



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20555-0001

January 31, 2019

Mr. J. Ed Burchfield, Jr.  
Vice President, Oconee Nuclear Station  
Duke Energy Carolinas, LLC  
7800 Rochester Highway  
Seneca, SC 29672-0752

**SUBJECT: OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3 – ENVIRONMENTAL  
ASSESSMENT AND FINAL FINDING OF NO SIGNIFICANT IMPACT RELATED  
TO LICENSE AMENDMENT REQUEST NO. 2018-01 (EPID L-2018-LLA-0042)**

Dear Mr. Burchfield:

By letter ONS-2018-014 dated February 12, 2018, as supplemented by letter RA-18-0112 dated August 8, 2018, and letter RA-18-0139 dated August 23, 2018, Duke Energy Carolinas, LLC (the licensee) applied for amendments to Renewed Facility Operating License Nos. DPR-38, DPR-47, and DPR-55 for Oconee Nuclear Station, Units 1, 2, and 3 (Oconee), respectively. The licensee proposed to revise the Duke Energy Physical Security Plan for Oconee. The U.S. Nuclear Regulatory Commission (NRC) staff performed an environmental assessment (EA) as part of its review of the licensee's application. Enclosed is a copy of the NRC staff's EA and final finding of no significant impact (FONSI) for the licensee's application.

The NRC staff's EA and final FONSI are being forwarded to the Office of the Federal Register for publication.

Sincerely,

A handwritten signature in black ink, appearing to be "AK", is written over a horizontal line.

Audrey Klett, Project Manager  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-269, 50-270, and 50-289

Enclosure:  
Final Finding of No Significant Impact  
And Environmental Assessment

cc: Listserv

**ENCLOSURE**

**FEDERAL REGISTER NOTICE**

**NUCLEAR REGULATORY COMMISSION**

**[Docket Nos. 50-269, 50-270, and 50-287; NRC-2018-0199]**

**Duke Energy Carolinas, LLC**

**Oconee Nuclear Station, Units 1, 2, and 3**

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Environmental assessment and final finding of no significant impact; issuance.

**SUMMARY:** The U.S. Nuclear Regulatory Commission (NRC) is considering issuance of amendments to licenses held by Duke Energy Carolinas, LLC, (Duke Energy, the licensee) for the operation of Oconee Nuclear Station, Units 1, 2, and 3 (Oconee Nuclear Station). The proposed amendments would revise the Duke Energy Physical Security Plan for Oconee Nuclear Station to include additional protective measures during a specific infrequent short-term operating state, including a modification that provides additional access restriction. The NRC is issuing an environmental assessment (EA) and a final finding of no significant impact (FONSI) associated with the proposed license amendments.

**DATES:** The EA and final FONSI referenced in this document are available on **[INSERT DATE OF PUBLICATION]**.

**ADDRESSES:** Please refer to Docket ID **NRC-2018-0199** when contacting the NRC about the availability of information regarding this document. You may obtain publicly-available information related to this document using any of the following methods:

- **Federal Rulemaking Web Site:** Go to <http://www.regulations.gov> and search for Docket ID **NRC-2018-0199**. Address questions about NRC dockets to Jennifer Borges; telephone: 301-287-9127; e-mail: [Jennifer.Borges@nrc.gov](mailto:Jennifer.Borges@nrc.gov). For technical questions, contact the individual listed in the **FOR FURTHER INFORMATION CONTACT** section of this document.

- **NRC's Agencywide Documents Access and Management System (ADAMS):**

You may obtain publicly-available documents online in the ADAMS Public Documents collection at <http://www.nrc.gov/reading-rm/adams.html>. To begin the search, select "[ADAMS Public Documents](#)" and then select "[Begin Web-based ADAMS Search](#)." For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737, or by e-mail to [pdr.resource@nrc.gov](mailto:pdr.resource@nrc.gov). The ADAMS accession number for each document referenced (if it is available in ADAMS) is provided the first time that it is mentioned in this document. In addition, for the convenience of the reader, the ADAMS accession numbers are provided in a table in the "Availability of Documents" section of this document.

- **NRC's PDR:** You may examine and purchase copies of public documents at the NRC's PDR, Room O1-F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

**FOR FURTHER INFORMATION CONTACT:** Audrey Klett, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone: 301-415-0489; e-mail: [Audrey.Klett@nrc.gov](mailto:Audrey.Klett@nrc.gov).

**SUPPLEMENTARY INFORMATION:**

**I. Introduction**

The NRC is considering the issuance of amendments to Duke Energy for Renewed Facility Operating License Nos. DPR-38, DPR-47, and DPR-55 for the operation of Oconee Nuclear Station, Units 1, 2, and 3, respectively, located in Oconee County, South Carolina. Duke Energy submitted its License Amendment Request (LAR) No. 2018-01 by letter ONS-2018-014 dated February 12, 2018 (Duke Energy 2018a), as supplemented by letters RA-18-0112 dated August 8, 2018 (Duke Energy 2018b), and RA-18-0139 dated August 23, 2018 (Duke Energy 2018c). The licensee applied for changes to the Duke Energy Physical Security Plan under the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," Section 50.90, "Application for

amendment of license, construction permit, or early site permit.” In accordance with section 51.21 of title 10 of the *Code of Federal Regulations* (10 CFR), the NRC prepared the following EA that analyzes the environmental impacts of the proposed licensing action. Based on the results of this EA, and in accordance with 10 CFR 51.31(a), the NRC has determined not to prepare an environmental impact statement for the proposed licensing action and is issuing a final FONSI.

