



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Tennessee ES Office
446 Neal Street
Cookeville, Tennessee 38501



May 5, 2017

Mr. Allen H. Fetter
Licensing Branch 3
Division of New Reactor Licensing
Office of New Reactors
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Subject: FWS# 2017-I-0473. U.S. Nuclear Regulatory Commission - Requests for Participation in the Environmental Scoping Process and a List of Federally Protected Species Within the Area Under Evaluation for the Proposed Clinch River Nuclear Site Located in Oak Ridge, Roane County, Tennessee.

Dear Mr. Fetter:

Thank you for your correspondence dated April 20, 2017, regarding the U.S. Nuclear Regulatory Commission's (NRC) request for participation in the environmental scoping process and request for a list of federally protected species within the area under evaluation for the proposed Clinch River Nuclear Site (CRN) located in Oak Ridge, Roane County, Tennessee. The proposed action to issue an early site permit (ESP) would grant approval of a site that could be used for the future construction and operation of two (2) or more small modular reactors (SMRs). If approved, the ESP would not authorize the applicant, Tennessee Valley Authority (TVA), to begin construction of the SMRs. U.S. Fish and Wildlife Service (Service) personnel have reviewed the information submitted, and we offer the following comments.

Correspondence indicates that the proposed CRN would be located on an approximate 935 acre site on the northern bank of the Clinch River arm of Watts Bar Reservoir. Furthermore, the proposed site is located downstream of Melton Hill Dam between Clinch River Mile 14.5 and 19. The site was evaluated in the 1970's by the TVA for a breeder reactor, which resulted in some site excavation being performed. However, the breeder reactor was not completed and the site was revegetated.

To support the CRN, it would be necessary for the TVA to construct a new 69-kV underground transmission line, approximately 5-miles long, within existing right-of-ways (ROWS) for an active 500-kV overhead transmission line to connect the CRN switchyard to 69-kV transformers at the Bethel Valley Substation on the Oak Ridge Reservation (ORR). TVA would also re-route an existing 161-kV overhead transmission line to avoid the proposed new power block location. Establishment of a barge/traffic area (BTA) on the ORR just north of the CRN site would also be necessary. The BTA would encompass an inactive barge terminal that would be refurbished and roadways would be improved in order to receive and transport SMR components to the CRN site. Additionally, segments of transmission systems well beyond the CRN site would require modifications to support the proposed facility. According to the proposal, these locations are in the following counties: Franklin, Warren, White, Van Buren, Bledsoe, Rhea, Putnam, Cumberland, Roane,

Anderson, Scott, Knox, Campbell, Grainger, Hawkins, Greene, Jefferson, Hamblen, and Cocke. These modifications would include uprating, reconductoring, or rebuilding existing transmission lines. Correspondence indicates that additional ROWs would not be established, cleared, or widened to support these activities.

The proposed CRN cooling system consist of an intake system, discharge system, and an atmospheric discharge for heat. As indicated in the correspondence, a maximum of 25,608 gallons per minute (gpm) would be withdrawn from the Clinch River to make up for water lost or used via drift (8 gpm), evaporation (12,800 gpm), and blowdown (12,800 gpm). The Clinch River would receive the discharge from the blowdown.

According to the Service's IPaC database, several federally threatened and endangered species potentially occur within near proximity of the proposed CRN site, ORR (site 2 and 8), and the proposed transmission line upgrades. We have included a species list as an enclosure to this letter, which identifies a list of species that may occur near the identified action areas. The Service recommends that you evaluate the proposed project for potential direct and indirect impacts to these listed species or their habitats in compliance with section 7 of the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.). While evaluating potential impacts to these species, please also consider modification of any associated critical habitat for listed species.

