

Special Status Species Correspondence

Hope Creek Generating Station Environmental Report

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PSEG Nuclear LLC
P.O. Box 236, Hancocks Bridge, New Jersey 08038-0236



March 4, 2009

LR-E09-059

John Staples, Supervisor
Federal Activities and Endangered Species Program
New Jersey Field Office
U.S. Fish and Wildlife Service
927 N. Main Street, Heritage Square, Bldg D
Pleasantville, NJ 08232

SUBJECT: Salem and Hope Creek Generating Stations
Request for Information on Threatened or Endangered Species

Dear Mr. Staples:

In 2009, PSEG Nuclear plans to apply to the U.S. Nuclear Regulatory Commission (NRC) for renewal of the operating licenses for the Salem and Hope Creek Generating Stations (referred to respectively as Salem and HCGS), which are located on adjacent sites within a 740-acre parcel of property owned by PSEG Nuclear on the southern end of Artificial Island in Lower Alloways Creek Township, Salem County, New Jersey. The existing licenses for Salem Units 1 and 2 were issued for 40-year terms that expire in 2016 and 2020, respectively. The operating license for the single HCGS unit was also issued for a 40-year term that expires in 2026. License renewal would extend the operating period of each reactor for an additional 20 years.

The NRC requires that the license renewal applications for Salem and HCGS include environmental reports assessing potential environmental impacts from operation during the license renewal terms. One of these potential environmental impacts would be the effect of license renewal on threatened or endangered species located on the Salem and HCGS sites, their immediate environs, and transmission line corridors routed to connect the plants to the existing transmission system. Accordingly, the NRC requires that the environmental report for each license renewal application assess such a potential effect (10 CFR 51.53). Later, during its review of the proposed license renewal environmental reports pursuant to the National Environmental Policy Act (NEPA), the NRC will use that assessment to evaluate whether a basis exists to request consultation with your office under Section 7 of the Endangered Species Act.

95-2168 REV. 7/99

I am contacting you now in order to obtain input regarding issues that may need to be addressed in the Salem and HCGS license renewal environmental reports, and to help me identify any information your staff believes would be helpful to expedite NRC's consultation.

Beginning early in the twentieth century, Artificial Island was created by placing dredge spoils within a diked area established by the U.S. Army Corps of Engineers on the eastern shore of the Delaware River. The 1,500-acre island is low and flat with an average elevation of approximately 9 ft above mean sea level (msl) and a maximum elevation of approximately 18 ft msl. Habitat surrounding the PSEG-owned property on Artificial Island can best be characterized as tidal marsh and grassland with some upland woodland vegetation. It is low quality for wildlife and is not an important natural resource area. Artificial Island is located approximately 18 miles southeast of Wilmington, Delaware (see enclosed Figure 1). Philadelphia is about 30 miles and Salem, New Jersey, is 7.5 miles northeast of Artificial Island.

There are three transmission corridors containing four 500-kV transmission lines that connect the Salem and HCGS sites to the regional electricity grid (see enclosed Figure 2). These transmission corridors are considered by the NRC to be within the scope of its environmental reviews for the Salem and HCGS license renewals. In New Jersey, they are owned and maintained by Public Service Electric and Gas Company (PSE&G) (a subsidiary of Public Service Enterprise Group, which also owns PSEG Nuclear). In Delaware, a single line is owned and maintained by Pepco (a regulated electric utility that is a subsidiary of Pepco Holdings, Inc.). The total length of all three corridors is approximately 106 miles, which cross Camden, Gloucester, and Salem Counties in New Jersey and New Castle County in Delaware. All corridors traverse local marshland (adjacent to the Salem and HCGS sites), as well as agricultural and forested lands located away from the sites. Each corridor is 350 feet wide, except for one, which narrows to 200 feet for approximately 8 miles. One line crosses the Delaware River north of the Salem and HCGS sites and extends into Delaware.

Based on a review of information available on the New Jersey Department of Environmental Protection (NJDEP) website (county records of "rare species and natural communities"), information provided by Delaware, and previous on-site surveys, PSEG Nuclear believes that no federally- or state-listed threatened or endangered plant or animal species reside on the Salem or HCGS sites.

However, one federally-threatened plant species occurs on the Salem – New Freedom South transmission corridor (see enclosed Figure 2), and some state-listed threatened terrestrial animal species occur within Salem County and the counties crossed by the transmission corridors (see Table 1), and these species may occasionally migrate through the sites. A population of *Helonias bullata* (swamp pink) has been located between transmission towers 9/4 and 10/1, near Jericho Road in Salem County. Terrestrial animal species known to occur in the

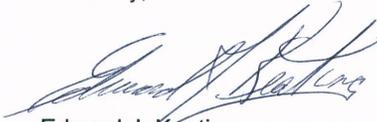
subject counties include the bald eagle, peregrine falcon, osprey, Cooper's hawk, bobolink, and grasshopper sparrow. Ospreys are known to nest on transmission towers near the sites. Also, shortnose sturgeon and five federally-listed species of sea turtles occur in the Delaware River near the Salem and HCGS sites.

PSEG Nuclear does not expect Salem or HCGS operations during the license renewal terms (an additional 20 years) to adversely affect threatened or endangered species at the station sites, the immediate environs, or the transmission line corridors because license renewal will not alter existing operations. No expansion of existing facilities is planned, and no structural modifications or other refurbishments have been identified that are necessary to support license renewal. Maintenance activities during the license renewal term would be restricted to previously disturbed areas. No additional land-disturbance or activities that would affect the Delaware River are anticipated in support of license renewal. Both PSE&G and Pepco have established maintenance procedures for transmission lines that involve minimal disturbance of land, wetlands, and streams and are unlikely to adversely affect any threatened or endangered species.

After your review of the information provided in this letter, I would appreciate your sending a letter detailing any concerns you have about potential impacts to threatened or endangered species or critical habitat in the area of the Salem and HCGS or along associated transmission corridors. PSEG Nuclear will include copies of this letter and your response in the environmental reports submitted to the NRC as part of the Salem and HCGS license renewal applications.