## **II. Environmental Assessment**

### *Description of the Proposed Action*

The proposed action would revise the Duke Energy Physical Security Plan for Oconee Nuclear Station to include additional protective measures during a specific infrequent short-term operating state, including a modification that provides additional access restriction. In its application, the licensee stated that it is voluntarily proposing these changes to further increase the margin of protection for certain associated components and equipment during certain modes of operation of the Standby Shutdown Facility.

Installation of the additional protective measure would likely include placing a floating barrier on the Keowee River. The barrier would consist of multiple segments connected by cabling and anchored by concrete abutments that are cast in place. Depending upon the final design, the concrete abutments would either sit on the ground, which would require minor clearing and grading prior to installation, or be buried in the ground, which would require excavation. Duke Energy would also need to clear and grade a limited area to build a temporary access road on the east side of the Keowee River. A temporary laydown area would be created near the access road to hold formwork, rebar, spoil, and other construction-related materials and equipment. (Duke Energy 2018b)

During construction, Duke Energy (2018b) would use a rubber tire crane that is less than 100 feet (ft) (30 meters (m)) tall when fully extended, one rubber tire front end loader, one

excavator, two 10-yard dump trucks, and delivery vehicles (e.g. flatbed and concrete trucks) to complete all construction activities.

Temporarily disturbed areas from all construction activities would be less than 0.5 acre (ac) (0.2 hectare (ha)). Permanently disturbed areas associated with the abutments would be less than 0.1 ac (0.04 ha). Duke Energy would complete all construction activities within twelve weeks. Once construction is complete, the floating barrier would remain in the river, permanently attached to the abutments. (Duke Energy 2018b)

#### *Need for the Proposed Action*

Duke Energy is applying for the license amendments in accordance with 10 CFR 50.90. These amendments would further increase the margin of protection for certain associated components and equipment during certain modes of operation of the Standby Shutdown Facility.

#### *Plant Site and Environs*

Oconee Nuclear Station is located on 210 ha (510 ac) in a rural part of northwestern South Carolina. The site consists of rolling hills with several intermittent streams flowing away from the center of the site in a radial pattern. Oconee Nuclear Station is within the drainage area of the Little and Keowee Rivers, which flow southerly into the Seneca River and subsequently discharge into the main drainage course of the Savannah River. Lake Keowee is immediately north and west of the site, and the Keowee River (a tributary coming from Lake Keowee) runs through the site. The Keowee Dam, located between the Keowee River and Lake Keowee, limits the hydrological and biological connection between these two waterbodies. (NRC 1999)

The project area includes an embanked portion of the Keowee River near the headwaters of the Keowee Dam. The entire project area has been previously disturbed and is currently covered by grasses and low shrubs on the east side of the river and rip-rap on the west side of the river. Fish likely to occur within this portion of the Keowee River include

centrarchids, particularly redbreast sunfish, bluegill, and redear sunfish (FERC 2016). In addition, striped bass, a South Carolina State Conservation Species of Moderate Priority, inhabits the tailwaters of the Keowee Dam and, therefore, has the potential to occur near the project area. U.S. Fish and Wildlife Service's (FWS) National Wetlands Inventory indicates that freshwater emergent wetlands, lake wetlands, and riverine wetlands occur within the project area (FWS 2018a). Federally protected species and migratory birds may occur within the vicinity of the proposed project site, although no federally protected species are known to occur within the proposed construction site (NRC 1999, Duke Energy 2018b).

Within the vicinity of the project area, vegetated areas include patches of hardwood forests with common species such as northern red oak (*Quercus rubra*), American beech (*Fagus grandifolia*), and loblolly pine (*Pinus taeda*). Common grasses and shrubs include Japanese honeysuckle (*Lonicera japonica*), fescue (*Festuca* spp.), and broomsedge (*Andropogon virginicus*).

#### *Environmental Impacts of the Proposed Action*

##### **Radiological Impacts**

The NRC staff is conducting a safety review to determine if the process changes to the licensee's physical security plan are acceptable. With regard to potential radiological environmental impacts, if the proposed changes are acceptable, the NRC staff has concluded that the proposed action would not increase the probability or consequences of radiological accidents. Additionally, the NRC staff has concluded that the proposed changes would have no direct radiological environmental impacts. There would be no change to the types or amounts of radioactive effluents that may be released and, therefore, no change in occupational or public radiation exposure from the proposed changes. Physical changes would be limited to the construction of the floating physical barrier in the proposed action. No modifications would be made to the reactor coolant system pressure boundary, nor would the proposed action make any other physical changes to the reactor facility design, material, or construction standards.

