proposed Study Plan	August 2011
Study Planning Meeting(s)	September 2011
File Revised Proposed Study Plan	December 2011
Director's Study Plan Determination	January 2012
Initial Study Report	January 2013
Updated Study Report due	January 2014
License Application Filed	August 2014
Ready for Environmental Analysis Notice Issued	October 2014
Deadline for Filing Comments, Recommendations, and Agency Terms and Conditions/Prescriptions	December 2014
Draft EA Issued	June 2015
Initiate section 10(j) process (if necessary)	June 2015

Comments on Draft EA Due	July 2015
Deadline for Filing Modified Agency Recommendations	September 2015
Final EA Issued	December 2015

If Commission staff determines that there is a need for additional information or additional studies, the issuance of the Ready for Environmental Analysis notice could be delayed. If this occurs, all subsequent milestones would be delayed by the time allowed for Duke to respond to the Commission's request. A copy of Duke's process plan, which has a complete list of relicensing milestones for the Keowee-Toxaway Project, including those for developing the license application, is attached as appendix B to this SD1.

8.0 PROPOSED EA OUTLINE

The preliminary outline for the Keowee-Toxaway Project EA is as follows:

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9.0 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 24 comprehensive plans potentially relevant to the proposed Keowee-Toxaway 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 C.F.R. section 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>.

Table 2. Comprehensive plans currently on file with the Commission that may be relevant to the Keowee-Toxaway Project.

STATE	COMPREHENSIVE PLAN
NC	National Park Service. 1982. The Nationwide Rivers Inventory. Department of the Interior, Washington, D.C. January 1982.
NC	North Carolina Department of Environment & Natural Resources. North Carolina State Outdoor Recreation Plan (SCORP): 2009-2013. Raleigh, North Carolina. December 2008.
NC	North Carolina Wildlife Resources Commission. 2005. North Carolina Wildlife Action Plan. Raleigh North Carolina.
NC	North Carolina Department of Environment and Natural Resources. 15A NCAC Subchapter 2B-Surface Water and Wetland Standards.
NC	North Carolina Department of Environment & Natural Resources. 2004. Little Tennessee River Basin & Savannah River Drainage Area (Classifications and Water Quality Standards). Raleigh, North Carolina.
NC	North Carolina Department of Environment, Health & Natural Resources. Water Quality Progress in North Carolina 1998-1999 305(b) Report. Raleigh, North Carolina. 2000.
NC	Southern Appalachian Forest Coalition and Pacific Rivers Council. Undated. Protection of aquatic biodiversity in the Southern Appalachian National Forests and their watersheds.
NC	U.S. Forest Service. 1994. Nantahala and Pisgah National Forest Land and Resource Management Plan- Amendment 5. Department of Agriculture,

	Asheville, North Carolina. March 1994.
NC	U.S. Fish and Wildlife Service. Canadian Wildlife Service. 1986. North American Waterfowl Management Plan. Department of the Interior. Environment Canada. May 1986.
NC	U.S. Fish and Wildlife Service. Undated. Fisheries USA: the recreational fisheries policy of the U.S. Fish and Wildlife Service. Washington, D.C.
SC	National Park Service. 1982. The Nationwide Rivers Inventory. Department of the Interior, Washington, D.C. January 1982.
SC	South Carolina Department of Health and Environmental Control. 1985. Water classification sand standards, and classified waters. Columbia, South Carolina. June 1985.
SC	South Carolina Department of Health and Environmental Control. 1988. Statewide Water Quality Assessment, FY 1986-1987: a report to Congress pursuant to Section 305(b) of the Clean Water Act. Columbia, South Carolina. May 1988.
SC	South Carolina Department of Health and Environmental Control. 1989. Assessment of Non-point Source Pollution for the State of South Carolina. Columbia, South Carolina. April 1989.
SC	South Carolina Department of Health and Environmental Control. 1989. Non-point source management program for the State of South Carolina. Columbia, South Carolina. April 1989.
SC	South Carolina Department of Natural Resources. 2005. South Carolina comprehensive wildlife conservation strategy: 2005-2010. Columbia, South Carolina. September 28, 2005.
SC	South Carolina Department of Parks, Recreation, and Tourism. 2008. South Carolina State Comprehensive Outdoor Recreation Plan (SCORP). Columbia, South Carolina. April 2008.
SC	South Carolina Department of Parks, Recreation, and Tourism. 2002. The South Carolina State Trails Plan. Columbia, South Carolina. 2002.
SC	South Carolina Department of Natural Resources. 2004. South Carolina Water Plan – Second edition. Columbia, South Carolina. January 2004.
SC	South Carolina Water Resources Commission. National Park Service. 1988. South Carolina rivers assessment. Columbia, South Carolina. September 1988.
SC	South Carolina Wildlife and Marine Resources Department. 1989. South Carolina instream flow studies: a status report. Columbia, South Carolina. June 1, 1989.
SC	U.S. Forest Service. 2004. Sumter National Forest Revised Land and Resource Management plan. Department of Agriculture, Columbia, South Carolina. January 2004.