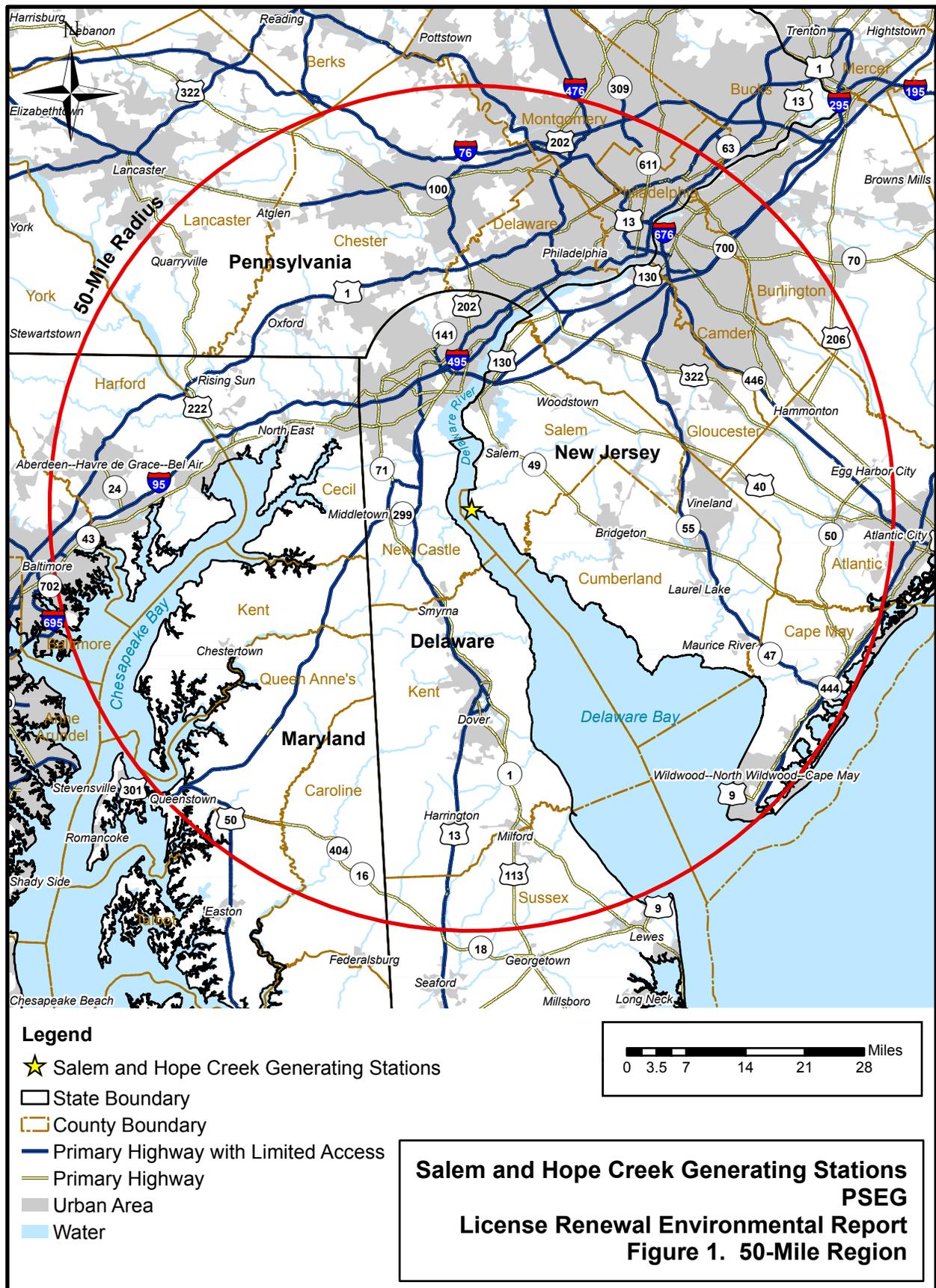
Please do not hesitate to call me at 856-339-7902, if there are questions or you need additional information to complete a review of the proposed action. Thank you in advance for your assistance.

Sincerely,



Edward J. Keating
Sr. Environmental Advisor

Enclosure: Figure 1 – 50-Mile Region
Figure 2 – Transmission lines associated with Salem and HCGS
Table 1 – Endangered and Threatened Species Recorded in Salem County and Counties Crossed by Transmission Lines



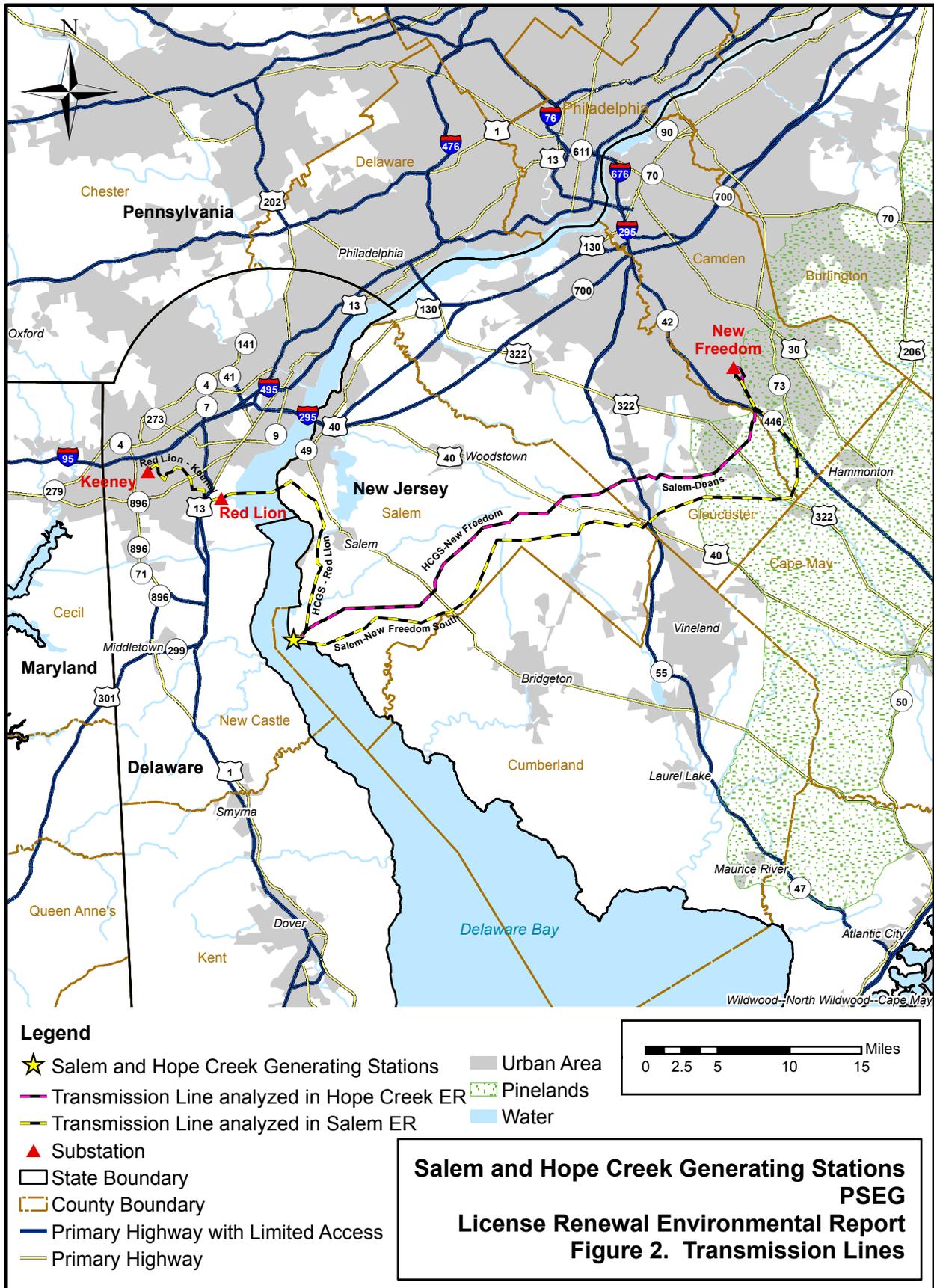


Table 1 Endangered and Threatened Species Recorded in Salem County and Counties Crossed by Transmission Lines