Therefore, there are no significant radiological environmental impacts associated with the proposed action.

### **Land Use**

All construction activities would occur within an industrial area that is part of the owner controlled area of the Oconee Nuclear Station site (Duke Energy 2018b). In addition, the permanently added floating barrier and abutments would be within the owner controlled area of the Oconee Nuclear Station site. Therefore, no change to land use would be expected.

### **Visual Resources**

During construction activities, construction equipment and vehicles may be visible to the public from a nearby road (Walhalla Highway). The permanent floating barrier may be also be visible to the public from the nearby road, although it would not be as prominent as the construction equipment due to its low height. Due to the distance and trees within the surrounding area, the project area would not be in the viewshed of any residences.

The viewshed within the project area includes a few trees and natural areas but is generally dominated by industrial buildings and highly modified landscapes, such as mowed lawns and concrete dams. Therefore, the addition of construction vehicles, construction equipment, and the floating barrier would not significantly affect visual resources given that the viewshed already contains human-modified structures and is part of an industrial setting at the Oconee Nuclear Station site.

### **Air Quality**

Oconee Nuclear Station is located in Oconee County, which is designated unclassifiable/attainment for all criteria pollutants (40 CFR 81.341). During construction, earth-moving equipment, non-road vehicles, and worker and delivery vehicles would be sources of air emissions. Earth moving activities, including excavation, clearing, and compacting, would generate fugitive dust on site. However, the limited duration and size of the construction site would limit the amount of dust generated. Operation of construction equipment would emit



pollutants on site from the combustion of fuels in equipment. Based on the number of vehicles required and length of construction activities, Duke Energy (2018b) estimated that air emissions would not exceed 3.5 tons of Nitrogen Oxides (NO<sub>x</sub>) or 0.75 tons Carbon Monoxide (CO) per month during construction. Given these relatively low emission levels and the temporary nature of the construction activities (twelve weeks or less), the proposed action would not significantly affect 40 CFR 81.341.

### **Noise**

At the construction site, Duke Energy (2018b) estimated that noise levels from construction equipment would be less than 85 A-weighted decibels (dBA). Duke Energy (2018b) estimated that the noise level at the nearest sensitive noise receptor, which is a private residence located approximately 0.4 miles (mi) (0.6 kilometers (km)) northeast of the construction site, as a result of construction equipment would not exceed 38 dBA. This level is below the normal conversational level of 50 dBA and, therefore, the impact is not expected to be significant.

### **Water Resources**

No direct impacts to surface or ground water would be expected because no in-water construction would occur. Runoff from construction areas could potentially affect downstream surface water quality if not properly managed. Duke Energy (2018b) would use various chemicals, such as oils, diesel fuel, fuel oil, gasoline, and hydraulic fluid, during installation of the floating barrier and abutments. To minimize the potential for chemical and contaminants to spill or runoff into nearby waterbodies, such as the Keowee River, Duke Energy would follow several best management practices and permit requirements. For example, Duke Energy (2018b) would follow its nuclear fleet procedures that govern the control of chemicals, such as labeling and storage procedures. In addition, Duke Energy (2018b) would develop a detailed erosion and sedimentation control plan in accordance with South Carolina Department of Health and Environmental Control (SCDHEC) permitting requirements. This would include the

appropriate erosion control methods to prevent silt and sediment from reaching waterbodies during construction. To prevent potential spills from traveling into the river, chemicals and oil-filled equipment will be stored in temporary berms to contain any unintended spillage that may occur. Lastly, trained personnel will refuel equipment and worker vehicles within the site garage rather than at the project area to help ensure workers are trained to contain any unintended spills and to increase the distance between a potential spill and the river. Given the lack of direct impacts and mitigation measures and permit requirements to minimize runoff and erosion, the proposed action would not significantly impact water resources.

### **Terrestrial Resources**

Construction activities would be limited to a small area (less than 0.5 ac (0.2 ha)) and would occur in a previously disturbed habitat that is currently covered by grasses and low shrubs on the east side of the river and rip-rap on the west side of the river (Duke Energy 2018b). Once construction is complete, abutments would remain on the ground adjacent to the river. This permanent disturbance would be limited to less than 0.1 ac (0.04 ha) and would remove common or weedy grasses and shrubs (Duke Energy 2018b). Directly affected vegetation would be limited to common or non-native species, which are abundant within the region and provide relatively low-quality habitat for birds and wildlife in comparison to forests and wetland habitats. Although wetlands and riparian zones along river banks can provide important habitat for certain species, wetlands and riparian zones within the project area have been highly modified from previous disturbances.

Noise from construction activities could disturb birds and wildlife. This impact would be minor because wildlife and birds within the area would likely be tolerant of human activity given that the project area is located within an industrial site that has been in operation for decades. If noise or other activities disturb wildlife and birds, such individuals could move out of the immediate area and find adequate, similar habitat within the vicinity. Once construction activities are complete, birds and wildlife could return to the area.