While the project proponent is not required to consult on petitioned species, Section 7(a)(4) of the Endangered Species Act of 1973 does provide a mechanism for identifying and resolving potential conflicts between a proposed action and proposed species during the early planning stage. Therefore, we take this opportunity to recommend that you consider impacts to the hellbender (*Cryptobranchus alleganiensis*), petitioned for listing in FY18. There are historic records of this species occurring near the proposed site of the CRN. Additionally, there are records of the Berry Cave salamander (*Gyrinophilus gulolineatus*), which is petitioned for listing in FY19.

The Service recommends that you coordinate with the Tennessee Wildlife Resources Agency and Tennessee Department of Environment and Conservation's Natural Heritage Program to address concerns regarding state listed species. Please anticipate that a Service representative will attend the public meeting on May 15, 2017. Thank you for the opportunity to comment on the proposed action. If you have any questions regarding our comments, please contact Dustin Boles of my staff at 931/525-4984 or at dustin_boles@fws.gov.

Sincerely,



Mary E. Jennings
Field Supervisor

Enclosures as stated

Table 1. Federally listed species which may occur within near proximity of the proposed CRN and ORR sites.

Species – Common Name	Scientific Name	Federal Status	Critical Habitat Within Action Area
Alabama Lampmussel	<i>Lampsillis virescens</i>	Endangered	No
Anthony's Riversnail	<i>Athearnia anthonyi</i>	Endangered	No
Cracking Pearlymussel	<i>Hemistena lata</i>	Endangered	No
Cumberland Bean	<i>Villosa trabalis</i>	Endangered	No
Dromedary Pearlymussel	<i>Dromus dromas</i>	Endangered	No
Fanshell	<i>Cyprogenia stegaria</i>	Endangered	No
Finerayed Pigtoe	<i>Fusconaia cuneolus</i>	Endangered	No
Gray bat	<i>Myotis grisescens</i>	Endangered	No
Indiana bat	<i>Myotis sodalis</i>	Endangered	No
Northern Long-eared Bat	<i>Myotis septentrionalis</i>	Threatened	No
Orangefoot Pimpleback	<i>Plethobasus cooperianus</i>	Endangered	No
Pink Mucket	<i>Lampsillis abrupta</i>	Endangered	No
Purple Bean	<i>Villosa perpurpurea</i>	Endangered	No
Ring Pink	<i>Obovaria retusa</i>	Endangered	No
Rough Pigtoe	<i>Pleurobema plenum</i>	Endangered	No
Sheepnose Mussel	<i>Plethobasus cyphyus</i>	Endangered	No
Shiny Pigtoe	<i>Fusconaia cor</i>	Endangered	No
Snail Darter	<i>Percina tanasi</i>	Threatened	No
Spectaclecase	<i>Cumberlandia monodonta</i>	Endangered	No
Spotfin Chub	<i>Erimonax monachus</i>	Threatened	No
Turgid Blossom	<i>Epioblasma turgidula</i>	Endangered	No
Virginia Spiraea	<i>Spiraea virginiana</i>	Threatened	No
White Fringeless Orchid	<i>Platanthera integrilabia</i>	Threatened	No
White Wartyback	<i>Plethobasus cicatricosus</i>	Endangered	No

Table 2. Federally listed species which may occur within near proximity of the proposed transmission line upgrades.