Scientific Name	Common Name	Status		County ^c
		Federal ^a	State ^{a,b}	
Mammals				
<i>Lynx rufus</i>	Bobcat	-	E	Salem
Birds				
<i>Accipiter cooperii</i>	Cooper's hawk	-	T/T	Gloucester, Salem
<i>Ammodramus henslowii</i>	Henslow's sparrow	-	E	Gloucester
<i>A. savannarum</i>	Grasshopper sparrow	-	T/S	Salem
<i>Bartramia longicauda</i>	Upland sandpiper	-	E	Gloucester, Salem
<i>Buteo lineatus</i>	Red-shouldered hawk	-	E/T	Gloucester
<i>Circus cyaneus</i>	Northern harrier	-	E/U	Salem
<i>Cistothorus platensis</i>	Sedge wren	-	E	Salem
<i>Dolichonyx oryzivorus</i>	Bobolink	-	T/T	Salem
<i>Falco peregrinus</i>	Peregrine falcon	-	E	Camden, Gloucester, Salem
<i>Haliaeetus leucocephalus</i>	Bald eagle	-	E	Gloucester, Salem
<i>Melanerpes erythrocephalus</i>	Red-headed woodpecker	-	T/T	Camden, Gloucester, Salem
<i>Pandion haliaetus</i>	Osprey	-	T/T	Gloucester, Salem
<i>Passerculus sandwichensis</i>	Savannah sparrow	-	T/T	Salem
<i>Podilymbus podiceps</i>	Pied-billed grebe	-	E/S	Salem
<i>Pooecetes gramineus</i>	Vesper sparrow	-	E	Gloucester, Salem
<i>Strix varia</i>	Barred owl	-	T/T	Gloucester, Salem
Reptiles and Amphibians				
<i>Ambystoma tigrinum tigrinum</i>	Eastern tiger salamander	-	E	Gloucester, Salem
<i>Clemmys insculpta</i>	Wood turtle	-	E	Gloucester
<i>C. muhlenbergii</i>	Bog turtle	T	E	Camden, Gloucester, Salem
<i>Crotalus horridus horridus</i>	Timber rattlesnake	-	E	Camden
<i>Hyla andersoni</i>	Pine barrens treefrog	-	E	Camden, Gloucester, Salem
<i>Pituophis melanoleucus</i>	Northern pine snake	-	T	Camden, Gloucester, Salem
<i>Caretta caretta</i>	Loggerhead sea turtle	T	E	Delaware River ^d
<i>Lepidochelys kempi</i>	Kemp's ridley	E	E	Delaware River ^d
<i>Dermodochelys coriacea</i>	Leatherback turtle	E	E	Delaware River ^d
<i>Eretmochelys imbricata</i>	Hawksbill turtle	E	E	Delaware River ^d
<i>Chelonia mydas</i>	Atlantic green turtle	T	T	Delaware River ^d
Fish				
<i>Acipenser brevirostrum</i>	Shortnose sturgeon	E	E	Delaware River ^d
<i>A. oxyrinchus oxyrinchus</i>	Atlantic sturgeon	C	-	Delaware River ^d
Insects				
<i>Nicrophorus americanus</i>	American burying beetle	E	E	Camden, Gloucester

Table 1 Endangered and Threatened Species Recorded in Salem County and Counties Crossed by Transmission Lines (Continued)

Scientific Name	Common Name	Status		County ^c
		Federal ^a	State ^{a,b}	
Plants				
<i>Aeschynomene virginica</i>	Sensitive joint vetch	T	E	Camden, Gloucester, Salem
<i>Aplectrum hyemale</i>	Putty root	-	E	Gloucester
<i>Aristida lanosa</i>	Woolly three-awn grass	-	E	Camden, Salem
<i>Asimina triloba</i>	Pawpaw	-	E	Gloucester
<i>Aster radula</i>	Low rough aster	-	E	Camden, Gloucester, Salem
<i>Bouteloua curtipendula</i>	Side oats grama grass	-	E	Gloucester
<i>Cacalia atriplicifolia</i>	Pale Indian plantain	-	E	Camden, Gloucester
<i>Calystegia spithamea</i>	Erect bindweed	-	E	Camden, Salem
<i>Cardamine longii</i>	Long's bittercress	-	E	Gloucester
<i>Carex aquatilis</i>	Water sedge	-	E	Camden
<i>C. bushii</i>	Bush's sedge	-	E	Camden
<i>C. cumulata</i>	Clustered sedge	-	E	Camden
<i>C. limosa</i>	Mud sedge	-	E	Gloucester
<i>C. polymorpha</i>	Variable sedge	-	E	Gloucester
<i>Castanea pumila</i>	Chinquapin	-	E	Gloucester, Salem
<i>Cercis canadensis</i>	Redbud	-	E	Camden
<i>Chenopodium rubrum</i>	Red goosefoot	-	E	Camden
<i>Commelina erecta</i>	Slender dayflower	-	E	Camden
<i>Cyperus lancastris</i>	Lancaster flat sedge	-	E	Camden, Gloucester
<i>C. polystachyos</i>	Coast flat sedge	-	E	Salem
<i>C. pseudovegetus</i>	Marsh flat sedge	-	E	Salem
<i>C. retrofractus</i>	Rough flat sedge	-	E	Camden, Gloucester
<i>Dalibarda repens</i>	Robin-run-away	-	E	Gloucester
<i>Diodia virginiana</i>	Larger buttonweed	-	E	Camden
<i>Draba reptans</i>	Carolina Whitlow-grass	-	E	Camden, Gloucester
<i>Eleocharis melanocarpa</i>	Black-fruit spike-rush	-	E	Salem
<i>E. equisetoides</i>	Knotted spike-rush	-	E	Gloucester
<i>E. tortilis</i>	Twisted spike-rush	-	E	Gloucester
<i>Elephantopus carolinianus</i>	Carolina elephant-foot	-	E	Gloucester, Salem
<i>Eriophorum gracile</i>	Slender cotton-grass	-	E	Gloucester
<i>E. tenellum</i>	Rough cotton-grass	-	E	Camden, Gloucester
<i>Eupatorium capillifolium</i>	Dog fennel thoroughwort	-	E	Camden
<i>E. resinsum</i>	Pine barren boneset	-	E	Camden, Gloucester,
<i>Euphorbia purpurea</i>	Darlington's glade spurge	-	E	Salem

Table 1 Endangered and Threatened Species Recorded in Salem County and Counties Crossed by Transmission Lines (Continued)

Scientific Name	Common Name	Status		County ^c
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<i>Glyceria grandis</i>	American manna grass	-	E	Camden
<i>Gnaphalium helleri</i>	Small everlasting	-	E	Camden
<i>Gymnopogon brevifolius</i>	Short-leaf skeleton grass	-	E	Gloucester
<i>Helonias bullata</i>	Swamp-pink	T	E	Camden, Gloucester, Salem
<i>Hemicarpha micrantha</i>	Small-flower halfchaff sedge	-	E	Camden
<i>Hottonia inflata</i>	Featherfoil	-	E	Salem
<i>Hydrastis canadensis</i>	Golden seal	-	E	Camden
<i>Hydrocotyle ranunculoides</i>	Floating marsh-pennywort	-	E	Salem
<i>Hypericum adpressum</i>	Barton's St. John's-wort	-	E	Salem
<i>Juncus caesariensis</i>	New Jersey rush	-	E	Camden
<i>J. torreyi</i>	Torrey's rush	-	E	Camden
<i>Kuhnia eupatorioides</i>	False boneset	-	E	Camden
<i>Lemna perpusilla</i>	Minute duckweed	-	E	Camden, Salem
<i>Limosella subulata</i>	Awl-leaf mudwort	-	E	Camden
<i>Linum intercursum</i>	Sandplain flax	-	E	Camden, Salem
<i>Luzula acuminata</i>	Hairy wood-rush	-	E	Gloucester, Salem
<i>Melanthium virginicum</i>	Virginia bunchflower	-	E	Camden, Gloucester, Salem
<i>Micranthemum micranthemoides</i>	Nuttall's mudwort	-	E	Camden, Gloucester
<i>Muhlenbergia capillaris</i>	Long-awn smoke grass	-	E	Gloucester
<i>Myriophyllum tenellum</i>	Slender water-milfoil	-	E	Camden
<i>M. pinnatum</i>	Cut-leaf water-milfoil	-	E	Salem
<i>Nelumbo lutea</i>	American lotus	-	E	Camden, Salem
<i>Nuphar microphyllum</i>	Small yellow pond-lily	-	E	Camden
<i>Onosmodium virginianum</i>	Virginia false-gromwell	-	E	Camden, Gloucester, Salem
<i>Ophioglossum vulgatum pycnostichum</i>	Southern adder's tongue	-	E	Salem
<i>Panicum aciculare</i>	Bristling panic grass	-	E	Gloucester
<i>Penstemon laevigatus</i>	Smooth beardtongue	-	E	Gloucester
<i>Plantago pusilla</i>	Dwarf plantain	-	E	Camden
<i>Platanthera flava flava</i>	Southern rein orchid	-	E	Camden
<i>Pluchea foetida</i>	Stinking fleabane	-	E	Camden
<i>Polemonium reptans</i>	Greek-valerian	-	E	Salem
<i>Polygala incarnata</i>	Pink milkwort	-	E	Camden, Gloucester