The closest upland forest, which provides high quality habitat for wildlife and birds, is approximately 0.5 mi (0.8 km) from the project site (NRC 1999, Duke Energy 2018b). Given the distance to this higher quality habitat, noise and other disturbances would be negligible.

FWS's Environmental Conservation Online System (ECOS) Information for Planning and Conservation (IPaC) database indicated that the following three migratory bird species may occasionally occur within the project area (FWS 2018a):

- Bald eagle (*Haliaeetus leucocephalus*): may occur in fall;
- Eastern whip-poor-will (*Antrostomus vociferous*): may occur in spring; and
- Red-headed woodpecker (*Melanerpes erythrocephalus*): may occur in fall.

These three species are protected under the Migratory Bird Treaty Act of 1918, as amended, which makes it illegal to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird, except under the terms of a valid Federal permit. The bald eagle was previously listed as an endangered species under the Endangered Species Act, but delisted in 2007 due to an increase in population. The bald eagle continues to be protected under the Bald and Golden Eagle Protection Act of 1940, as amended.

NRC (1999) reported that migratory birds, such as bald eagles and peregrine falcons (*Falco peregrinus*), occasionally forage or rest near the Oconee Nuclear Station site for limited portions of the year. These species are not known to nest or otherwise occur within the project area (NRC 1999). The highest density of bald eagles that occur near the Oconee Nuclear Station is several miles away at the Jocassee and Bad Creek Reservoirs (NRC 1999). The closest bald eagle nests are approximately 15 miles (24 km) south and 17 miles (28 km) north of the proposed site (SCDNR 2019). It is unlikely that bald eagles or other migratory birds commonly use the project area given the minimal amount of suitable habitat within the project area and because migratory birds have only been documented as occasionally or rarely inhabiting the areas surround the site. The short construction timeframe (twelve weeks or less)

further reduces the likelihood that a migratory bird, which only occurs within the area for a limited amount of time, would occur within the project area during construction. As described above, impacts to migratory birds would be minimal given the distance from the project site to higher-quality habitat, which would reduce any noise or other activity that could cause a disturbance. In addition, Duke Energy (2018b) stated that no tree cutting would occur. Therefore, the proposed project would not result in any direct impacts to nesting habitat. Duke Energy (2018b) also stated that if construction methods changed and any tree cutting did occur, Duke Energy would follow its nuclear fleet procedures which require a natural resource evaluation be conducted prior to tree cutting. Duke Energy (2018b) would use this evaluation to determine whether it needed to conduct additional activities to comply with the Migratory Bird Treaty Act of 1918. During construction, bird collisions with construction equipment could result in increased mortality caused by the presence of tall structures, such as the rubber tire crane that is approximately 100 ft (30 m) tall when fully extended. Migratory songbirds would be most likely to collide with cranes or other equipment because of their propensity to migrate at night, their low flight altitudes, and their tendency to be trapped and disoriented by artificial light (Ogden 1996, NRC 2013). NRC (2013) reviewed bird collisions with plant structures at nuclear power plants and determined that collision rates were negligible sources of bird mortality with plants that have cooling towers 100 ft (30 m) in height. The construction equipment for this proposed action would be smaller in size and similar or smaller in height than an operating nuclear power plant; therefore, the impacts from bird collisions at the project site would be bounded by the conclusions the NRC staff reached in its review of bird collisions at operating nuclear power plants with cooling towers 100 ft (30 m) in height.

Duke Energy is not aware of any terrestrial sensitive, rare, or State-listed species known to occur near the project area due to the lack of suitable habitat (Duke Energy 2013, 2014, and 2018b). See below for a discussion of federally-listed species that could occur near the project area.

Based on the limited habitat that would be temporarily or permanently disturbed, the low-quality habitat in the project area, the lack of sensitive or rare species within the construction area, the distance to higher-quality habitats, and because any displacement of wildlife would be temporary, the NRC staff determined that the impacts on terrestrial resources would not be significant.

### **Aquatic Resources**

Construction activities are not expected to result in any direct impacts to aquatic resources, such as habitat loss, because no in-water construction activities would occur. Runoff could degrade water quality and aquatic habitats within the Keowee River. However, the NRC staff expects these impacts to be minor based on the best management practices and permit requirements discussed above to minimize erosion and runoff of contaminants.

Once construction is complete, the barrier would remain within the river and float on top of the water's surface. During periods of low flow, portions of the barrier may rest on each river bank. The floating barrier could interfere with the migration or foraging activities for aquatic species that could not travel past the barrier or that could get stuck within the barrier, especially during periods of low flow, where the barrier would rest on portions of river bank. Nonetheless, the barrier would be placed within an area of low-quality aquatic habitat that has been highly disturbed due to the operating dam, which limits the biological connection with Keowee Lake, and the artificially lined river bank. In addition, most fish would be able to travel below the floating barrier to avoid entrapment. In addition, nearly all of the fish within this portion of the river are common species (FERC 2016), and any injury, mortality, or loss of prey or foraging habitat would not be significant for the population.