Species – Common Name	Scientific Name	Federal Status	Critical Habitat Within Action Area
Anthony Riversnail	<i>Athearnia anthonyi</i>	Endangered	No
Appalachian Elktoe	<i>Alasmidonta raveneliana</i>	Endangered	No
Birdwing Pearlymussel	<i>Lemiox rimosus</i>	Endangered	No
Blackside Dace	<i>Chrosomus [= Phoxinus] cumberlandensis</i>	Threatened	No
Bluemask (Jewel) Darter	<i>Etheostoma akatulo</i>	Endangered	No
Catspaw	<i>Epioblasma obliquata obliquata</i>	Endangered	No
Chucky Madtom	<i>Noturus crypticus</i>	Endangered	Yes
Clubshell	<i>Pleurobema clava</i>	Endangered	No
Cracking Pearlymussel	<i>Hemistena lata</i>	Endangered	No
Cumberland Bean	<i>Vilosa trabalis</i>	Endangered	No
Cumberland Elktoe	<i>Alasmidonta atropurpurea</i>	Endangered	Yes
Cumberland Monkeyface	<i>Quadrula intermedia</i>	Endangered	No
Cumberland Pigtoe	<i>Pleurobema gibberum</i>	Endangered	No
Cumberland Rosemary	<i>Conradina verticillata</i>	Threatened	No
Cumberland Sandwort	<i>Arenaria cumberlandensis</i>	Endangered	No
Cumberlandian Combshell	<i>Epioblasma brevidens</i>	Endangered	Yes
Dromedary Pearlymussel	<i>Dromus dromas</i>	Endangered	No
Duskytail Darter	<i>Etheostoma percurum</i>	Endangered	No
Fanshell	<i>Cyprogenia stegaria</i>	Endangered	No
Finerayed Pigtoe	<i>Fusconaia cuneolus</i>	Endangered	No
Fluted Kidneyshell	<i>Ptychobranhus subtentum</i>	Endangered	Yes
Gray Myotis	<i>Myotis grisescens</i>	Endangered	No
Hart's-tongue Fern	<i>Asplenium scolopendrium var. americanum</i>	Threatened	No
Indiana Myotis	<i>Myotis sodalis</i>	Endangered	No
Large-flowered Skullcap	<i>Scutellaria montana</i>	Threatened	No
Laurel Dace	<i>Chrosomus saylori</i>	Endangered	Yes
Littlewing Pearlymussel	<i>Pegias fabula</i>	Endangered	No
Morefield's Leather-flower	<i>Clematis morefieldii</i>	Endangered	No
Northern Long-eared Bat	<i>Myotis septentrionalis</i>	Threatened	No
Orangefoot Pimpleback	<i>Plethobasus cooperianus</i>	Endangered	No
Oyster Mussel	<i>Epioblasma capsaeformis</i>	Endangered	Yes
Pale Lilliput	<i>Toxolasma cylindrellus</i>	Endangered	No
Palezone Shiner	<i>Notropis albizonatus</i>	Endangered	No

Pink Mucket	<i>Lampsillis abrupta</i>	Endangered	No
Price's Potato-bean	<i>Apios priceana</i>	Threatened	No
Purple Bean	<i>Vilosa perpurpurea</i>	Endangered	Yes
Rabbitsfoot	<i>Quadrula cylindrica cylindrica</i>	Threatened	No
Rayed Bean	<i>Vilosa fabalis</i>	Endangered	No
Ring Pink	<i>Obovaria retusa</i>	Endangered	No
Rough Pigtoe	<i>Pleurobema plenum</i>	Endangered	No
Rough Rabbitsfoot	<i>Quadrula cylindrica strigillata</i>	Endangered	No
Sheepnose	<i>Plethobasus cyphus</i>	Endangered	No
Shiny Pigtoe	<i>Fusconaia cor</i>	Endangered	No
Slabside Pearlymussel	<i>Pleuronaia dolabelloides</i>	Endangered	Yes
Slender Chub	<i>Erimystax cahni</i>	Threatened	No
Small Whorled Pogonia	<i>Isotria medeoloides</i>	Threatened	No
Snail Darter	<i>Percina tanasi</i>	Threatened	No
Snuffbox	<i>Epioblasma triquetra</i>	Endangered	No
Spectaclecase	<i>Cumberlandia monodonta</i>	Endangered	No
Spotfin Chub	<i>Erimonax monachus</i>	Threatened	Yes
Tan Riffleshell	<i>Epioblasma florentina walkeri</i>	Endangered	No
Virginia Spiraea	<i>Spiraea virginiana</i>	Threatened	No
White Fringeless Orchid	<i>Platanthera integrilabia</i>	Threatened	No
White Wartyback	<i>Plethobasus cicatricosus</i>	Endangered	No
Yellowfin Madtom	<i>Noturus flavipinnis</i>	Threatened	No