Table 1 Endangered and Threatened Species Recorded in Salem County and Counties Crossed by Transmission Lines (Continued)

Scientific Name	Common Name	Status		County ^c
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<i>Prunus angustifolia</i>	Chickasaw plum	-	E	Camden, Gloucester, Salem
<i>Pycnanthemum clinopodioides</i>	Basil mountain mint	-	E	Camden
<i>P. torrei</i>	Torrey's mountain mint	-	E	Gloucester
<i>Quercus imbricaria</i>	Shingle oak	-	E	Gloucester
<i>Q. lyrata</i>	Overcup oak	-	E	Salem
<i>Rhododendron atlanticum</i>	Dwarf azalea	-	E	Salem
<i>Rhynchospora globularis</i>	Coarse grass-like beaked-rush	-	E	Camden, Gloucester, Salem
<i>R. knieskernii</i>	Knieskern's beaked-rush	T	E	Camden
<i>Sagittaria teres</i>	Slender arrowhead	-	E	Camden
<i>Scheuchzeria palustris</i>	Arrow-grass	-	E	Camden, Gloucester
<i>Schwalbea americana</i>	Chaffseed	E	E	Camden
<i>Scirpus longii</i>	Long's woolgrass	-	E	Camden
<i>S. maritimus</i>	Saltmarsh bulrush	-	E	Camden
<i>Scutellaria leonardii</i>	Small skullcap	-	E	Salem
<i>Spiranthes laciniata</i>	Lace-lip ladies' tresses	-	E	Gloucester
<i>Stellaria pubera</i>	Star chickweed	-	E	Camden
<i>Triadenum walteri</i>	Walter's St. John's wort	-	E	Camden
<i>Utricularia biflora</i>	Two-flower bladderwort	-	E	Gloucester, Salem
<i>Valerianella radiata</i>	Beaked cornsalad	-	E	Gloucester
<i>Verbena simplex</i>	Narrow-leaf vervain	-	E	Camden, Gloucester
<i>Vernonia glauca</i>	Broad-leaf ironweed	-	E	Gloucester, Salem
<i>Vulpia ellioatea</i>	Squirrel-tail six-weeks grass	-	E	Camden, Gloucester, Salem
<i>Wolffiella floridana</i>	Sword bogmat	-	E	Salem
<i>Xyris fimbriata</i>	Fringed yellow-eyed grass	-	E	Camden

- a. E = Endangered; T = Threatened; C = Candidate; - = Not listed.
- b. State status for birds separated by a slash (/) indicates a dual status. First status refers to the state breeding population, and the second status refers to the migratory or winter population. S = Stable species (a species whose population is not undergoing any long-term increase or decrease within its natural cycle); U = Undetermined (a species about which there is not enough information available to determine the status) (NJDEP 2008b).
- c. Source of county occurrence: USFWS (undated); NJDEP (2008a); (NJDEP (2008c).
- d. Sea turtles and sturgeon were not included in county lists maintained by USFWS (undated) and NJDEP (2008a), but are known by PSEG to occur in the Delaware River (see text).

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PSEG Nuclear LLC
P.O. Box 236, Hancocks Bridge, New Jersey 08038-0236



March 4, 2009

LR-E09-055

Mary Colligan, Assistant Regional Administrator
Protected Resources Division
National Marine Fisheries Service
One Blackburn Drive
Gloucester, MA 01930

SUBJECT: Salem and Hope Creek Generating Stations
Request for Information on Threatened or Endangered Species

Dear Ms. Colligan:

In 2009, PSEG Nuclear plans to apply to the U.S. Nuclear Regulatory Commission (NRC) for renewal of the operating licenses for the Salem and Hope Creek Generating Stations (referred to respectively as Salem and HCGS), which are located on adjacent sites within a 740-acre parcel of property owned by PSEG Nuclear on the southern end of Artificial Island in Lower Alloways Creek Township, Salem County, New Jersey. The existing licenses for Salem Units 1 and 2 were issued for 40-year terms that expire in 2016 and 2020, respectively. The operating license for the single HCGS unit was also issued for a 40-year term that expires in 2026. License renewal would extend the operating period of each reactor for an additional 20 years.

The NRC requires that the license renewal applications for Salem and HCGS include environmental reports assessing potential environmental impacts from operation during the renewal terms. One of these potential environmental impacts would be the effect of license renewal activities on threatened or endangered species located on the Salem and HCGS sites, their immediate environs, and transmission line corridors connecting the plants to the existing transmission system. Accordingly, the NRC requires that the environmental report for each license renewal application assess such a potential effect (10 CFR 51.53). Later, during its review of the license renewal environmental reports pursuant to the National Environmental Policy Act (NEPA), the NRC will use that assessment to evaluate whether a basis exists to request consultation with your office under Section 7 of the Endangered Species Act.

95-2168 REV. 7/99

I am contacting you now in order to obtain input regarding issues that may need to be addressed in the Salem and HCGS license renewal environmental reports, and to help me identify any information your staff believes would be helpful to expedite NRC's consultation.

Beginning early in the twentieth century, Artificial Island was created by placing dredge spoils within a diked area established by the U.S. Army Corps of Engineers on the eastern shore of the Delaware River. The 1,500-acre island is low and flat with an average elevation of approximately 9 ft above mean sea level (msl) and a maximum elevation of approximately 18 ft msl. Habitat surrounding the PSEG-owned property on Artificial Island can best be characterized as tidal marsh and grassland with some upland woodland vegetation. It is low quality for wildlife and is not an important natural resource area. Artificial Island is located approximately 18 miles southeast of Wilmington, Delaware (see enclosed Figure 1). Philadelphia is about 30 miles and Salem, New Jersey, is 7.5 miles northeast of Artificial Island.

There are three transmission corridors containing four 500-kV transmission lines that connect the Salem and HCGS sites to the regional electricity grid (see enclosed Figure 2). These transmission corridors are considered by the NRC to be within the scope of its environmental reviews for the Salem and HCGS license renewals. In New Jersey, the lines are owned and maintained by Public Service Electric and Gas Company (PSE&G) (a subsidiary of Public Service Enterprise Group, which also owns PSEG Nuclear). In Delaware, a single line is owned and maintained by Pepco (a regulated electric utility that is a subsidiary of Pepco Holdings, Inc.). The total length of all three corridors is approximately 106 miles, which cross Camden, Gloucester, and Salem Counties in New Jersey and New Castle County in Delaware. All corridors traverse local marshland (adjacent to the Salem and HCGS sites), as well as agricultural and forested lands located away from the sites. Each corridor is 350 feet wide, except for one, which narrows to 200 feet for approximately 8 miles.