The only rare, State, or federally listed species known to occur within the tailwaters of the Keowee Dam is the striped bass, which is a State Conservation Species of Moderate Priority. However, striped bass in the tailwaters of the Keowee Dam come from the stocked population downstream in Hartwell Lake and, therefore, are not naturally occurring nor self-

sustained through natural reproduction (FERC 2016). Impacts would likely be minor to this species because fish would swim below the barrier to avoid entrapment. The project area does not provide important habitat for striped bass given the human-modified embankment and because known fish species in the project area do not appear to include preferred prey for the striped bass (e.g. clupeids) (FWS 1989).

Based on the lack of in-water construction activities, the use of best management practices and permit requirements to minimize erosion and runoff, the low-quality aquatic habitat within the project area, and the ability of fish to swim below the floating barrier to avoid entrapment, impacts to aquatic resources would not be significant.

### **Special Status Species and Habitats**

Under section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 et seq.) (ESA), Federal agencies must consult with the FWS or the National Marine Fisheries Service, as appropriate, to ensure that actions the agency authorizes, funds, or carries out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat.

### **Action Area**

The implementing regulations for section 7(a)(2) of the ESA define “action area” as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action” (50 CFR 402.02). The action area effectively bounds the analysis of ESA-protected species and habitats because only species that occur within the action area may be affected by the Federal action.

For the purposes of this ESA analysis, the NRC staff considers the action area to include the project site and immediate surrounding areas, including the temporary construction access road and laydown area, the area where the abutments will be permanently placed, the portion of the Keowee River where the floating barrier would be placed, and the surrounding area where

runoff drains and activities would be audible to wildlife. The NRC staff expects all direct and indirect effects of the proposed action to be contained within these areas.

### Protected Species

The NRC staff used FWS's ECOS IPaC database to determine species that may be present in the action area. The ECOS IPaC tool identified 7 listed species with the potential to occur in the action area (FWS 2018b) (see Table 1). No federally listed fish or mussels or any candidate species, proposed species, or designated critical habitat occurs within the project area (FERC 2016, FWS 2018b).

Table 1. Federally Listed Species with Potential to Occur in the Action Area

Species	Common Name	Status <sup>(a)</sup>
<b>Mammals</b>		
<i>Myotis septentrionalis</i>	northern long-eared bat	T
<b>Reptiles</b>		
<i>Clemmys muhlenbergii</i>	bog turtle	SAT
<b>Plants</b>		
<i>Echinacea laevigata</i>	smooth coneflower	E
<i>Hexastylis naniflora</i>	dwarf-flowered heartleaf	T
<i>Isotria medeoloides</i>	small whorled pogonia	T
<i>Sarracenia rubra ssp. jonesii</i>	mountain sweet pitcher-plant	E
<i>Trillium persistens</i>	persistent trillium	E

<sup>(a)</sup> SAT = Federally listed due to similarity of appearance to another listed species, E = Federally listed as endangered, T = Federally listed as threatened at 50 CFR 17, "Endangered and threatened wildlife and plants," under the provisions of the Endangered Species Act  
Source: FWS 2018b

### Northern Long-eared Bat

The northern long-eared bat (*Myotis septentrionalis*) is listed as federally threatened (80 FR 17974, dated 04/02/15). Duke Energy (2018b) is not aware of any northern long-eared bats within the action area. During 2012 and 2013, Duke Energy conducted bat surveys for the Keowee-Toxaway relicensing project and did not observe any bats at or near Keowee Dam, along the Lake Keowee shoreline, nor within the associated islands during the ANABAT and SONOBAT acoustic surveys (Duke Energy 2015, FERC 2016). In 2015, Duke Energy (2015) conducted summer habitat surveys for the northern long-eared bat in another portion of the Oconee Nuclear Station site but did not find any evidence of suitable summer maternity habitat.

However, Duke Energy (2015) concluded that potential habitat could occur on site. Therefore, the NRC staff determined that limited potential roosting habitat for the northern long-eared bat could occur within the vicinity of the action area, including forested areas on the perimeter of the Oconee Nuclear Station site. However, the distance from the action area to potential roosting habitat indicates that construction activities would barely be audible to bats and would not disturb them. No direct impacts to roosting habitat would be expected because Duke Energy would not cut any trees during construction according to the current construction plan (Duke 2018b).

The action area does not contain important foraging habitat, which FWS defines as areas within a mature forest understory 1 to 3 m (3 to 10 ft) above the ground but below the canopy (80 FR 17974). Northern long-eared bats may occasionally forage over small forest clearings, in water, and along roads, which do occur within the project area. However, northern long-eared bats forage at night, with peak activity period within 5 hours after sunset followed by a secondary peak within 8 hours after sunset (80 FR 17974). Construction activities would not occur at night and, therefore, the proposed action would not affect bat foraging if it were to occur on or near the action area.

