Attachment C: Threatened and Endangered Species Consultation Letters

J. Ed Burchfield, Jr.
Vice President
Oconee Nuclear Station

Duke Energy
ON01VP | 7800 Rochester Hwy
Seneca, SC 29672
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Ed.Burchfield@duke-energy.com

BY U.S. MAIL
RETURN RECEIPT REQUESTED

November 11, 2019

Fran Marshall
Environmental Affairs Administration
2600 Bull Street
Columbia, SC 29201

RE: Duke Energy – Oconee Nuclear Station Units 1, 2, and 3 Subsequent License Renewal

Dear Ms. Marshall:

Duke Energy Carolinas, LLC (Duke Energy) is seeking to renew the operating license for Oconee Nuclear Station Units 1, 2, and 3 (ONS) for an additional 20 years (see Table 1). Duke Energy will set up a meeting to discuss the Oconee Nuclear Station. Duke Energy and ONS have safely and reliably provided electricity to our Carolinas customers for decades. ONS has generated clean and cost-effective power, provided thousands of well-paying jobs, and produced substantial economic benefits for the Carolinas. Renewing the licenses of ONS is important for our customers, communities and environment.

Table 1. ONS Licensing Dates

ONS Unit	License Expiration Date	Extended License Expiration Date
Unit 1	February 6, 2033	February 6, 2053
Unit 2	October 6, 2033	October 6, 2053
Unit 3	July 19, 2034	July 19, 2054

Duke Energy's nuclear fleet plays an important role in the company's efforts to lower carbon emissions. In 2018, the Duke Energy nuclear fleet generated more than 72 billion kilowatt-hours of electricity and avoided the release of about 54 million tons of carbon dioxide – equivalent to keeping more than 10 million passenger cars off the road. The company has set aggressive carbon reduction goals of at least 50% by 2030 and net-zero by 2050 and keeping its nuclear fleet operating is key to achieving these goals.

Renewing the nuclear licenses will provide significant value to Duke Energy customers, as well as continue to support Carolinas communities through jobs, tax revenues and partnerships. Duke Energy employs about 5,000 workers in its nuclear group, with additional contract workers supporting refueling outages and project work. In 2018, the Duke Energy also paid more than $300 million in property and payroll taxes associated with the nuclear stations, benefiting local governments and school districts. In addition, nuclear employees support the communities where they live and work by donating time and funds through sponsorships and volunteer activities.

The ONS site is situated on 510 acres in eastern Oconee County, South Carolina (SC), approximately eight miles northeast of Seneca, SC, on the southern shore of Lake Keowee. During the license renewal term, Duke Energy proposes to continue operating the units as currently operated. There are currently no ground-disturbing activities or refurbishment anticipated at the ONS site during the subsequent license renewal period. Figures depicting the station site and the vicinity within a 6-mile radius of the station are enclosed.

As stated previously, Duke Energy is looking forward to meeting with you and will set up meeting. Should you or your staff have any questions or comments, please contact Mike Ruhe at (980) 373-3231 / Mike.Ruhe@duke-energy.com.

Sincerely,

J. Ed Burchfield, Jr
Site Vice President
Oconee Nuclear Station

Attachments:
Figure 1. ONS Site
Figure 2. ONS 6-mile Vicinity

cc: Bryan Ball
Upstate EA Anderson
220 McGee Road
Anderson, SC 29621

Figure 1. ONS Site

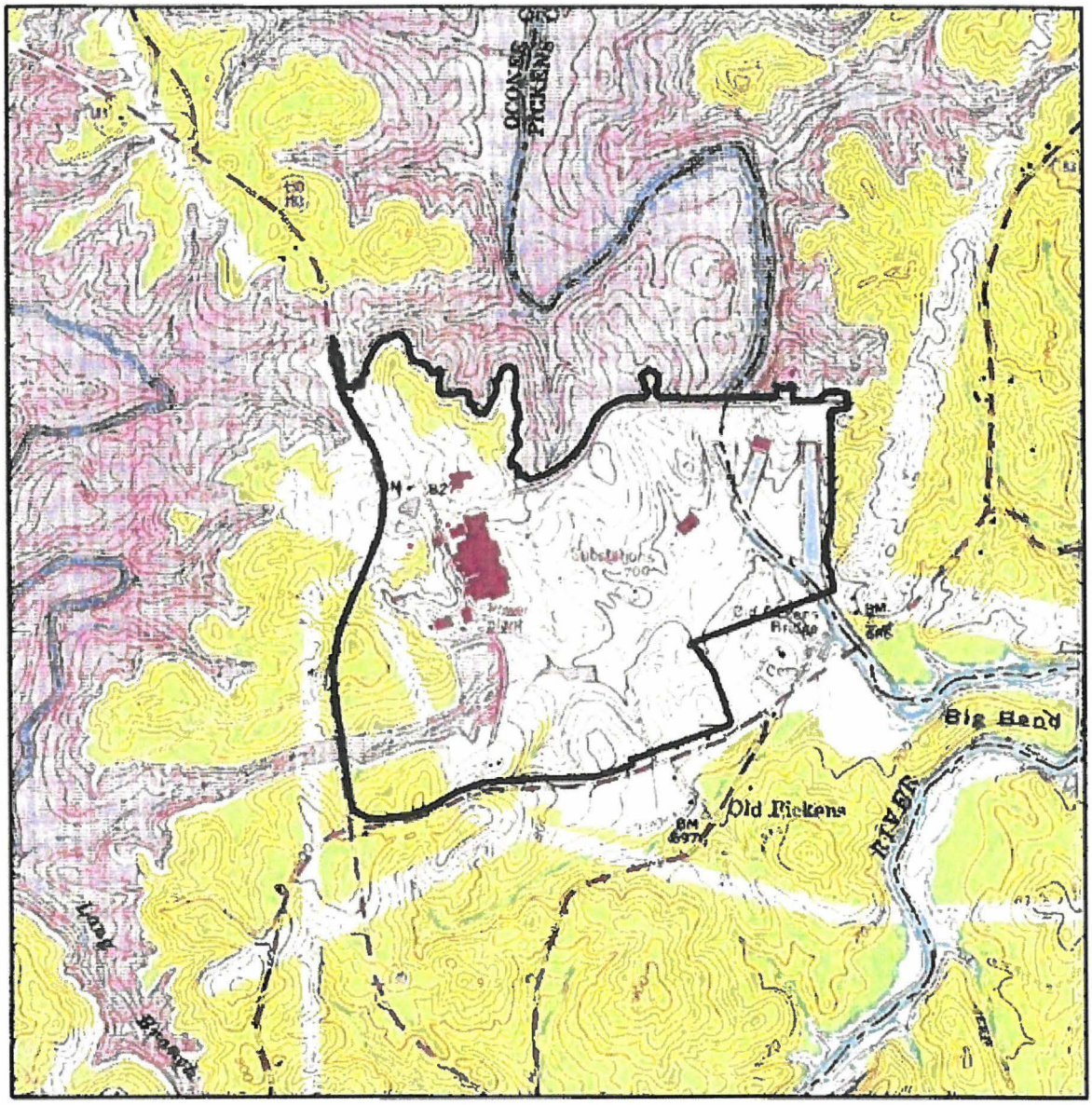
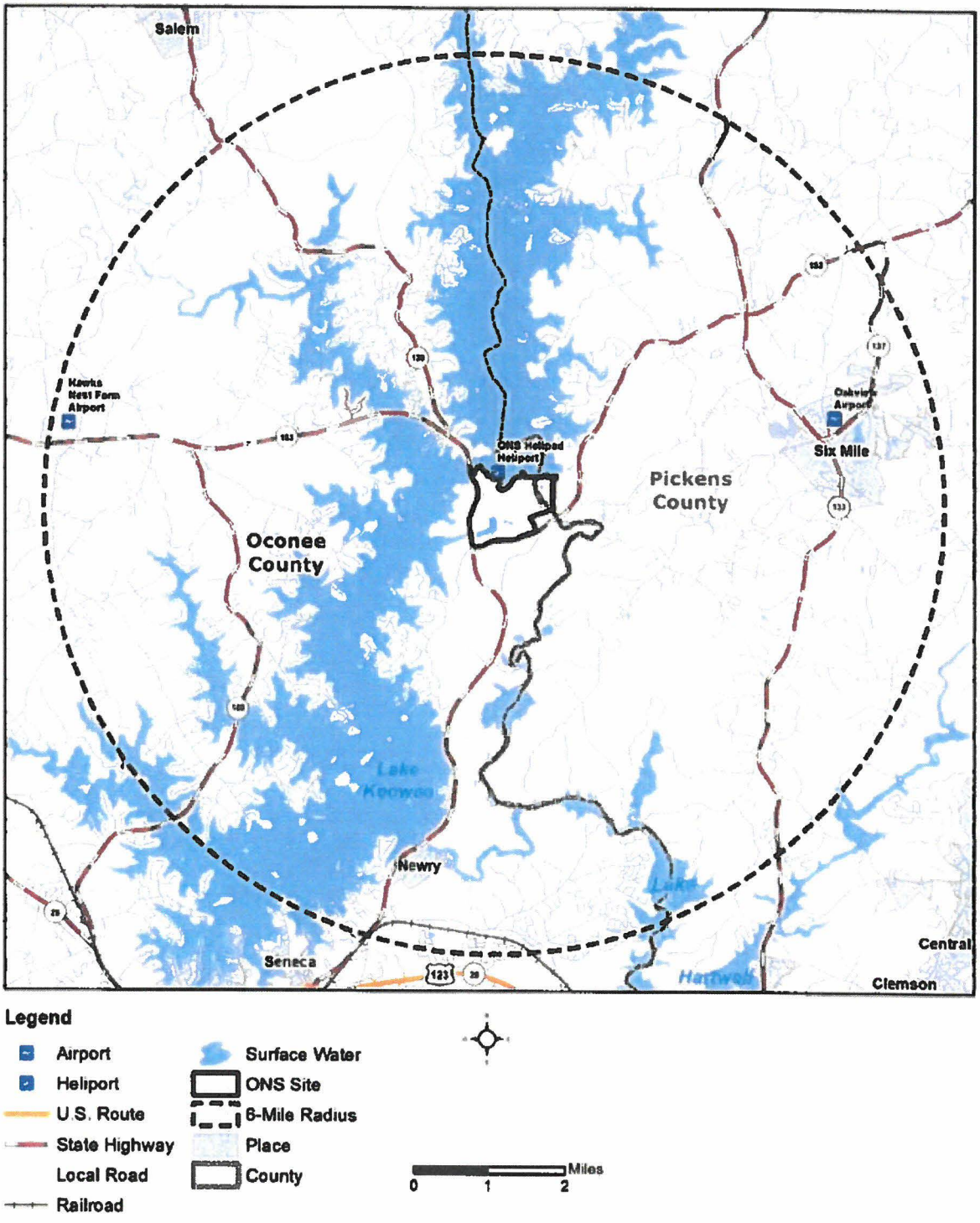


Figure 2. ONS 6-mile Vicinity



cc: Myra Reece
SCDHEC
2600 Bull Street
Columbia, SC 29201

DUKE ENERGY.