Based on a review of information available on the New Jersey Department of Environmental Protection (NJDEP) website (county records of "rare species and natural communities"), information provided by Delaware, and previous on-site surveys, PSEG Nuclear believes that no federally- or state-listed threatened or endangered plant or animal species resides on the Salem or HCGS sites.

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Jericho Road in Salem County. Terrestrial animal species known to occur in the subject counties include the bald eagle, peregrine falcon, osprey, Cooper's hawk, bobolink, and grasshopper sparrow. Ospreys are known to nest on transmission towers near the sites. Also, shortnose sturgeon and five species of federally-listed sea turtles are known to occur in the Delaware River near the Salem and HCGS sites.

Both Salem and HCGS withdraw cooling and service water from the Delaware River through intake systems with trash racks, traveling screens, and fish return systems. A biological opinion prepared by the National Marine Fisheries Service (NMFS) in 1993 following consultation with the NRC addressed the impacts of operating the Salem and HCGS intake structures on shortnose sturgeon (*Acipenser brevirostrum*) and on Kemp's ridley (*Lepidochelys kempii*), loggerhead (*Caretta caretta*), and Atlantic green (*Chelonia mydas*) sea turtles. The biological opinion contained an Incidental Take Statement (updated in 1999) authorizing the incidental taking of these four species and specifying measures necessary to minimize impacts of the Salem intake structures on sea turtles. The NMFS anticipated that, annually, five shortnose sturgeon, five Kemp's ridley, five Atlantic green, and 30 loggerhead sea turtles could be taken during operation of Salem. The incidental take is expected to be in the form of injuries and mortalities. Lethal take limits for these species are five shortnose sturgeon, one Kemp's ridley, two Atlantic green, and five loggerhead sea turtles. PSEG continues to operate Salem in accordance with the terms and conditions of the 1993 Biological Opinion and updated Incidental Take Statement.

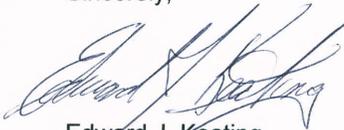
Eighteen sturgeon have been captured at Salem and HCGS since monitoring was initiated (1978 - 2007). Although five sea turtle species occur in the Delaware River, only three (loggerhead, Kemp's ridley, and Atlantic green) are typically observed near the Salem and HCGS facilities. The other two species (leatherback [*Dermochelys coriacea*] and hawksbill [*Eretmochelys imbricate*]) are uncommon to the Delaware River. No sea turtles have been captured at HCGS. Nearly 100 sea turtles have been captured at Salem since it began operation, including 72 loggerheads (1979 - 2001), 24 Kemp's ridley turtles (1980 - 1993), and 3 Atlantic green turtles (1980 - 1992). Since 2001, no threatened or endangered sea turtles have been captured at Salem.

PSEG Nuclear does not expect license renewal to alter existing operations. No expansion of existing facilities is planned, and no structural modifications have been identified to support license renewal. Maintenance activities during the license renewal term would be restricted to previously disturbed areas. No additional land-disturbance or activities that would affect the Delaware River are anticipated in support of license renewal. Both PSE&G and Pepco have established maintenance procedures for transmission corridors that involve minimal disturbance of land, wetlands, and streams and are unlikely to adversely affect any threatened or endangered species.

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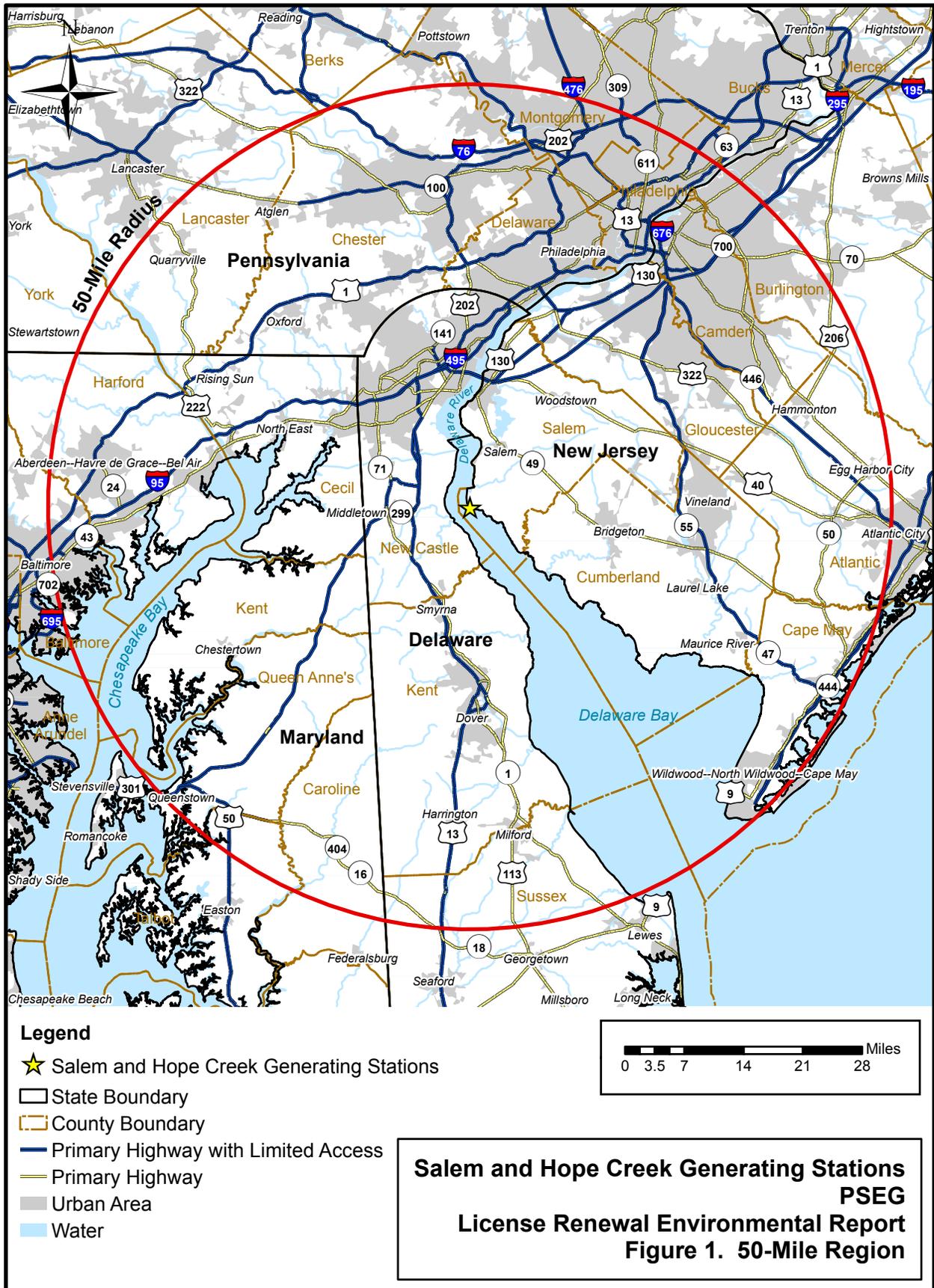
Please do not hesitate to call me at 856-339-7902, if there are questions or you need additional information to complete a review of the proposed action. Thank you in advance for your assistance.