Based on the distance to potential roosting habitat, the lack of tree cutting, the lack of preferred foraging habitat, and because construction activities would not occur when bats forage at night, the NRC staff determined that the proposed action would have no effect on the northern long-eared bat.

#### Bog Turtle

The bog turtle (*Clemmys muhlenbergii*) is federally listed because of its similarity in appearance to the northern population of bog turtles (62 FR 59605, dated 11/04/97). A species that is listed due to similarity of appearance is not biologically endangered or threatened and is not subject to Section 7 consultation. Therefore, this species is not discussed further in this assessment.



## Plants

Five federally listed plants have the potential to occur within the action area (see Table 1). Duke Energy determined that suitable habitat for these five listed plants is confined to natural areas, or less disturbed high-quality habitat that occurs along the periphery of the Oconee Nuclear Station site (Duke Energy 2013, 2014, 2018b). The project area is 0.5 mi (0.8 ha) from the closest natural area that could contain suitable habitat for these species. The NRC staff also reviewed the habitat requirements for these species and determined that no suitable habitat occurs within the action area (NRC 1999, FWS 2018b). Given that suitable habitat does not occur within the action area, the proposed action would have no effect on any Federally listed plant species.

## ESA Effect Determination

The NRC staff concludes that the proposed action would have **no effect** on Federally endangered, threatened, or candidate species. Federal agencies are not required to consult with the FWS if they determine that an action will not affect listed species or critical habitats (FWS 2013). Thus, the ESA does not require consultation for the proposed action, and the NRC considers its obligations under ESA Section 7 to be fulfilled for the proposed action.

## **Historic and Cultural Resources**

The area of potential effect of the proposed action consists of the 0.5 ac (0.2 ha) where construction activities would occur. The area of potential effect consists of areas that have been previously disturbed. There are no National Register of Historic Places listed or eligible within the area of potential effect. Furthermore, Duke Energy is not aware of any cultural resources within the proposed construction area (Duke Energy 2018b). If the project resulted in an unexpected discovery of a cultural resource, Duke Energy would follow its nuclear fleet procedure for land disturbing activities, which requires work to halt upon the discovery of any archeological material (e.g., pottery, arrowheads, and bones). If Duke Energy identifies these items, the work is required to stop, and the workers performing the land disturbing activities are

required to immediately notify the site Environmental Field Services group. Environmental personnel are then required to engage the appropriate State agencies to determine the appropriate actions to be taken prior to resuming work activities. (Duke Energy 2018b)

Given no known historic properties and cultural resources within the area of potential effect, Duke Energy's procedures for land disturbing activities and inadvertent discovery of a cultural resource, and that construction activities would occur within previously disturbed areas, there would be no significant impacts to historic or cultural resources at Oconee Nuclear Station.

### **Socioeconomic**

Potential socioeconomic impacts from the proposed construction activities include increased demand for short-term housing and public services and increased traffic due to the temporary increase in the size of the workforce during construction. However, Duke Energy could utilize existing resources including the onsite workforce or local contractors to conduct the proposed activities. Construction activities would be limited to twelve weeks or less, and once construction is completed, no additional workforce is anticipated. Therefore, socioeconomic impacts would not be significant.

### **Environmental Justice**

The environmental justice impact analysis evaluates the potential for disproportionately high and adverse human health and environmental effects on minority and low-income populations that could result from activities associated with the proposed action. Such effects may include human health, biological, cultural, economic, or social impacts. Minority and low-income populations are subsets of the general public residing in the vicinity of Oconee Nuclear Station, and all are exposed to the same health and environmental effects generated from the proposed action.

According to the 2010 Census 6.1 percent of the population residing within a 5-mile radius of Oconee Nuclear Station identified themselves as minority (MCDCCAPS 2018).

Additionally, according to the U.S. Census Bureau's 2012-2016 American Survey 5 Year Estimates, 1,187 individuals (11.5 percent) residing within 5-miles of Oconee Nuclear Station live below the Federal poverty threshold (MCDCCAPS 2018). The 2016 Federal poverty threshold was \$24,563 for a family of four.

Based on the analysis of human health and environmental impacts presented in this environmental assessment, the NRC did not identify high and adverse human health or environmental impacts. Therefore, the NRC concludes that the proposed action would not result in disproportionately high or adverse impacts on minority and low-income populations.

#### *Alternatives to the Proposed Action*

As an alternative to the proposed action, the NRC staff considered denial of the proposed license amendments (i.e., the “no-action” alternative). Denial of the application would result in no change in current environmental conditions or impacts. However, the no-action alternative would not accomplish the need for the proposed action.

#### *Alternative Use of Resources*

There are no unresolved conflicts concerning alternative uses of available resources under the proposed action.

#### *Agencies and Persons Consulted*

The NRC staff did not enter into consultation with any other Federal or State agency regarding the environmental impact of the proposed action. However, on October 10, 2018, the NRC notified the South Carolina State officials (Ms. Susan Jenkins, Mr. David Scaturro, and Mr. Crispulo Isiminger of the South Carolina Department of Health and Environmental Control) of the proposed amendments.