J. Ed Burchfield, Jr.
Vice President
Oconee Nuclear Station

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BY U.S. MAIL - RETURN RECEIPT REQUESTED

November 11, 2019

Fran Marshall
Environmental Affairs Administration
SCDHEC
2600 Bull Street
Columbia, SC 29201

RE: Duke Energy – Oconee Nuclear Station Units 1, 2, and 3 Subsequent License Renewal

Dear Ms. Marshall:

Duke Energy is seeking a response from DHEC concerning the potential existence and Perceived public health risks associated with thermophilic organisms that may be present in the portion of Lake Keowee that receives the cooling water discharge from our Oconee Nuclear Station (ONS). Information concerning the reason for this request and specific microorganisms of concern is presented below. Figures depicting the station site and the vicinity within a 6-mile radius of the station are attached.

Reason for this Request and Microorganisms of Concern
Duke Energy Carolinas, LLC (Duke Energy) is preparing an application for renewing the operating licenses for Oconee Nuclear Station Units 1, 2, and 3 (ONS) for an additional 20 years (see Table 1). Duke Energy is contacting you for assistance in assessing the impacts from continued operation during this renewed license period.

Table 1. ONS Licensing Dates

ONS Unit	License Expiration Date	Extended License Expiration Date
Unit 1	February 6, 2033	February 6, 2053
Unit 2	October 6, 2033	October 6, 2053
Unit 3	July 19, 2034	July 19, 2054

As part of the renewal process, the U.S. Nuclear Regulatory Commission (NRC) requires that the license renewal application include an environmental report (ER) that assesses the impacts from continued operation and any refurbishment undertaken to enable the continued operation

of the units. One area of potential environmental impact concerns potential public health risks associated with microorganisms.

Information to Support Consultation on Thermophilic Microorganisms

In Regulatory Guide 1437, Supplement 1, *Generic Environmental Impact Statement for License Renewal of Nuclear Plants* (GEIS), the NRC considered health impacts from thermophilic organisms posed to both the public and plant workers because ideal conditions for thermophilic bacteria can result from nuclear facility operations and discharges. The NRC designated public health impacts resulting from thermophilic organisms as a Category 2 issue requiring plant-specific analysis. Information to be considered in evaluating impacts includes thermal discharge temperature; thermal characteristics of the receiving water bodies; thermal conditions for the enhancement of Naegleria fowleri and other pathogens; and potential impacts to public health.

The GEIS discussion of microbiological hazards focuses on the thermophilic microorganisms Legionella spp. (which can be a hazard in cooling towers) and the pathogenic amoeba, N. fowleri (which can be a hazard resulting from cooling water discharges). ONS's cooling system does not use cooling towers but does have a thermal discharge to publicly accessible water.

Naegleria spp. is ubiquitous in nature and thrives in heated water bodies at temperatures ranging from 95-106°F or higher is rarely found in water cooler than 95°F, and infection rarely occurs in water temperatures of 95°F or less (NRC 2013, Section 3.9.3). SCDHEC, South Carolina's state public health agency, characterized the risk of infection from N. fowleri 's as very rare, but warns that "recreational water users should assume that N. fowleri is present in warm freshwater across the United States and be aware that there is always a low-level risk of infection." There have been only eight cases of Primary Amebic Meningoencephalitis, the infection caused by N. fowleri, in South Carolina from 1962 to 2018.

ONS utilizes an open-cycle cooling system in which cooling water is withdrawn from Lake Keowee from its intake channel on the south side of the ONS plant, heated in the condensers, and returned to Lake Keowee through the discharge point on the northeast side of the ONS plant. ONS discharges heated cooling water at a depth of approximately 20 feet. The lake waters near the discharge area are open to the public. Activities in the area include recreational boating, fishing, and scuba diving. Lake Keowee has residential housing and public swimming areas as well.

The current NPDES permit for ONS establishes both a maximum allowable discharge temperature, and a limit for increases of water temperature between the intake and discharge. The maximum discharge temperature is100°F as a daily average, unless critical hydrological, meteorological, and electrical demand conditions apply. In such situations, the discharge temperature shall not be allowed to exceed 103°F. The maximum temperature rise above the intake temperature is limited to 22°F when the intake temperature is greater than 68°F. In the 2013 permit renewal application, Duke Energy requested the daily maximum value of 100°F to a 7-day average not to exceed 100°F.

As part of a CWA Section 316(a) demonstration monitoring, Duke Energy monitors water temperatures at several Lake Keowee stations. The most recent report submitted to SCDHEC is

from 2013 and covers the years 2006 – 2011. The closest station to the plant's discharge is Location 508, which is approximately 200 meters from the discharge. The annual maximum measured surface temperatures at Location 508 in the years 2006 to 2011 ranged from 92.5 °F in 2009 to 94.8°F in 2008. The annual maximum temperatures were similar to values reported in 1995 and 2007 reports. The report also noted that no exceedances of permit thermal limits occurred over the 2006 – 2011 period.

As noted above, N. fowleri is rarely found in water cooler than 95°F, and infection rarely occurs in water temperatures of 95°F or less. While the immediate discharge area could have temperatures in the summer above 95°F, the maximum temperatures recorded 200 meters from the discharge were below 95°F, indicating lower risk. In addition, the discharge point and this monitoring point is located in an area of deep water, approximately 23 meters. The N. fowleri infection risk is higher in shallow, warm water.

The Friends of Lake Keowee published an article in their newsletter in 2016 from Dr. J. Hains of Clemson University that addressed the risk posed by ONS's heated discharge for promoting N. fowleri. Dr. Hains wrote, "The temperature at which this organism grows best is reported to be far greater (approximately 112°F) than the ONS discharge. Moreover, that water originates in the coldest, deepest depths of Lake Keowee, not an optimal habitat. To my knowledge there have been no studies of the distribution of this organism in Lake Keowee (or in other nearby lakes in recent times)."

Additionally, for the first license renewal of ONS, Duke Energy consulted with SCDHEC to determine if the continued operation of Oconee will have public health impacts due to the enhancement of thermophilic organisms. By letter dated October 25, 1996, Dr. John F. Brown, State Toxicologist at SCDHEC, summarized the agency's position and opinion regarding the public health implications of continued operation of Oconee. Regarding the potential public health hazard from pathogenic microorganisms whose abundance might be promoted by ONS's artificial warming of recreational waters, Dr. Brown indicated that there seems to be no significant threat to off-site persons near such heated recreational waters.

As stated earlier, this letter seeks your input on any potential public health concerns associated with our proposed continued operation of ONS. We appreciate your notifying us of your comments and any information you believe Duke Energy should consider in the preparation of the ER. Duke Energy plans to include this letter and any response you provide in the ER.

Should you or your staff have any questions or comments, please contact Mike Ruhe at (980) 373-3231 / Mike.Ruhe@duke-energy.com.

Sincerely,

J. Ed Burchfield, Jr
Site Vice President
Oconee Nuclear Station

Attachments:

Figure 1. ONS Site
Figure 2. ONS 6-mile Vicinity

Figure 1. ONS Site

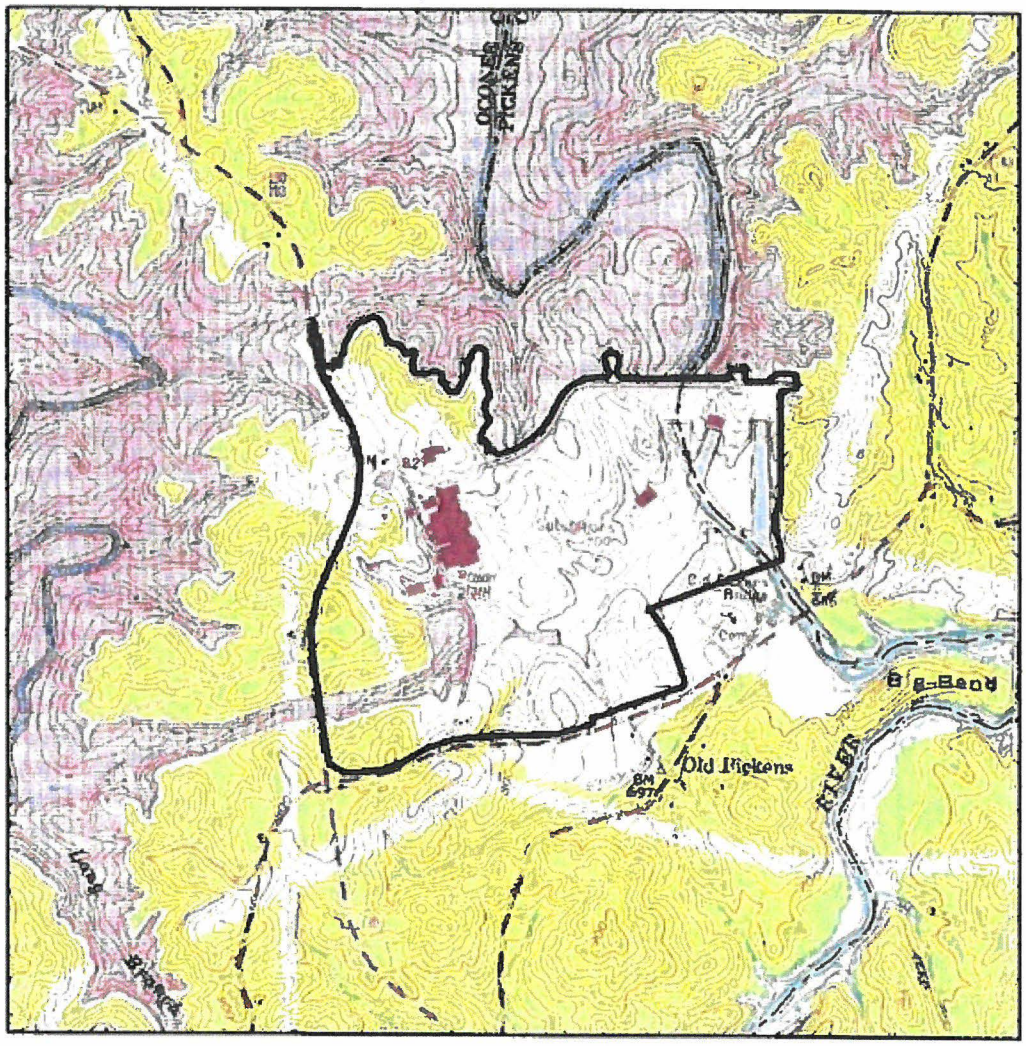
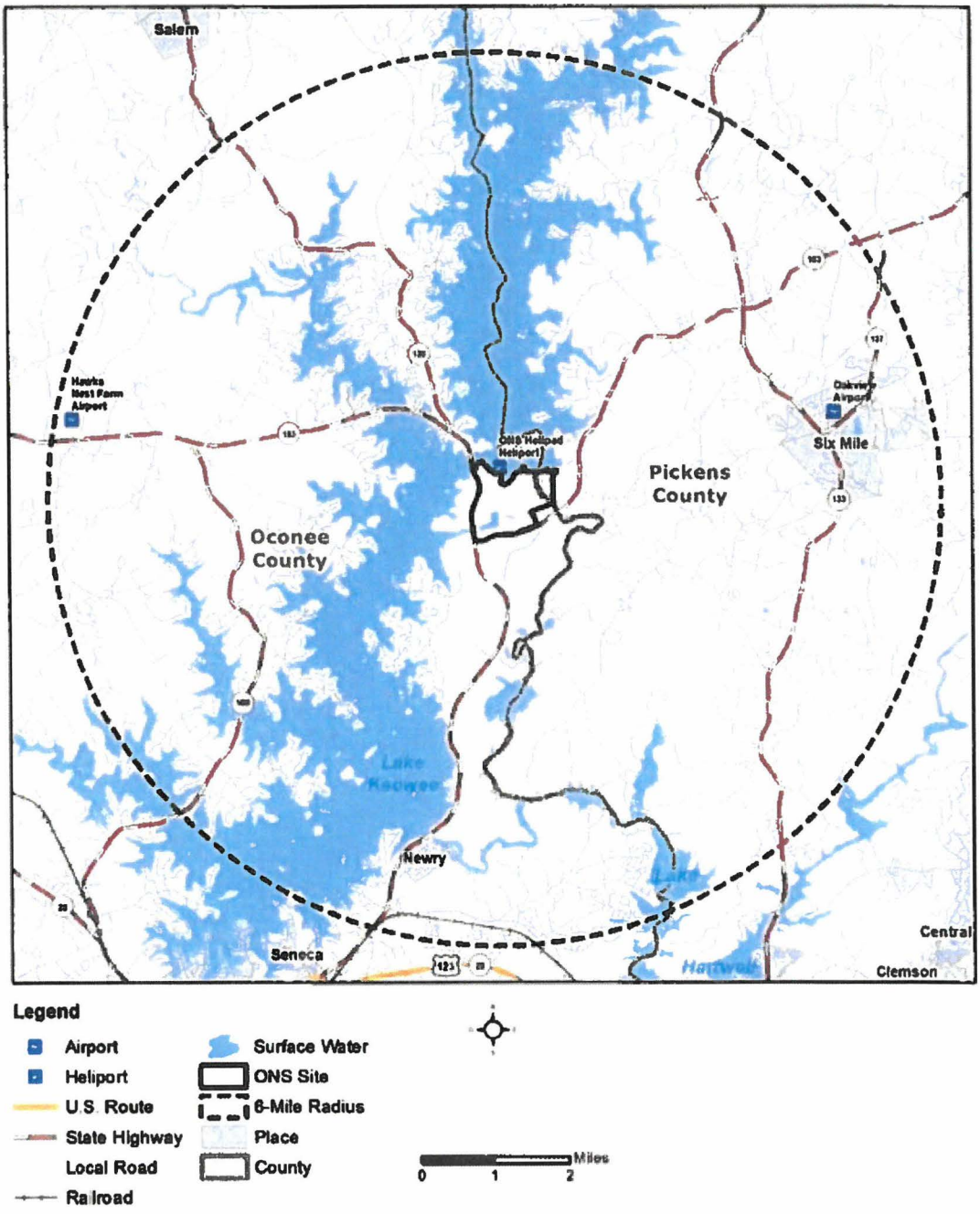


Figure 2. ONS 6-mile Vicinity



cc: Myra Reece
SCDHEC
2600 Bull Street
Columbia, SC 29201

J. Ed Burchfield, Jr.
Vice President
Oconee Nuclear Station

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Ed Burchfield @duke-energy.com

BY U.S. MAIL - RETURN RECEIPT REQUESTED

February 28, 2020

Roy E. Crabtree, PhD.
National Marine Fisheries Service
Southeast Regional Office
263 13th Avenue South
St. Petersburg, FL, 33701

RE: Duke Energy – Oconee Nuclear Station Units 1, 2, and 3 Subsequent License Renewal

Dear Dr. Crabtree:

Duke Energy Carolinas, LLC (Duke Energy) is preparing an application for renewing the operating licenses for Oconee Nuclear Station Units 1, 2, and 3 (ONS) for an additional 20 years (see Table 1). Duke Energy is contacting you for assistance in assessing the impacts from continued operation during this renewed license period.

Table 1. ONS Licensing Dates

ONS Unit	License Expiration Date	Extended License Expiration Date
Unit 1	February 6, 2033	February 6, 2053
Unit 2	October 6, 2033	October 6, 2053
Unit 3	July 19, 2034	July 19, 2054

As part of the renewal process, the U.S. Nuclear Regulatory Commission (NRC) requires that the license renewal application include an environmental report (ER) that assesses the impacts from continued operation and any refurbishment undertaken to enable the continued operation of the units. The ER addresses the potential to impact species listed or proposed for listing as threatened or endangered in accordance with the Endangered Species Act (ESA), and important plant and animal habitats, including critical habitats as defined by the ESA and essential fish habitat (EFH) as identified under the Magnuson-Stevens Fishery Conservation and Management Act. Also, as part of the renewal process, the NRC may request a consultation with your agency regarding the license renewal. The timeframe for the NRC consultation request is anticipated to

be within a few months of Duke Energy's application submittal, currently scheduled for late 2021.

To facilitate our assessment and an efficient NRC consultation, this letter seeks confirmation from the National Marine Fisheries Service (NMFS) regarding our understanding that the ONS and its vicinity and downstream influence does not extend to any identified EFH or critical habitat nor is this area identified for the presence of listed or candidate species under your jurisdiction. A figure depicting the station site and the vicinity within a 6-mile radius of the station is enclosed. ONS is adjacent to Lake Keowee which lies in the upper Savannah River basin. Lake Keowee is owned and managed by Duke Energy and serves as the cooling water source for ONS. Effluents from ONS are discharged to Lake Keowee and to the Keowee River just below the Keowee Dam. Water from the lake drains into the Keowee River travelling south eventually entering Lake Hartwell. During the license renewal term, Duke Energy proposes to continue operating the units as currently operated.

South of Lake Keowee, the U.S. Army Corps of Engineers' Savannah District (USACE) operates three interconnected dams and reservoirs in the upper reaches of the Savannah River Basin — Hartwell, Richard B. Russell, and J. Strom Thurmond. The J. Strom Thurmond Dam, which forms Thurmond Lake at River Mile 239.5, is the last major dam on the Savannah River as it flows to the Atlantic Ocean. Fisheries management at the USACE lakes is performed by both the states of Georgia and South Carolina and the USACE. The states regulate fishermen and stock fish, while the USACE operates the dams and manages the surrounding federal land affecting fishermen, fish and their habitat. Along the lower Savannah River, there are small dams and diversion dams including: Stevens Creek, North Augusta, Augusta Canal Diversion, Augusta Canal Diversion Return, Augusta, and New Savannah Bluff Lock and Dam. The New Savannah River Bluff Lock and Dam, the lowest dam on the Savannah River at River Mile 187 blocks access to historical Atlantic sturgeon (*Acipenser oxyrinchus*) and shortnose sturgeon (*Acipenser brevirostrum*) spawning grounds and is the northernmost extent of the Atlantic sturgeon's designated critical habitat. The USACE has proposed to eliminate the blockage to the historic spawning grounds through creation of a fish passage at the New Savannah River Bluff Lock and Dam and/or removal of the dam. These lakes and dams along with ONS are depicted on the enclosed Savannah River Basin & Project Location Map reproduced from the Federal Energy Regulatory Commission's Final Environmental Assessment for Hydropower License for the Keowee-Toxaway Hydroelectric Project.

The closest EFH, located over 100 linear miles away from ONS, as identified during a search of NMFS's interactive EFH mapper is depicted on a third enclosed figure. The EFH extends along the Savannah River from the Atlantic Ocean to north of Augusta, Georgia. This extent is south of the southernmost USACE lake, Lake J. Strom Thurmond. As such, Duke Energy would like to request your concurrence that no EFH could be impacted by continued operations at ONS.