Sincerely,



Edward J. Keating
Sr. Environmental Advisor

Enclosure: Figure 1 – 50-Mile Region
Figure 2 – Transmission lines associated with Salem and HCGS
Table 1 – Endangered and Threatened Species Recorded in Salem
County and Counties Crossed by Transmission Lines



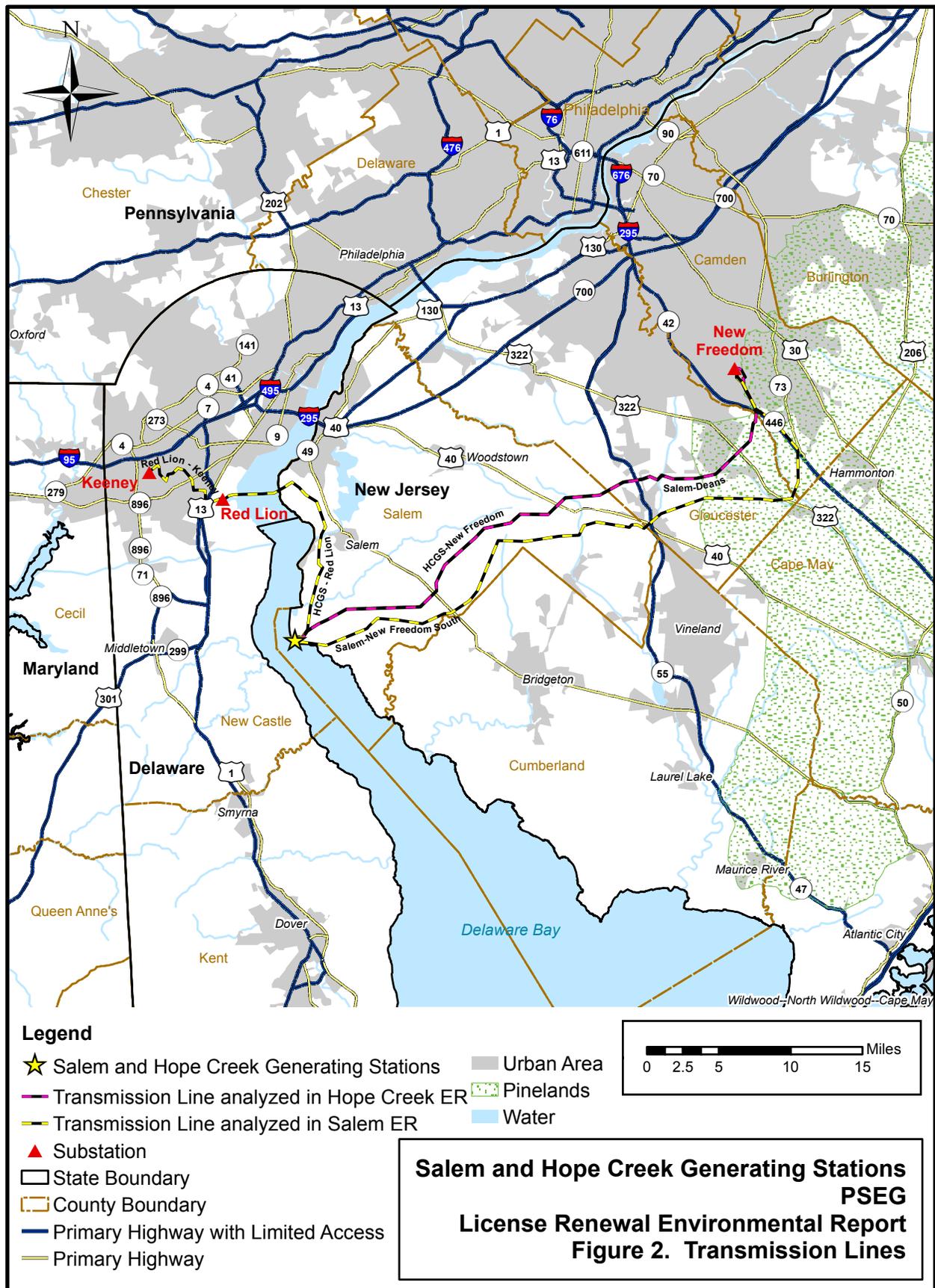


Table 1 Endangered and Threatened Species Recorded in Salem County and Counties Crossed by Transmission Lines

Scientific Name	Common Name	Status		County ^c
		Federal ^a	State ^{a,b}	
Mammals				
<i>Lynx rufus</i>	Bobcat	-	E	Salem
Birds				
<i>Accipiter cooperii</i>	Cooper's hawk	-	T/T	Gloucester, Salem
<i>Ammodramus henslowii</i>	Henslow's sparrow	-	E	Gloucester
<i>A. savannarum</i>	Grasshopper sparrow	-	T/S	Salem
<i>Bartramia longicauda</i>	Upland sandpiper	-	E	Gloucester, Salem
<i>Buteo lineatus</i>	Red-shouldered hawk	-	E/T	Gloucester
<i>Circus cyaneus</i>	Northern harrier	-	E/U	Salem
<i>Cistothorus platensis</i>	Sedge wren	-	E	Salem
<i>Dolichonyx oryzivorus</i>	Bobolink	-	T/T	Salem
<i>Falco peregrinus</i>	Peregrine falcon	-	E	Camden, Gloucester, Salem
<i>Haliaeetus leucocephalus</i>	Bald eagle	-	E	Gloucester, Salem
<i>Melanerpes erythrocephalus</i>	Red-headed woodpecker	-	T/T	Camden, Gloucester, Salem
<i>Pandion haliaetus</i>	Osprey	-	T/T	Gloucester, Salem
<i>Passerculus sandwichensis</i>	Savannah sparrow	-	T/T	Salem
<i>Podilymbus podiceps</i>	Pied-billed grebe	-	E/S	Salem
<i>Pooecetes gramineus</i>	Vesper sparrow	-	E	Gloucester, Salem
<i>Strix varia</i>	Barred owl	-	T/T	Gloucester, Salem
Reptiles and Amphibians				
<i>Ambystoma tigrinum tigrinum</i>	Eastern tiger salamander	-	E	Gloucester, Salem
<i>Clemmys insculpta</i>	Wood turtle	-	E	Gloucester
<i>C. muhlenbergii</i>	Bog turtle	T	E	Camden, Gloucester, Salem
<i>Crotalus horridus horridus</i>	Timber rattlesnake	-	E	Camden
<i>Hyla andersoni</i>	Pine barrens treefrog	-	E	Camden, Gloucester, Salem
<i>Pituophis melanoleucus</i>	Northern pine snake	-	T	Camden, Gloucester, Salem
<i>Caretta caretta</i>	Loggerhead sea turtle	T	E	Delaware River ^d
<i>Lepidochelys kempi</i>	Kemp's ridley	E	E	Delaware River ^d
<i>Dermochelys coriacea</i>	Leatherback turtle	E	E	Delaware River ^d
<i>Eretmochelys imbricata</i>	Hawksbill turtle	E	E	Delaware River ^d
<i>Chelonia mydas</i>	Atlantic green turtle	T	T	Delaware River ^d
Fish				
<i>Acipenser brevirostrum</i>	Shortnose sturgeon	E	E	Delaware River ^d
<i>A. oxyrinchus oxyrinchus</i>	Atlantic sturgeon	C	-	Delaware River ^d
Insects				
<i>Nicrophorus americanus</i>	American burying beetle	E	E	Camden, Gloucester

Table 1 Endangered and Threatened Species Recorded in Salem County and Counties Crossed by Transmission Lines (Continued)