### **III. Final Finding of No Significant Impact**

The licensee has requested license amendments pursuant to 10 CFR 50.90 to modify the Duke Energy Physical Security Plan for Oconee Nuclear Station to include additional protective measures during a specific infrequent short-term operating state, including a

modification that provides additional access restriction. The NRC is considering issuing the requested amendments. The proposed action would not significantly affect plant safety, would not have a significant adverse effect on the probability of an accident occurring, and would not have any significant radiological or nonradiological impacts. The environment would not be significantly affected because the proposed changes would only result in minor ground disturbing activities and occur within low-quality aquatic and terrestrial habitat, the increase in workforce would be small and temporary, and all impacts to the natural environment would be minor and confined to the Oconee Nuclear Station site. In addition, no cultural resources occur within the project area, and the proposed action would have no effect on any federally-listed species. This final FONSI incorporates by reference the EA in Section II of this notice. Therefore, the NRC concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the NRC has determined not to prepare an environmental impact statement for the proposed action.

Previous considerations regarding the environmental impacts of operating Oconee in accordance with its renewed operating licenses are described in the following document: NUREG-1437, Supplement 2, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants: Oconee Nuclear Station, Units 1, 2, and 3," Final Report, dated December 1999 (ADAMS Accession No. ML003670637).

This final FONSI and other related environmental documents may be examined and/or copied for a fee at the NRC's PDR located at One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852. Publicly-available records are also accessible online in the ADAMS Public Documents collection at <http://www.nrc.gov/reading-rm/adams.html>. Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in ADAMS should contact the NRC's PDR reference staff by telephone at 1-800-397-4209 or 301-415-4737, or by e-mail to [pdr.resource@nrc.gov](mailto:pdr.resource@nrc.gov).

#### IV. Availability of Documents

The documents identified in the following table are available to interested persons through one or more of the following methods, as indicated.

DOCUMENT	ADAMS ACCESSION NO., FEDERAL REGISTER NOTICE, OR URL ADDRESS
10 CFR Part 50. Code of Federal Regulations, Title 10, Energy, Part 50, "Domestic licensing of production and utilization facilities."	10 CFR 50
10 CFR Part 51. Code of Federal Regulations, Title 10, Energy, Part 51, "Environmental protection regulations for domestic licensing and related regulatory functions."	10 CFR 51
40 CFR 81. Code of Federal Regulations, Title 40, Protection of Environment, Part 81, "Designation of Areas for Air Quality Planning Purposes."	40 CFR 81
50 CFR 17.3. U.S. Fish and Wildlife Service. 2006. "Endangered and Threatened Wildlife and Plants; Definitions."	50 CFR 17
50 CFR Part 402. Code of Federal Regulations, Title 50, Wildlife and Fisheries, Part 402, "Interagency Cooperation—Endangered Species Act of 1973, as Amended."	50 CFR 402
62 FR 59605. U.S. Fish and Wildlife Service. Endangered and Threatened Wildlife and Plants; Final Rule to List the Northern Population of the Bog Turtle as Threatened and the Southern Population as Threatened Due to Similarity of Appearance: 62 (213): 59605-59623. November 4, 1997.	62 FR 59605 11/04/97
80 FR 17974. U.S. Fish and Wildlife Service. <i>Endangered and Threatened Wildlife and Plants; Threatened Species Status for the Northern Long-Eared Bat With 4(d) Rule</i> : 80 (63): 17974-18033. April 2, 2015.	80 FR 17974 04/02/15
Duke Energy. 2013. <i>Oconee Nuclear Station SWPPP Spoil Project Ecological Assessment Summary Report</i> . Prepared by: Duke Energy Environmental Services Water & Natural Resources, February 5, 2013 (Duke Energy 2013).	ML18225A076 08/08/18 (see Attachment 1)
Duke Energy. 2014. <i>Oconee Nuclear Station Fukushima Flex Building Project Ecological Assessment Summary Report</i> . Prepared by: Duke Energy Environmental Services Water & Natural Resources, February 5, 2013 (Duke Energy 2014).	ML18225A076 08/08/18 (see Attachment 1)
Duke Energy. 2015. <i>Listed Species Assessment for the Duke Energy Oconee Nuclear Station Independent Spent Fuel Storage Facility in Phase IX Expansion, Oconee County, South Carolina</i> . Duke Energy Corporation, July 20, 2015 (Duke Energy 2015).	ML18225A076 08/08/18 (see Attachment 1)
Duke Energy. 2018. License Amendment Request for Approval of Changes to Physical Security Plan, dated February 12, 2018 (Duke Energy 2018a).	ML18046A080 02/12/18
Duke Energy. 2018. Supplement to License Amendment Request for Approval of Changes to Physical Security Plan, August 8, 2018 (Duke Energy 2018b).	ML18225A076 08/08/18
Duke Energy. 2018. Supplement 2 to License Amendment Request for Approval of Changes to Physical Security Plan, dated August 23, 2018, (Duke Energy 2018c).	ML18239A112 08/23/18