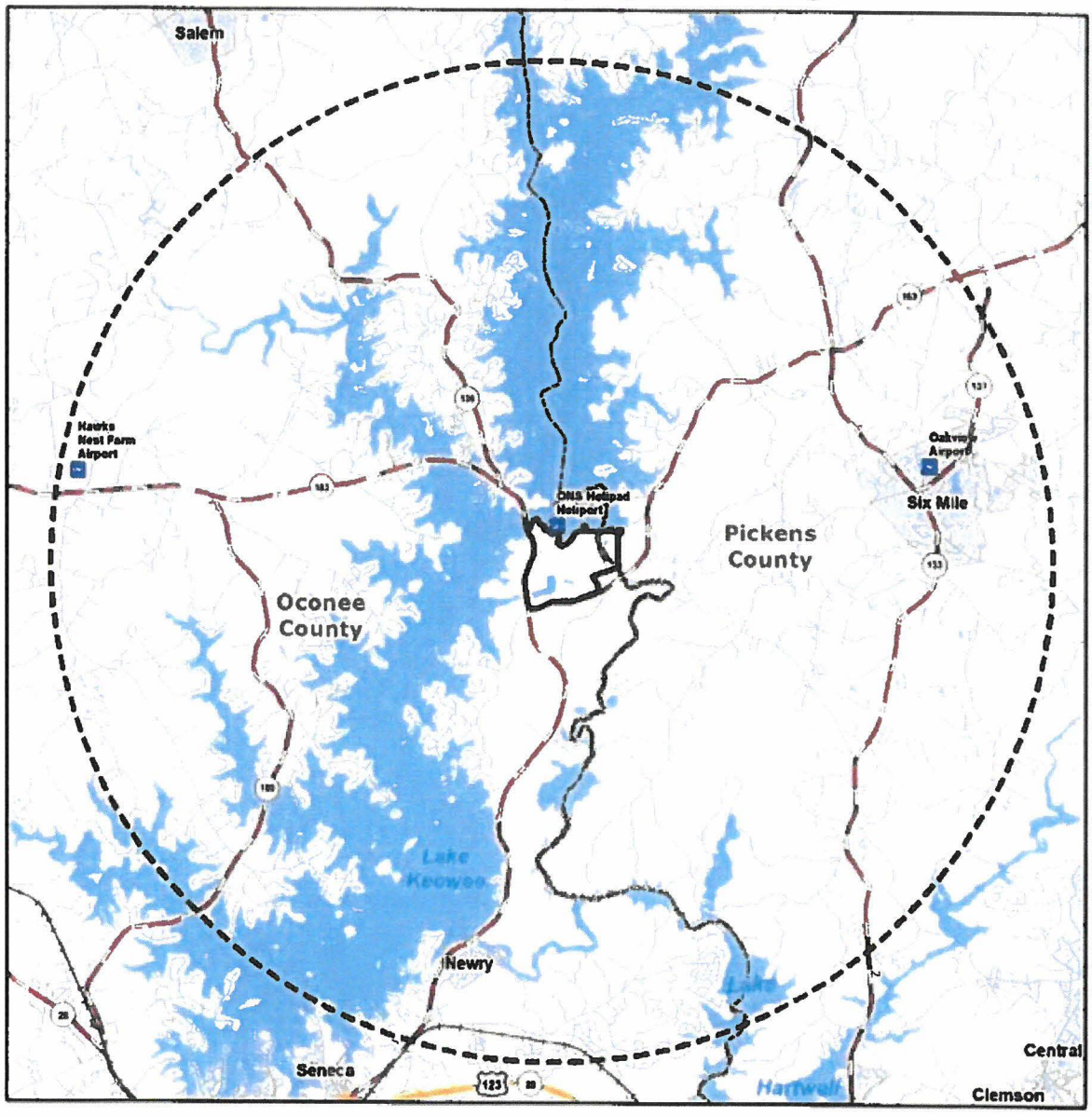
Should you or your staff have any questions or comments, please contact Scott Fletcher at (980) 875-6014 / scott.fletcher@duke-energy.com.

Sincerely,

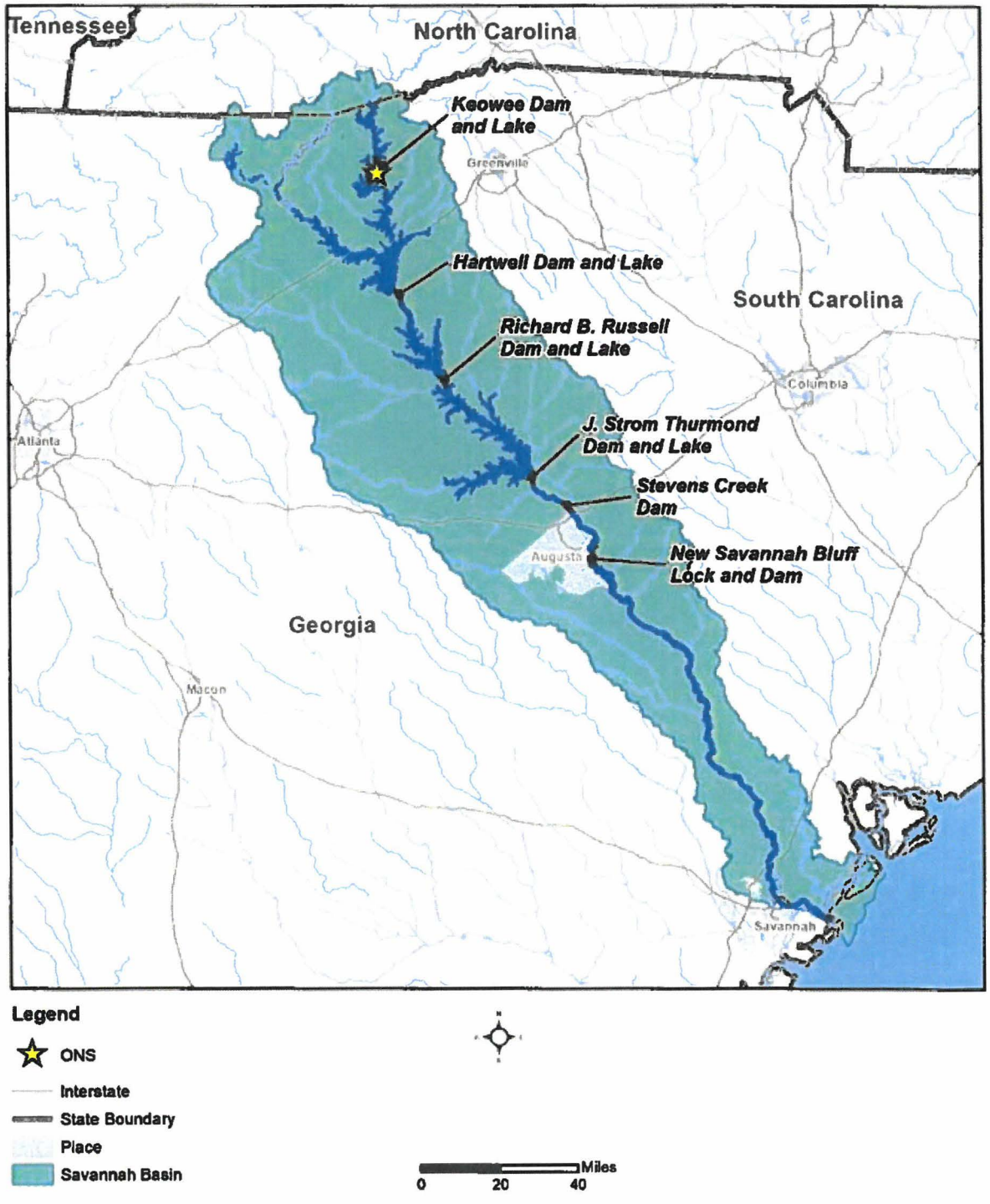
J. Ed Burchfield, Jr.
Vice President
Oconee Nuclear Station

Enclosures:
ONS 6-mile Vicinity
Savannah River Basin & Project Location Map
Map of Essential Fish Habitat Nearest to ONS

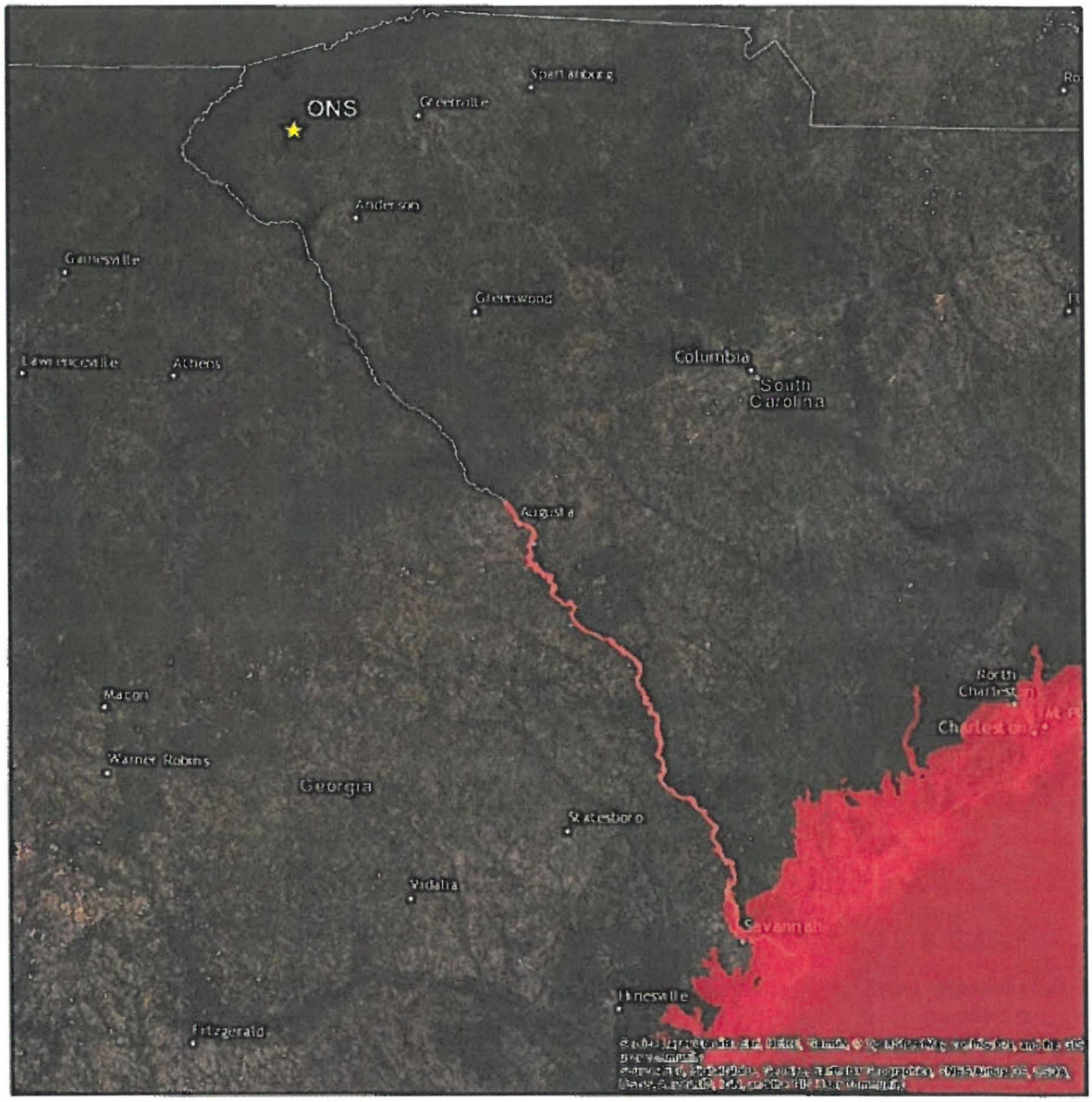
Oconee Nuclear Station (ONS) 6-mile Vicinity