SC	U.S. Fish and Wildlife Service. Canadian Wildlife Service. 1986. North American Waterfowl Management Plan. Department of the Interior. Environment Canada. May 1986.
SC	U.S. Fish and Wildlife Service. Undated. Fisheries USA: The Recreational Fisheries Policy of the U.S. Fish and Wildlife Service. Washington, D.C.

10.0 MAILING LIST

The list below is the Commission's official mailing list for the Keowee-Toxaway Project (FERC No. 2503). We are also including in the mailing, this time only, individuals and entities listed on Duke's mailing list who are not listed on the Commission's mailing list. If you want to receive future mailings for the Keowee-Toxaway Project and are not included in the list below, please send your request by email to efiling@ferc.gov, or by mail to: Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission, 888 First Street, N.E., Room 1A, Washington, D.C. 20426. All written and emailed requests to be added to the mailing list must clearly identify the following on the first page: Keowee-Toxaway Project No. 2503-147. 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
STUDY PLAN CRITERIA
18 CFR Section 5.9(b)

Any information or study request must contain the following:

1. Describe the goals and objectives of each study proposal and the information to be obtained;
2. If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied;
3. If the requester is not a resource agency, explain any relevant public interest considerations in regard to the proposed study;
4. Describe existing information concerning the subject of the study proposal, and the need for additional information;
5. Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements;
6. Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate field season(s) and the duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge; and
7. Describe considerations of level of effort and cost, as applicable, and why proposed alternative studies would not be sufficient to meet the stated information needs.

**APPENDIX B
PROCESS PLAN AND SCHEDULE**

KEOWEE-TOXAWAY PROCESS PLAN AND SCHEDULE

(shaded milestones are unnecessary if there are no study disputes; if due date falls on a weekend or holiday, the due date is the following business day)

18 CFR §	Lead	Activity	Timeframe	Deadline
§ 5.5 (d)	Duke	Deadline to File NOI		3/15/11 ⁸
§ 5.6 (a)	Duke	Deadline to File PAD		3/15/11 ⁸
§ 5.7	FERC	Initial Tribal Consultation Meeting	Within 30 Days of filing NOI and PAD (up to Day 30)	4/14/11
§5.8 (a) b(2) (c)	FERC	FERC Notices NOI/PAD and Issues Scoping Document 1 (SD1) FERC Issues Notice of Commencement of Proceeding and Scoping Document FERC Requests to Initiate Informal Consultation under Section 7 ESA Consultation FERC Issues SD1	Within 60 days of filing NOI and PAD (up to Day 60)	5/16/11
(b)(3) (viii)	FERC / Stakeholders	Public Scoping Meeting and Site Visit	Within 30 days of NOI and PAD notice and issuance of SD1	6/15/11

⁸ Duke filed the NOI and PAD on 3/11/2011, earlier than indicated in their proposed process plan. To avoid rescheduling and potential confusion and to maximize participation, we are maintaining the previously agreed upon and publicized schedule for scoping based on the 3/15/2011 filing deadline in this instance.