DOCUMENT	ADAMS ACCESSION NO., FEDERAL REGISTER NOTICE, OR URL ADDRESS
<i>Oconee Nuclear Station Independent Spent Fuel Storage Facility in Phase IX Expansion, Oconee County, South Carolina.</i> Duke Energy Corporation, July 20, 2015 (Duke Energy 2015).	08/08/18 (see Attachment 1)
Duke Energy. 2018. License Amendment Request for Approval of Changes to Physical Security Plan, dated February 12, 2018 (Duke Energy 2018a).	ML18046A080 02/12/18
Duke Energy. 2018. Supplement to License Amendment Request for Approval of Changes to Physical Security Plan, August 8, 2018 (Duke Energy 2018b).	ML18225A076 08/08/18
Duke Energy. 2018. Supplement 2 to License Amendment Request for Approval of Changes to Physical Security Plan, dated August 23, 2018, (Duke Energy 2018c).	ML18239A112 08/23/18
Federal Energy Regulatory Commission. 2016. <i>Final Environmental Assessment of Hydropower License, Keowee-Toxaway Hydroelectric Project—FERC Project No. 2503-154, South Carolina and North Carolina.</i> March 2016 (FERC 2016).	<a href="https://www.ferc.gov/industries/hydropower/enviro/eis/2016/P-2503-154-EA.pdf">https://www.ferc.gov/industries/hydropower/enviro/eis/2016/P-2503-154-EA.pdf</a>
Missouri Census Data Center Circular Area Profiling System. 2018. Aggregate Census Block Group Estimates in a 5-mile radius around Oconee Nuclear Station (34.794230 Lat.; -82.898960 Long; < 5 miles) (MCDCCAPS 2018).	<a href="http://mcdc.missouri.edu/applications/capsACS.html">http://mcdc.missouri.edu/applications/capsACS.html</a>
South Carolina Department of Natural Resources. 2019. South Carolina's Bald Eagles- Nest Locations. Accessed on January 29, 2019. (SCDNR 2019).	<a href="http://www.dnr.sc.gov/wildlife/baldeagle/locations.html">http://www.dnr.sc.gov/wildlife/baldeagle/locations.html</a>
U.S. Fish and Wildlife Service. 1983-19. Species profiles: life histories and environmental requirements of coastal fishes and <i>invertebrates</i> . U.S. Fish Wildl. Serv. Biol. Rep. 82(11). U.S. Army Corps of Engineers TR EL-82-4 (FWS 1989).	ML072060572 12/01/89
U.S. Fish and Wildlife Service. Endangered Species Consultations Frequently Asked Questions, dated July 15, 2013 (FWS 2013).	ML16120A505 07/15/13
U. S. Fish and Wildlife Service. 2018. IPaC Resource List for the Oconee License Amendment Request, September 11, 2018 (FWS 2018a).	ML18270A146 09/11/18
U. S. Fish and Wildlife Service. 2018. Letter from South Carolina Ecological Services Field Office, FWS. Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project, September 26, 2018 (FWS 2018b).	ML18270A144 09/26/18
U.S. Nuclear Regulatory Commission. 1999. NUREG-1437, Supplement 2, <i>Generic Environmental Impact Statement for License Renewal of Nuclear Plants: Oconee Nuclear Station, Units 1, 2, and 3.</i> Final Report, December 1999 (NRC 1999).	ML003670637 12/31/99
U.S. Nuclear Regulatory Commission. 2013. <i>Generic Environmental Impact Statement For License Renewal Of Nuclear Plants.</i> Revision 1, Volume 1, 2, And 3. Washington, Dc: NRC. NUREG-1437, June 19, 2013 (NRC 2013).	ML13107A023 (Package) 06/30/13
Ogden LJ. 1996. <i>Collision Course: The Hazards of Lighted Structures and Windows to Migrating Birds. Fatal Light Awareness Program (FLAP).</i> Paper 3, (Ogden 1996).	<a href="http://digitalcommons.unl.edu/flap/3?utm_source=digitalcommons.unl.edu%2Fflap%2F3&amp;utm">http://digitalcommons.unl.edu/flap/3?utm_source=digitalcommons.unl.edu%2Fflap%2F3&amp;utm</a>

Dated at Rockville, Maryland, this 31<sup>st</sup> day of January, 2019.

For the Nuclear Regulatory Commission.

***/RA/***

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SUBJECT: OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3 – ENVIRONMENTAL  
ASSESSMENT AND FINAL FINDING OF NO SIGNIFICANT IMPACT RELATED  
TO LICENSE AMENDMENT REQUEST NO. 2018-01 (EPID L-2018-LLA-0042)  
DATED JANUARY 31, 2019

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Michelle Moser, NRR  
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**ADAMS Accession Nos.****Cover Letter ML18324A852****Final FONSI and EA FRN ML18324A855****\*by email**

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