Scientific Name	Common Name	Status		County ^c
		Federal ^a	State ^{a,b}	
Plants				
<i>Aeschynomene virginica</i>	Sensitive joint vetch	T	E	Camden, Gloucester, Salem
<i>Aplectrum hyemale</i>	Putty root	-	E	Gloucester
<i>Aristida lanosa</i>	Wooly three-awn grass	-	E	Camden, Salem
<i>Asimina triloba</i>	Pawpaw	-	E	Gloucester
<i>Aster radula</i>	Low rough aster	-	E	Camden, Gloucester, Salem
<i>Bouteloua curtipendula</i>	Side oats grama grass	-	E	Gloucester
<i>Cacalia atriplicifolia</i>	Pale Indian plantain	-	E	Camden, Gloucester
<i>Calystegia spithamea</i>	Erect bindweed	-	E	Camden, Salem
<i>Cardamine longii</i>	Long's bittercress	-	E	Gloucester
<i>Carex aquatilis</i>	Water sedge	-	E	Camden
<i>C. bushii</i>	Bush's sedge	-	E	Camden
<i>C. cumulata</i>	Clustered sedge	-	E	Camden
<i>C. limosa</i>	Mud sedge	-	E	Gloucester
<i>C. polymorpha</i>	Variable sedge	-	E	Gloucester
<i>Castanea pumila</i>	Chinquapin	-	E	Gloucester, Salem
<i>Cercis canadensis</i>	Redbud	-	E	Camden
<i>Chenopodium rubrum</i>	Red goosefoot	-	E	Camden
<i>Commelina erecta</i>	Slender dayflower	-	E	Camden
<i>Cyperus lancastris</i>	Lancaster flat sedge	-	E	Camden, Gloucester
<i>C. polystachyos</i>	Coast flat sedge	-	E	Salem
<i>C. pseudovegetus</i>	Marsh flat sedge	-	E	Salem
<i>C. retrofractus</i>	Rough flat sedge	-	E	Camden, Gloucester
<i>Dalibarda repens</i>	Robin-run-away	-	E	Gloucester
<i>Diodia virginiana</i>	Larger buttonweed	-	E	Camden
<i>Draba reptans</i>	Carolina Whitlow-grass	-	E	Camden, Gloucester
<i>Eleocharis melanocarpa</i>	Black-fruit spike-rush	-	E	Salem
<i>E. equisetoides</i>	Knotted spike-rush	-	E	Gloucester
<i>E. tortilis</i>	Twisted spike-rush	-	E	Gloucester
<i>Elephantopus carolinianus</i>	Carolina elephant-foot	-	E	Gloucester, Salem
<i>Eriophorum gracile</i>	Slender cotton-grass	-	E	Gloucester
<i>E. tenellum</i>	Rough cotton-grass	-	E	Camden, Gloucester
<i>Eupatorium capillifolium</i>	Dog fennel thoroughwort	-	E	Camden
<i>E. resinsum</i>	Pine barren boneset	-	E	Camden, Gloucester,
<i>Euphorbia purpurea</i>	Darlington's glade spurge	-	E	Salem

Table 1 Endangered and Threatened Species Recorded in Salem County and Counties Crossed by Transmission Lines (Continued)

Scientific Name	Common Name	Status		County ^c
		Federal ^a	State ^{a,b}	
<i>Glyceria grandis</i>	American manna grass	-	E	Camden
<i>Gnaphalium helleri</i>	Small everlasting	-	E	Camden
<i>Gymnopogon brevifolius</i>	Short-leaf skeleton grass	-	E	Gloucester
<i>Helonias bullata</i>	Swamp-pink	T	E	Camden, Gloucester, Salem
<i>Hemicarpha micrantha</i>	Small-flower halfchaff sedge	-	E	Camden
<i>Hottonia inflata</i>	Featherfoil	-	E	Salem
<i>Hydrastis canadensis</i>	Golden seal	-	E	Camden
<i>Hydrocotyle ranunculoides</i>	Floating marsh- pennywort	-	E	Salem
<i>Hypericum adpressum</i>	Barton's St. John's-wort	-	E	Salem
<i>Juncus caesariensis</i>	New Jersey rush	-	E	Camden
<i>J. torreyi</i>	Torrey's rush	-	E	Camden
<i>Kuhnia eupatorioides</i>	False boneset	-	E	Camden
<i>Lemna perpusilla</i>	Minute duckweed	-	E	Camden, Salem
<i>Limosella subulata</i>	Awl-leaf mudwort	-	E	Camden
<i>Linum intercursum</i>	Sandplain flax	-	E	Camden, Salem
<i>Luzula acuminata</i>	Hairy wood-rush	-	E	Gloucester, Salem
<i>Melanthium virginicum</i>	Virginia bunchflower	-	E	Camden, Gloucester, Salem
<i>Micranthemum micranthemoides</i>	Nuttall's mudwort	-	E	Camden, Gloucester
<i>Muhlenbergia capillaris</i>	Long-awn smoke grass	-	E	Gloucester
<i>Myriophyllum tenellum</i>	Slender water-milfoil	-	E	Camden
<i>M. pinnatum</i>	Cut-leaf water-milfoil	-	E	Salem
<i>Nelumbo lutea</i>	American lotus	-	E	Camden, Salem
<i>Nuphar microphyllum</i>	Small yellow pond-lily	-	E	Camden
<i>Onosmodium virginianum</i>	Virginia false-gromwell	-	E	Camden, Gloucester, Salem
<i>Ophioglossum vulgatum pycnostichum</i>	Southern adder's tongue	-	E	Salem
<i>Panicum aciculare</i>	Bristling panic grass	-	E	Gloucester
<i>Penstemon laevigatus</i>	Smooth beardtongue	-	E	Gloucester
<i>Plantago pusilla</i>	Dwarf plantain	-	E	Camden
<i>Platanthera flava flava</i>	Southern rein orchid	-	E	Camden
<i>Pluchea foetida</i>	Stinking fleabane	-	E	Camden
<i>Polemonium reptans</i>	Greek-valerian	-	E	Salem
<i>Polygala incarnata</i>	Pink milkwort	-	E	Camden, Gloucester

Table 1 Endangered and Threatened Species Recorded in Salem County and Counties Crossed by Transmission Lines (Continued)

Scientific Name	Common Name	Status		County ^c
		Federal ^a	State ^{a,b}	
<i>Prunus angustifolia</i>	Chickasaw plum	-	E	Camden, Gloucester, Salem
<i>Pycnanthemum clinopodioides</i>	Basil mountain mint	-	E	Camden
<i>P. torrei</i>	Torrey's mountain mint	-	E	Gloucester
<i>Quercus imbricaria</i>	Shingle oak	-	E	Gloucester
<i>Q. lyrata</i>	Overcup oak	-	E	Salem
<i>Rhododendron atlanticum</i>	Dwarf azalea	-	E	Salem
<i>Rhynchospora globularis</i>	Coarse grass-like beaked-rush	-	E	Camden, Gloucester, Salem
<i>R. knieskernii</i>	Knieskern's beaked-rush	T	E	Camden
<i>Sagittaria teres</i>	Slender arrowhead	-	E	Camden
<i>Scheuchzeria palustris</i>	Arrow-grass	-	E	Camden, Gloucester
<i>Schwalbea americana</i>	Chaffseed	E	E	Camden
<i>Scirpus longii</i>	Long's woolgrass	-	E	Camden
<i>S. maritimus</i>	Saltmarsh bulrush	-	E	Camden
<i>Scutellaria leonardii</i>	Small skullcap	-	E	Salem
<i>Spiranthes laciniata</i>	Lace-lip ladies' tresses	-	E	Gloucester
<i>Stellaria pubera</i>	Star chickweed	-	E	Camden
<i>Triadenum walteri</i>	Walter's St. John's wort	-	E	Camden
<i>Utricularia biflora</i>	Two-flower bladderwort	-	E	Gloucester, Salem
<i>Valerianella radiata</i>	Beaked cornsalad	-	E	Gloucester
<i>Verbena simplex</i>	Narrow-leaf vervain	-	E	Camden, Gloucester
<i>Vernonia glauca</i>	Broad-leaf ironweed	-	E	Gloucester, Salem
<i>Vulpia ellioatea</i>	Squirrel-tail six-weeks grass	-	E	Camden, Gloucester, Salem
<i>Wolffiella floridana</i>	Sword bogmat	-	E	Salem
<i>Xyris fimbriata</i>	Fringed yellow-eyed grass	-	E	Camden

a. E = Endangered; T = Threatened; C = Candidate; - = Not listed.