Savannah River Basin & Project Location Map



Map of Essential Fish Habitat Nearest to ONS



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BY U.S. MAIL
RETURN RECEIPT REQUESTED

November 11, 2019

Bill Marshall
South Carolina Department of Natural Resources
1000 Assembly Street,
Columbia, SC 29202

RE: Duke Energy – Oconee Nuclear Station Units 1, 2, and 3 Subsequent License Renewal

Dear Mr. Marshall:

Duke Energy Carolinas, LLC (Duke Energy) is preparing an application for renewing the operating licenses for Oconee Nuclear Station Units 1, 2, and 3 (ONS) for an additional 20 years (see Table 1). Duke Energy is contacting you for assistance in assessing the impacts from continued operation during this renewed license period.

Table 1. ONS Licensing Dates

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As part of the renewal process, the U.S. Nuclear Regulatory Commission (NRC) requires that the license renewal application include an environmental report (ER) that assesses the impacts from continued operation and any refurbishment undertaken to enable the continued operation of the units. The ER addresses the potential to impact on species listed or proposed for listing as threatened or endangered in accordance with the Endangered Species Act (ESA), and important plant and animal habitats, including critical habitats as defined by the ESA and essential fish habitat as identified under the Magnuson-Stevens Fishery Conservation and Management Act.

This letter seeks input from the South Carolina Department of Natural Resources regarding such effects in the vicinity of ONS. Also, as part of the renewal process, the NRC may request a consultation with your agency regarding the license renewal. The timeframe for the NRC consultation request is anticipated to be within a few months of Duke Energy's application submittal, currently scheduled for 2021.

To facilitate our assessment and a smooth consultation by the NRC, we are contacting you early in the application process seeking input from you regarding the effects that license renewal activities may have on listed species (or candidates proposed for listing) and important plant and animal habitats within the station's environs and any questions or additional information necessary for the consultation process. Figures depicting the station site and the vicinity within a 6-mile radius of the station and a table of listed species in the station's vicinity are enclosed, and a brief discussion of the station and its operations during the extended period of operation is provided below.

The ONS site is situated on 510 acres in eastern Oconee County and western Pickens County, South Carolina (SC), approximately 8 miles northeast of Seneca, SC, on the southern shore of Lake Keowee. In accordance with NRC regulations, the transmission lines within the scope of the license renewal are those located within the ONS site boundary.

Species potentially occurring near the ONS site, or within Oconee and Pickens counties (counties occurring in a 6-mile radius of the site) that are currently federally or state listed (or proposed for listing) as threatened or endangered are included in the enclosed Table 2.

During the license renewal term, Duke Energy proposes to continue operating the units as currently operated. There are currently no ground-disturbing activities anticipated at the ONS site during the subsequent license renewal period. Currently, Duke Energy does not anticipate any refurbishment as a result of the technical and aging management program information that will be submitted in accordance with the NRC license renewal process.

Duke Energy does not anticipate the continued operation of ONS to adversely affect the environment or any cultural or historic resources.

As stated earlier, this letter seeks your input on our proposed continued operation of ONS on listed species and important habitats within the environs of the station. We appreciate your notifying us of your comments and any information you believe Duke Energy should consider in the preparation of the ER. Duke Energy plans to include this letter and any response you provide in the ER.

Should you or your staff have any questions or comments, please contact Mike Ruhe at (980) 373-3231 / Mike.Ruhe@duke-energy.com or Scott Fletcher at (980) 875-6014 / Scott.Fletcher@duke-energy.com.

Sincerely,

J. Ed Burchfield, Jr
Site Vice President
Oconee Nuclear Station

Attachments:

Table 2. Protected Species Potentially Occurring in the ONS Vicinity
Figure 1. ONS Site
Figure 2. ONS 6-mile Vicinity

Table 2. Protected Species Potentially Occurring in the ONS Vicinity

Common Name	Scientific Name	Legal Status
Mammals		
Indiana myotis	*Myotis sodalis*	FE
Northern long-eared bat	*Myotis septentrionalis*	FT
Reptiles		
Bog turtle	*Glyptemys muhlenbergii*	FT
Vascular Plants		
Dwarf-flowered heartleaf	*Hexastylis naniflora*	FT
Mountain sweet pitcherplant	*Sarracenia jonesii*	FE
Persistent trillium	*Trillium persistens*	FE
Small whorled pogonia	*Isotria medeoloides*	FT
Smooth coneflower	*Echinacea laevigata*	FE
Black-spored quillwort	*Isoetes melanospora*	FE

FE= federally endangered; FT = federally threatened

Figure 1. ONS Site

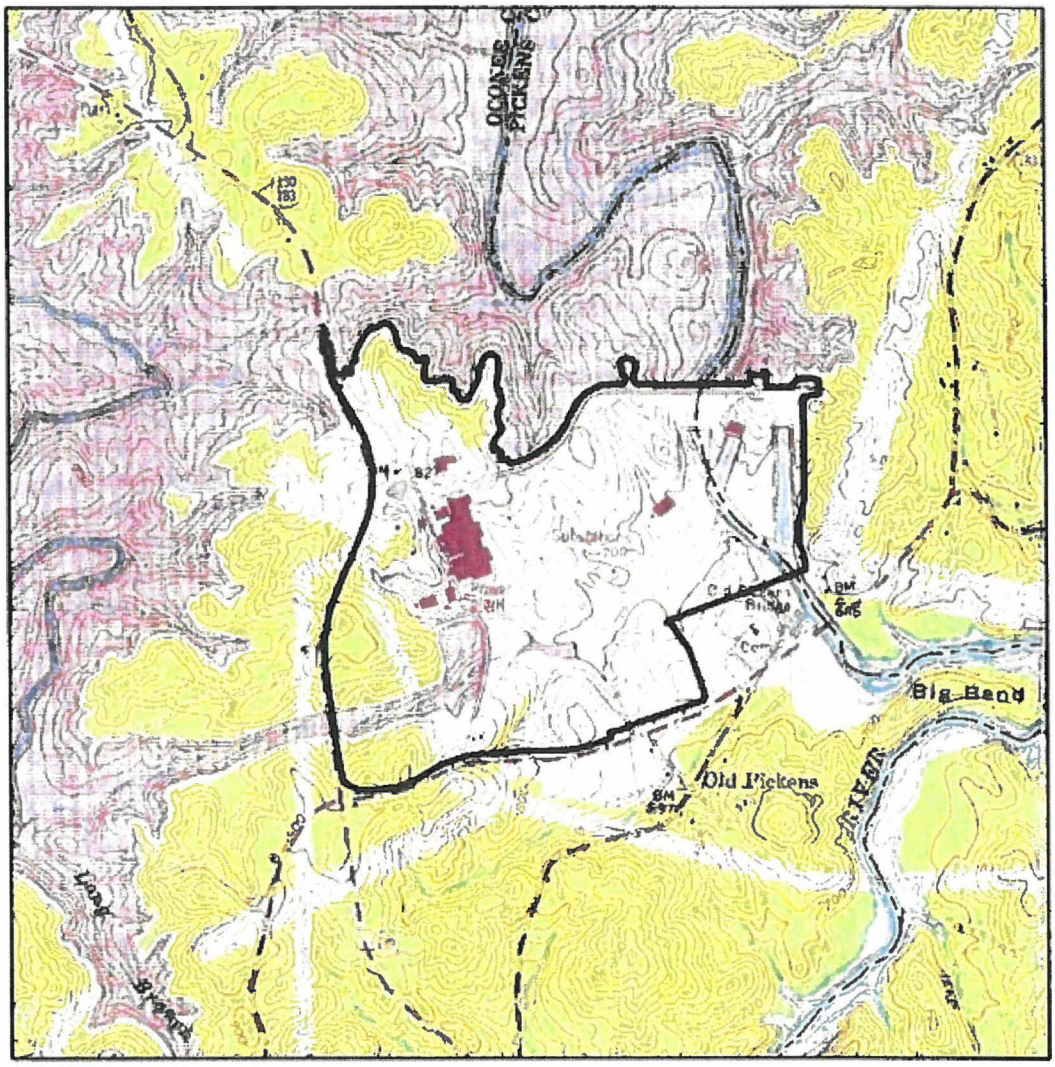
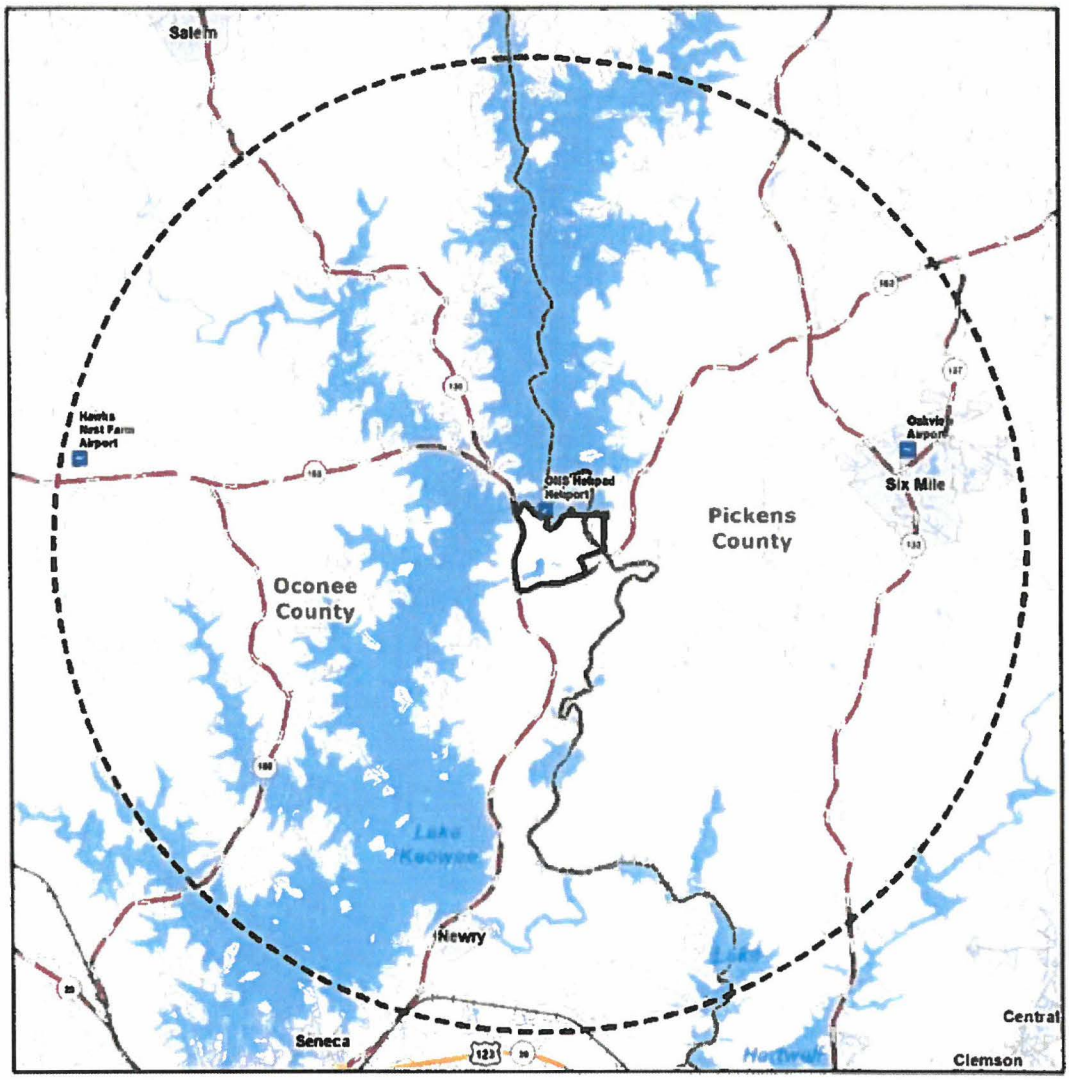