18 CFR §	Lead	Activity	Timeframe	Deadline
§ 5.9	Stakeholders	File Comments on PAD, SD1, and Study Requests	Within 60 days of NOI and PAD notice and issuance of SD1	7/15/11
§5.10	FERC	FERC Issues Scoping Document 2 (SD2) (if necessary)	Within 45 days of deadline for filing comments on SD1	8/29/11
§5.11	Duke	File Proposed Study Plans	Within 45 days of deadline for filing comments on SD1	8/29/11
(e)	Duke / Stakeholders	Study Plan Meetings	Within 30 days of deadline for filing proposed Study Plans	9/28/11
§5.12	Stakeholders	File Comments on Proposed Study Plan	Within 90 days after proposed study plan is filed	11/28/11
§5.13 (a)	Duke	File Revised Study Plan (if necessary)	Within 30 days following the deadline for filing comments on proposed Study Plan	12/28/11
(b)	Stakeholders	File Comments on Revised Study Plan (if necessary)	Within 15 days following Revised Study Plan	1/12/12
(c)	FERC	FERC Issues Study Plan Determination	Within 30 days following Revised Study Plan	1/27/12
§5.14 (a)	Mandatory Conditioning Agency	Formal Study Dispute Resolution Process (if necessary)	Within 20 days of Study Plan determination	2/16/12
(d)(3)	Study Dispute Panel	Third Panel Member Selected	Within 15 days from notice of Study Dispute	3/2/12
(d)	Study Dispute Panel	Panel Convenes	Within 20 days from notice of Study Dispute	3/7/12
(j)	Duke	Applicant Comments on Study Dispute due	Within 25 days from notice of Study Dispute	3/12/12

18 CFR §	Lead	Activity	Timeframe	Deadline
(j)	Study Dispute Panel	Technical Conference Held	On or Before the 30 day from notice of Study Dispute	3/17/12
(k)	Study Dispute Panel	Panel Finding Issued	Within 50 days from notice of Study Dispute	4/6/12
(l)	FERC	Director's Study Dispute Determination	Within 70 days from notice of Study Dispute	4/26/12
§5.15	Duke	Conduct Field Studies	Spring through fall/winter 2012	
(b)	Duke	File Study Progress Reports	Spring and fall 2012	
(c)(1)	Duke	File Initial Study Reports	No later than one year from Study Plan approval	1/26/13
(c)(2)	Duke	Initial Study Results Meeting	Within 15 days of Initial Study Report	2/10/13
(c)(3)	Duke	File Study Results Meeting Summary	With 15 days of Study Results Meeting	2/25/13
(c)(4)	Stakeholders / FERC	File Meeting Summary Disputes/Modifications to Study/Propose New Studies (if necessary)	Within 30 days of filing Meeting Summary	3/27/13
(c)(5)	Duke	File Responses to Disputes (if necessary)	Within 30 days of disputes	4/26/13
(c)(6)	FERC	Director's Study Plan Determination	Within 30 day of filing responses to disputes	5/26/13
§5.15 (a)	Duke	Conduct Second Season Field Studies	Spring through fall/winter 2013	
(b)	Duke	File Study Progress Reports	Spring and fall 2013	
(f)	Duke	File Updated Study Reports	No later than two years from Study Plan approval	1/26/14

18 CFR §	Lead	Activity	Timeframe	Deadline
(f)	Duke	Second Study Results Meeting	Within 15 days of Updated Study Report	2/10/14
(f)	Duke	File Study Results Meeting Summary	With 15 days of Study Results Meeting	2/25/14
(f)	Stakeholders / FERC	File Meeting Summary Disputes/Modifications to Study/Propose New Studies (if necessary)	Within 30 days of filing Meeting Summary	3/27/14
(f)	Duke / Stakeholders	File Responses to Disputes (if necessary)	Within 30 days of disputes	4/26/14
(f)	FERC	Director's Study Plan Determination	Within 30 day of filing responses to disputes	5/26/14
§5.16 (a)	Duke	File Preliminary Licensing Proposal (or Draft License Application) with the FERC and distribute to Stakeholders	Not later than 150 days before final application is filed	4/3/14
(e)	FERC / Stakeholders	Comments on Duke Preliminary Licensing Proposal, Additional Information Request (if necessary)	Within 90 days of filing Preliminary Licensing Proposal (or Draft License Application)	7/2/14
§5.17 (a)	Duke	License Application Filed		8/31/14