Figure 2. ONS 6-mile Vicinity



South Carolina Department of
Natural Resources

PO Box 167
Columbia, SC 29202
(803) 734-1396
HagertyJ@dnr.sc.gov

Robert H. Boyles, Jr
Interim Director

Emily C. Cope
Deputy Director for
Wildlife and Freshwater Fisheries

December 6, 2019

J. Ed Burchfield, Jr
Site Vice President- Oconee Nuclear Station
Duke Energy
7800 Rochester Hwy
Seneca, SC 29672

Electronic submission

Re: Request for Threatened and Endangered Species Review
Duke Energy Oconee Nuclear Station – Oconee/Pickens County

Dear Mr. Burchfield,

The South Carolina Department of Natural Resources has received your request for threatened and endangered species consultation for the Duke Energy Oconee Nuclear Station in Pickens County (approximately 34.793 N, -82.901° E). The project consists of a license renewal for 20 years of continued operation of nuclear station units 1, 2 and 3.. Aerial images indicate the existing project site consists of the nuclear plant and accompanied facilities, and is surrounded by wooded land, Lake Keowee and the Seneca River.

According to SCDNR data, there are no records of listed threatened and endangered species or designated critical habitat within the project footprint. Please keep in mind that this information is derived from existing databases and do not assume that it is complete. Areas not yet inventoried may contain significant species or communities.

Cavity- and tree-roosting bat species including the federally threatened northern long-eared bat (Myotis septentrionalis), state-endangered Rafinesque's big-eared bat (Corynorhinus rafinesquii), and the federally at-risk tricolored bat (Perimyotis subflavus) have been known to occur in the vicinity of Oconee and Pickens \ Counties. As a conservation measure, it is recommended that any tree clearing activities be conducted during the inactive season for Northern long-eared bat (November 15th through March 31st) to avoid negative impacts to the species. If any of the above species are found on-site, please contact the USFWS and SCDNR.

Additional species of concern are found within three miles of the project sites, including the three-parted yellow violet (*Viola tripartita var. tripartita*), bristle-leaved sedge (*Carex eburnea*), nestronia (*Nestronia umbellula*), mountain river cruiser (*Macromia margarita*, Federal at-risk species), Carlson's Polycentropus caddisfly (*Polycentropus carlsoni*), downy yellow violet (*Viola pubescens var. leiocarpon*), snail bullhead (*Ameiurus brunneus*), butternut (*Juglans cinereal*), blue monkshood (*Aconitum uncinatum*), faded trillium (*Trillium discolor*), rosyside dace (*Clinostomus funduloides*), notchlip redhorse (*Moxostoma collapsum*), fernleaf phacelia (*Phacelia bipinnatifida*), Bartram's bass (*Micropterus sp.*), flat bullhead (*Ameiurus platycephalus*), blueback herring (*Alosa aestivalis*), rosyface chub (*Hybopsis rubrifrons*), white catfish (*Ameiurus catus*), quillback (*Carpiodes cyprinus*), mottled sculpin (*Cottus bairdii*), hollow Joe-pyeweed (*Eupatorium fistulosum*), allegheny-spurge (*Pachysandra procumbens*), eastern floater (*Pyganodon cataracta*), paper pondshell (*Utterbackia imbecillis*), American ginseng (*Panax quinquefolius*), Florida pondhorn (*Uniomerus caroliniana*), turquoise darter (*Etheostoma inscriptum*), Cehauga crayfish (*Cambarus chaugaensis*), silver-haired bat (*Lasionycteris noctivagans*), and eastern red bat (*Lasiurus borealis*). The aforementioned species are designated as having conservation priority as designated through the South

Carolina State Wildlife Action Plan (SWAP). SWAP species are those species of greatest conservation need not traditionally covered under any federal funded programs. Species are listed in the SWAP because they are rare or designated as at-risk due to knowledge deficiencies; species common in South Carolina but listed rare or declining elsewhere; or species that serve as indicators of detrimental environmental conditions. SCDNR recommends that appropriate measures should be taken to minimize or avoid impacts to the aforementioned species of concern.

Review of National Wetlands Inventory (NWI) indicate that wetlands and/or hydric soils are present within your project area. SCDNR advises that you consult with the U.S. Army Corps of Engineers (www.sac.usace.army.mil/Missions/Regulatory) to determine if jurisdictional wetlands are present and if a permit and mitigation is required for any activities impacting these areas. If jurisdiction features are present, SCDNR recommends that developed project plans avoid or minimize impacts where practicable. Additionally, a 401 Water Quality Certification may also be required from the SC Department of Health & Environmental Control. For more information, please visit their website at https://www.scdhec.gov/environment/water-quality/water-quality-certification-section-401-clean-water-act.

SCDNR offers the following comments and Best Management Practices (BMPs) regarding this project's potential impacts to natural resources:

- All necessary measures must be taken to prevent oil, tar, trash and other pollutants from entering the adjacent offsite areas/wetlands/water.
- Once the project is initiated, it must be carried to completion in an expeditious manner to minimize the period of disturbance to the environment.
- Upon project completion, all disturbed areas must be permanently stabilized with vegetative cover (preferable), riprap or other erosion control methods as appropriate.
- The project must be in compliance with any applicable floodplain, stormwater, land disturbance, shoreline management guidance or riparian buffer ordinances.
- Prior to beginning any land disturbing activity, appropriate erosion and siltation control measures (e.g. silt fences or barriers) must be in place and maintained in a functioning capacity until the area is permanently stabilized.
- Ensuring the repair of all ineffective temporary erosion control measures within 24 hours of identification, or as soon as conditions allow if compliance with this time frame would result in greater environmental impacts.
- Land disturbing activities must avoid encroachment into any wetland areas (outside the permitted impact area). Wetlands that are unavoidably impacted must be appropriately mitigated.
- If clearing must occur, riparian vegetation within wetlands and waters of the U.S. must be conducted manually and low growing, woody vegetation and shrubs must be left intact to maintain bank stability and reduce erosion.
- Construction activities must avoid and minimize, to the greatest extent practicable, disturbance of woody shoreline vegetation within the project area. Removal of vegetation should be limited to only what is necessary for construction of the proposed structures.
- Where necessary to remove vegetation, supplemental plantings should be installed following completion of the project. These plantings should consist of appropriate native species for this ecoregion.

These technical comments are submitted to speak to the general impacts of the activities as described through inquiry by parties outside the South Carolina Department of Natural Resources. These technical comments are submitted as guidance to be considered and are not submitted as final agency comments that might be related to any unspecified local, state or federal permit, certification or license applications that may be needed by any applicant or their contractors, consultants or agents presently under review or not yet made available for public review. In accordance with its policy 600.01, Comments on Projects Under Department Review, the South Carolina Department of Natural Resources, reserves the right to comment on any permit, certification or license application that may be published by any regulatory agency which may incorporate, directly or by reference, these technical comments.

Interested parties are to understand that SCDNR may provide a final agency positon to regulatory agencies if any local, state or federal permit, certification or license applications may be needed by any applicant or their contractors, consultants or agents. For further information regarding comments and input from SCDNR on your project, please contact our Office of Environmental Programs by emailing environmental@dnr.sc.gov or visiting www.dnr.sc.gov/environmental.

Thank you for the opportunity to review this project and provide comments. Please feel free to contact Joseph Lemeris via email at LemerisJ@dnr.sc.gov or via phone at 803-734-1396 regarding needs for additional information.

Sincerely,

James Hagerty
Heritage Trust Program
SC Department of Natural Resources

DUKE ENERGY.

J. Ed Burchfield, Jr.
Vice President
Oconee Nuclear Station

Duke Energy
ON01VP | 7800 Rochester Hwy
Seneca, SC 29672
o 864.873.3478
f 864.873.5791
Ed.Burchfield@duke-energy.com

BY U.S. MAIL
RETURN RECEIPT REQUESTED

November 11, 2019

Thomas McCoy
U.S. Fish and Wildlife Service
176 Croghan Spur Road
Suite 200
Charleston, SC 29407

RE: Duke Energy – Oconee Nuclear Station Units 1, 2, and 3 Subsequent License Renewal

Dear Mr. McCoy:

Duke Energy Carolinas, LLC (Duke Energy) is preparing an application for renewing the operating licenses for Oconee Nuclear Station Units 1, 2, and 3 (ONS) for an additional 20 years (see Table 1). Duke Energy is contacting you for assistance in assessing the impacts from continued operation during this renewed license period.

Table 1. ONS Licensing Dates

ONS Unit	License Expiration Date	Extended License Expiration Date
Unit 1	February 6, 2033	February 6, 2053
Unit 2	October 6, 2033	October 6, 2053
Unit 3	July 19, 2034	July 19, 2054

As part of the renewal process, the U.S. Nuclear Regulatory Commission (NRC) requires that the license renewal application include an environmental report (ER) that assesses the impacts from continued operation and any refurbishment undertaken to enable the continued operation of the units. The ER addresses the potential to impact on species listed or proposed for listing as threatened or endangered in accordance with the Endangered Species Act (ESA), and important plant and animal habitats, including critical habitats as defined by the ESA and

essential fish habitat as identified under the Magnuson-Stevens Fishery Conservation and Management Act.

This letter seeks input from the U.S. Fish and Wildlife Service (USFWS) regarding such effects in the vicinity of ONS. Also, as part of the renewal process, the NRC may request a consultation with your agency regarding the license renewal. The timeframe for the NRC consultation request is anticipated to be within a few months of Duke Energy's application submittal, currently scheduled for 2021.

To facilitate our assessment and a smooth consultation by the NRC, we are contacting you early in the application process seeking input from you regarding the effects that license renewal activities may have on listed species (or candidates proposed for listing) and important plant and animal habitats within the station's environs and any questions or additional information necessary for the consultation process. Figures depicting the station site and the vicinity within a 6-mile radius of the station and a table of listed species in the station's vicinity are enclosed, and a brief discussion of the station and its operations during the extended period of operation is provided below.

The ONS site is situated on 510 acres in eastern Oconee County and western Pickens County, South Carolina (SC), approximately 8 miles northeast of Seneca, SC, on the southern shore of Lake Keowee (see Figure 2). In accordance with NRC regulations, the overhead transmission lines within the scope of the license renewal are those located within the ONS site boundary.

Species potentially occurring near the ONS site, or within Oconee and Pickens counties (counties occurring in a 6-mile radius of the site) that are currently federally listed (or proposed for listing) as threatened or endangered are included in the enclosed Table 2.

During the license renewal term, Duke Energy proposes to continue operating the units as currently operated. There are currently no ground-disturbing activities anticipated at the ONS site during the subsequent license renewal period. Currently, Duke Energy does not anticipate any refurbishment as a result of the technical and aging management program information that will be submitted in accordance with the NRC license renewal process.

Duke Energy does not anticipate the continued operation of ONS to adversely affect the environment or any cultural or historic resources.

As stated earlier, this letter seeks your input on our proposed continued operation of ONS on listed species and important habitats within the environs of the station. We appreciate your notifying us of your comments and any information you believe Duke Energy should consider in the preparation of the ER. Duke Energy plans to include this letter and any response you provide in the ER.

Should you or your staff have any questions or comments, please contact Scott Fletcher at (980) 875-6014 / scott.fletcher@duke-energy.com.

Sincerely,

J. Ed Burchfield, Jr
Site Vice President
Oconee Nuclear Station

Attachments:

Table 2. Protected Species Potentially Occurring in the ONS Vicinity
Figure 1. ONS Site
Figure 2. ONS 6-mile Vicinity

Table 2. Protected Species Potentially Occurring in the ONS Vicinity

Common Name	Scientific Name	Legal Status
Mammals		
Northern long-eared bat	*Myotis septentrionalis*	FT
Reptiles		
Bog turtle	*Glyptemys muhlenbergii*	FT
Vascular Plants		
Dwarf-flowered heartleaf	*Hexastylis naniflora*	FT
Mountain sweet pitcherplant	*Sarracenia jonesii*	FE
Persistent trillium	*Trillium persistens*	FE
Small whorled pogonia	*Isotria medeoloides*	FT
Smooth coneflower	*Echinacea laevigata*	FE
Black-spored quillwort	*Isoetes melanospora*	FE

FE= federally endangered; FT = federally threatened

Figure 1. ONS Site

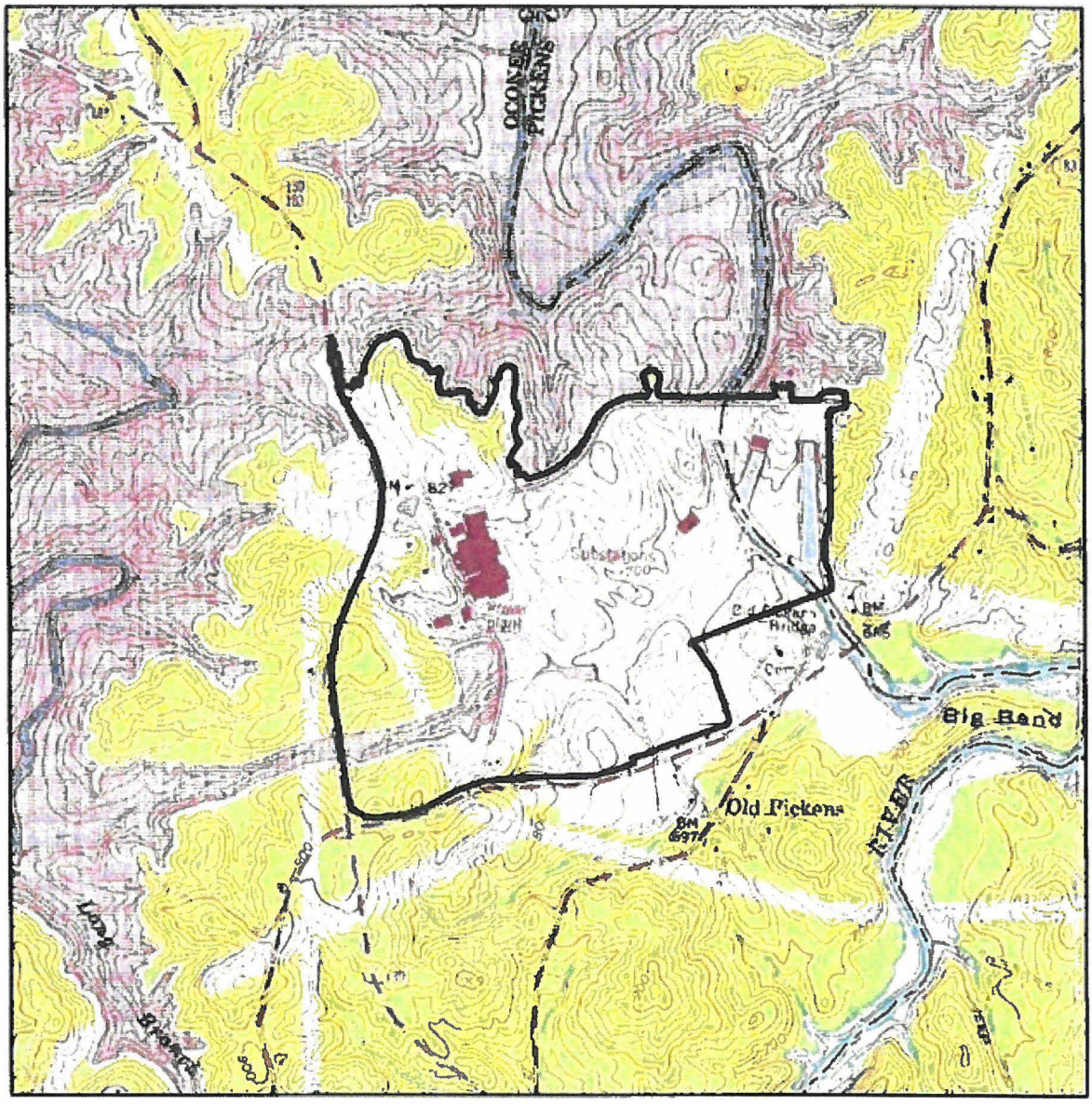
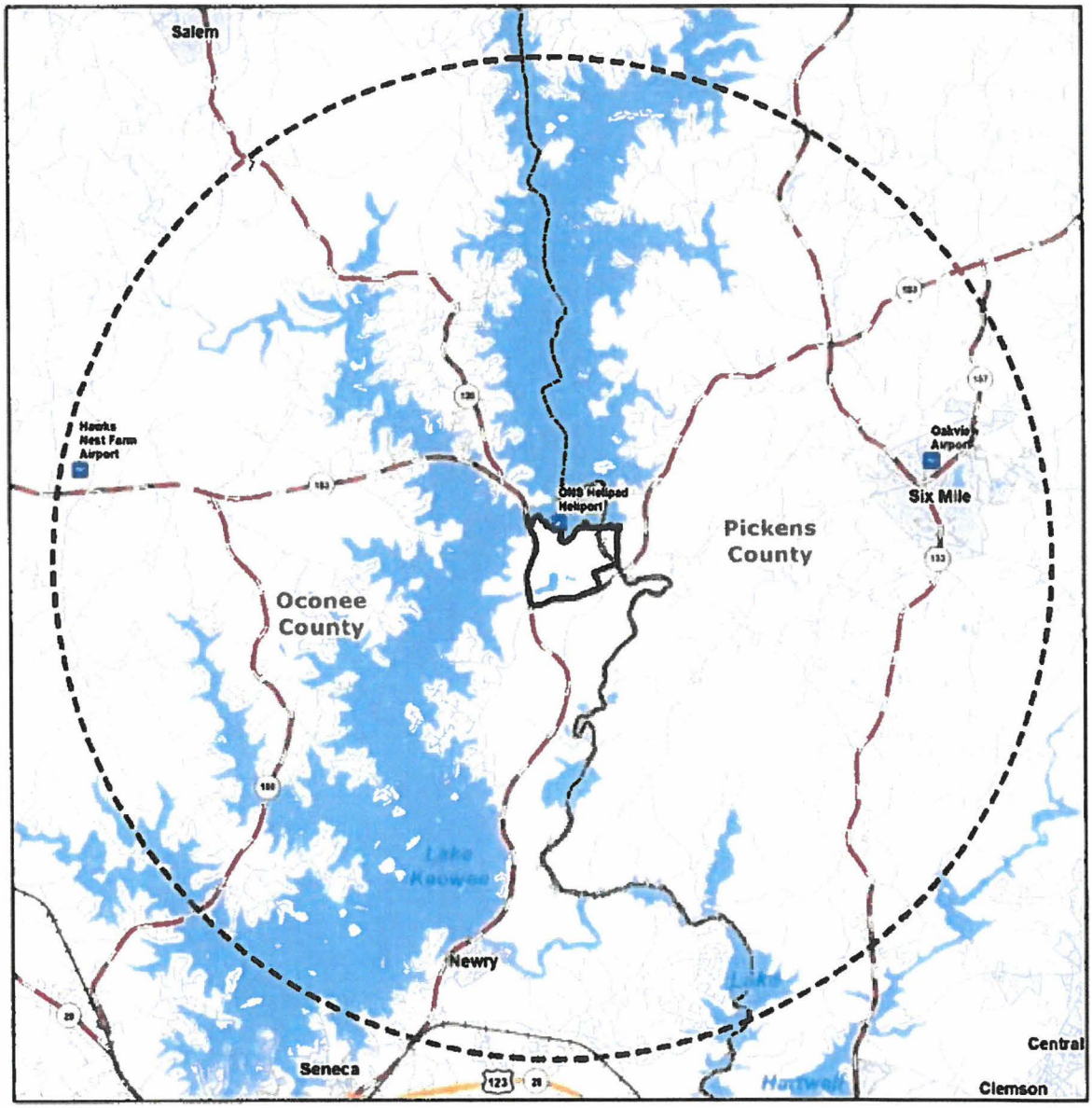


Figure 2. ONS 6-mile Vicinity



United States Department of the Interior

FISH AND WILDLIFE SERVICE
176 Croghan Spur Road, Suite 200
Charleston, South Carolina 29407

November 18, 2019

Mr. J. Ed Burchfield, Jr.
Vice President
Duke Energy
Oconee Nuclear Station
7800 Rochester Highway
Seneca, South Carolina 29672

Re: Oconee Nuclear Station Units, 1, 2, & 3, License Renewal, Oconee and Pickens Counties, South Carolina, FWS Log No. 2020-TA-0144

Dear Mr. Burchfield:

The U.S. Fish and Wildlife Service (Service) has received your request regarding the 20-year license renewal of the Oconee Nuclear Station in Oconee and Pickens Counties, South Carolina. Duke energy is preparing an application and Environmental Report for the Nuclear Regulatory Commission for the continued operation of the facility. Duke Energy does not plan to conduct any ground disturbing activities or refurbishment of structures as a part of the license renewal process. The proposal is only to continue current operations. Duke energy is seeking input from seeking the Service regarding potential impacts to protected species and habitat on or near the facility.

Duke Energy evaluated the potential occurrence of protected species within a six mile radius of the facility. As the nuclear facility is located on the Oconee and Pickens County line, consideration was given to federally protected species and habitat that may occur in both counties. Based on our review of the information received and of the project location, there are no federally protected threatened or endangered species, nor designated critical habitat for listed species, occur on or within six miles of the project site. Therefore, the Service offers no objection to the license renewal.

Due to obligations under the Endangered Species Act of 1973 (ESA) potential impacts of the license renewal must be reconsidered if: (1) new information reveals impacts of this identified action may affect any listed species or critical habitat in a manner not previously considered; (2) this action is subsequently modified in a manner, which was not considered in this assessment; or (3) a new species is listed or critical habitat is designated that may be affected by the identified action.

For informational purposes only, the Service has included a list of species that have been petitioned for listing under the ESA as well as Candidate Species. These species are collectively

referred to as "At-Risk Species" (ARS) and may occur in Oconee and Pickens Counties, South Carolina. Although there are no Federal protections afforded to ARS, please consider including them in your evaluation. Incorporating proactive measures to avoid or minimize harm to ARS may improve their status and assist with precluding the need to list these species. Additional information on ARS can be found at:

http://www.fws.gov/southeast/candidateconservation

Please contact the South Carolina Department of Natural Resources regarding potential impacts that may have occurred to State protected species. If you have any questions, you may contact Mr. Mark Caldwell at (843) 300-0426 or via email at mark_caldwell@fws.gov, and reference FWS Log No. 2020-TA-0144.

Sincerely,

Thomas D. McCoy

Thomas D. McCoy
Field Supervisor

TDM/MAC

Enclosure

OCONEE COUNTY

CATEGORY	COMMON NAME/STATUS	SCIENTIFIC NAME	SURVEY WINDOW/ TIME PERIOD	COMMENTS
Amphibians	Chamberlain's dwarf salamander (ARS)	*Eurycea chamberlaini*	Spring/Fall surveys	Breeding survey: November to February
	Green salamander (ARS)	*Aneides aeneus*	October-March	
Birds	Golden-winged warbler (ARS)	*Vermivora chrysoptera*	April-July (nesting surveys)	Spring/Fall migration; variable throughout State
Crustaceans	None Found			
Fishes	None Found			
Insects	Edmund's snaketail (ARS)	*Ophiogomphus edmundo*	Year round	Active: May-August
	Monarch butterfly (ARS)	*Danaus plexippus*	August-December	Overwinter population departs: March-April
	Smokies needlefly (ARS)	*Megaleuctra williamsae*	April-June	
Mammals	Indiana bat (E)	*Myotis sodalis*	Year round	Not a South Carolina resident
	Little brown bat (ARS)	*Myotis lucifugus*	Year round	Found in trees, rock crevices, and under bridges
	Northern long-eared bat (T)	*Myotis septentrionalis*	Year round	Winter surveys not as successful
	Tri-colored bat (ARS)	*Perimyotis subflavus*	Year round	Found in mines and caves in the winter
Mollusks	None Found			
Plants	Carolina hemlock (ARS)	*Tsuga caroliniana*	Year round	
	Georgia aster (ARS*)	*Symphyotrichum georgianum*	Early October-mid November	
	Persistent trillium (E)	*Trillium persistens*	Early March-mid April	
	Small whorled pogonia (T)	*Isotria medeoloides*	Mid May-early July	
	Smooth coneflower (E)	*Echinacea laevigata*	Late May-October	
	Sun-facing coneflower (ARS)	*Rudbeckia heliopsidis*	July-October	
Reptiles	None Found			

	Contact National Marine Fisheries Service (NMFS) for more information on this species.
*	The U.S. Fish and Wildlife Service (FWS) and NMFS share jurisdiction of this species.
RS	Species that the FWS has been petitioned to list and for which a positive 90-day finding has been issued (listing may be warranted); information is provided only for conservation actions as no Federal protections currently exist.
RS*	Species that are either former Candidate Species or are emerging conservation priority species.
GEPA	Federally protected under the Bald and Golden Eagle Protection Act
	FWS or NMFS has on file sufficient information on biological vulnerability and threat(s) to support proposals to list these species.
H	Critical Habitat
	Federally Endangered
or P – CH	Proposed for listing or critical habitat in the Federal Register
/A	Federally protected due to similarity of appearance to a listed species
	Federally Threatened

hese lists should be used only as a guideline, not as the final authority. The lists include known occurrences and areas where the species has a high possibility f occurring. Records are updated as deemed necessary and may differ from earlier lists.

or a list of State endangered, threatened, and species of concern, please visit https://www.dnr.sc.gov/species/index.html.

PICKENS COUNTY

CATEGORY	COMMON NAME/STATUS	SCIENTIFIC NAME	SURVEY WINDOW/ TIME PERIOD	COMMENTS
Amphibians	Chamberlain's dwarf salamander (ARS)	*Eurycea chamberlaini*	Spring/Fall surveys	Breeding survey: November to February
	Green salamander (ARS)	*Aneides aeneus*	October-March	
Birds	Golden-winged warbler (ARS)	*Vermivora chrysoptera*	April-July (nesting surveys)	Spring/Fall migration; variable throughout State
Crustaceans	Broad River spiny crayfish (ARS)	*Cambarus spicatus*	November-April	
Fishes	None Found			
Insects	Margaret's (Margarita) river cruiser (ARS)	*Macromia margarita*	Year round	Active: June-early August
	Monarch butterfly (ARS)	*Danaus plexippus*	August-December	Overwinter population departs: March-April
	Smokies needlefly (ARS)	*Megaleuctra williamsae*	April-June	
Mammals	Indiana bat (E)	*Myotis sodalis*	Year round	Not a South Carolina resident
	Little brown bat (ARS)	*Myotis lucifugus*	Year round	Found in trees, rock crevices, and under bridges
	Northern long-eared bat (T)	*Myotis septentrionalis*	Year round	Winter surveys not as successful
	Tri-colored bat (ARS)	*Perimyotis subflavus*	Year round	Found in mines and caves in the winter
Mollusks	None Found			
	Black-spored quillwort (E)	*Isoetes melanospora*	May-October	
Plants	Carolina hemlock (ARS)	*Tsuga caroliniana*	Year round	
	Georgia aster (ARS*)	*Symphyotrichum georgianum*	Early October-mid November	
	Mountain sweet pitcher plant (E)	*Sarracenia rubra ssp. jonesii*	April-October	
	Smooth coneflower (E)	*Echinacea laevigata*	Late May-October	
Reptiles	Bog turtle (S/A, T)	*Glyptemys muhlenbergii*	April 15-September 15	Active period

	Contact National Marine Fisheries Service (NMFS) for more information on this species.
*	The U.S. Fish and Wildlife Service (FWS) and NMFS share jurisdiction of this species.
RS	Species that the FWS has been petitioned to list and for which a positive 90-day finding has been issued (listing may be warranted); information is provided only for conservation actions as no Federal protections currently exist.
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