b. State status for birds separated by a slash (/) indicates a dual status. First status refers to the state breeding population, and the second status refers to the migratory or winter population. S = Stable species (a species whose population is not undergoing any long-term increase or decrease within its natural cycle); U = Undetermined (a species about which there is not enough information available to determine the status) (NJDEP 2008b).

c. Source of county occurrence: USFWS (undated); NJDEP (2008a); (NJDEP (2008c).

d. Sea turtles and sturgeon were not included in county lists maintained by USFWS (undated) and NJDEP (2008a), but are known by PSEG to occur in the Delaware River (see text).



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
55 Great Republic Drive
Gloucester, MA 01930-2276

APR 15 2009

Edward J. Keating
PSEG Nuclear, LLC
PO Box 236
Hancocks Bridge, New Jersey 08038-0236

Re: Salem and Hope Creek Generating Stations

Dear Mr. Keating,

This is in response to your letter dated March 4, 2009 regarding PSEG Nuclear's plan to apply to the US Nuclear Regulatory Commission (NRC) for renewal of the operating licenses for the Salem and Hope Creek Generating Stations (Salem and HCGS), which are located on adjacent sites within a 740-acre parcel of property at the southern end of Artificial Island in Lower Alloways Creek Township, Salem County, New Jersey. The existing licenses for Salem Units 1 and 2 expire in 2016 and 2020, respectively and the operating license for the single HCGS unit expires in 2026. License renewal would extend the operating period of each reactor for an additional 20 years. PSEG is in the early stages of preparing environmental reports assessing the impacts of relicensing on threatened and endangered species in anticipation of the National Environmental Policy Act (NEPA) and Endangered Species Act (ESA) reviews that will be required during the relicensing process.

Species Listed under the Endangered Species Act

As noted in your letter, several species listed by NOAA's National Marine Fisheries Service (NMFS) occur in the Delaware River where the intakes for both facilities are located. Four species of sea turtles occur seasonally (May – November) in the Delaware River estuary, including the threatened loggerhead (*Caretta caretta*), and endangered Kemp's ridley (*Lepidochelys kempii*), green (*Chelonia mydas*), and leatherback (*Dermochelys coriacea*) sea turtles. Additionally, a population of endangered shortnose sturgeon (*Acipenser brevirostrum*) occurs in the Delaware River.

Consultation pursuant to Section 7 of the ESA between NRC and NMFS on the effects of the operation of these facilities has been ongoing since 1979. A Biological Opinions (Opinion) was issued by NMFS in April 1980 in which NMFS concluded that the ongoing operation of the



facilities was not likely to jeopardize the continued existence of shortnose sturgeon. Consultation was reinitiated in 1988 due to the documentation of impingement of sea turtles at the Salem facility. An Opinion was issued on January 2, 1991 in which NMFS concluded that the ongoing operation was not likely to jeopardize shortnose sturgeon, Kemp's ridley, green or loggerhead sea turtles. Consultation was reinitiated in 1992 due to the number of sea turtle impingements at the Salem intake exceeding the number exempted in the 1991 Incidental Take Statement. A new Opinion was issued on August 4, 1992. Consultation was again reinitiated in January 1993 when the number of sea turtle impingements exceeded the 1992 ITS with an Opinion issued on May 14, 1993. In 1998 the NRC requested that NMFS modify the Reasonable and Prudent Measures and Terms and Conditions of the ITS, and, specifically, remove a sea turtle study requirement. NMFS responded to this request in a letter dated January 21, 1999. Accompanying this letter was a revised ITS which served to amend the May 14, 1993 Opinion.

Since monitoring of the intakes was initiated in 1978, 18 shortnose sturgeon and 99 sea turtles have been recovered from the Salem intakes. No shortnose sturgeon or sea turtles have been observed at the Hope Creek intakes. No sea turtles have been captured at Salem since 2001. As the relicensing is not expected to result in changes in operation at either facility, it is likely that the potential for take of these species will continue, at least at the Salem facility. As such, NMFS agrees that a formal Section 7 consultation will be necessary. NMFS looks forward to working with you and the NRC in the development of the Biological Assessment. NMFS expects that the Biological Assessment will include an analysis of effects on the species of sea turtles noted above as well as endangered shortnose sturgeon. The BA should discuss effects of the intake and any associated discharge (pollutants as well as heated effluent) as well as any other project related operations that may affect these species (e.g., any ongoing sampling studies that may occur in Delaware Bay or the Delaware River). Please note that status reviews are currently ongoing for shortnose sturgeon and loggerhead sea turtles. As such, NMFS recommends that prior to the submittal of an environmental report to the NRC, PSEG confirm the status of these species with NMFS.

Technical Assistance for Candidate Species

Candidate species are those petitioned species that are actively being considered for listing as endangered or threatened under the ESA, as well as those species for which NMFS has initiated an ESA status review that it has announced in the *Federal Register*.

Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) occur in the Delaware River. In 2006, NMFS initiated a status review for Atlantic sturgeon to determine if listing as threatened or endangered under the ESA is warranted. The Status Review Report was published on February 23, 2007. NMFS is currently considering the information presented in the Status Review Report to determine if any listing action pursuant to the ESA is warranted at this time. If it is determined that listing is warranted, a final rule listing the species could be published within a year from the date of publication of the listing determination or proposed rule. As a candidate species, Atlantic sturgeon receive no substantive or procedural protection under the ESA; however, NMFS recommends that project proponents consider implementing conservation actions to limit the potential for adverse effects on Atlantic sturgeon from any proposed project. Please note that once a species is proposed for listing the conference provisions of the ESA apply

(see 50 CFR 402.10). As the listing status for this species may change, NMFS recommends that PSEG obtain updated status information from NMFS prior to the submission of the environmental report to FERC.

My staff looks forward to working with PSEG and the NRC during the relicensing process. Should you have any questions regarding this correspondence, please contact Julie Crocker of my staff at (978)282-8480 or by e-mail (Julie.Crocker@noaa.gov).

Sincerely,



Mary A. Colligan
Assistant Regional Administrator for
Protected Resources

EC: Crocker, F/NER3

File Code: Sec 7 NRC Salem and Hope Creek Nuclear

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PSEG Nuclear LLC
P.O. Box 236, Hancocks Bridge, New Jersey 08038-0236



March 4, 2009

LR-E09-057

David Jenkins, Chief
Endangered and Nongame Wildlife
New Jersey Department of Environmental Protection
Division of Fish and Wildlife
P.O. Box 400
Trenton, NJ 08652-0400

SUBJECT: Salem and Hope Creek Generating Stations
Request for Information on Threatened or Endangered Species

Dear Mr. Jenkins:

In 2009, PSEG Nuclear plans to apply to the U.S. Nuclear Regulatory Commission (NRC) for renewal of the operating licenses for the Salem and Hope Creek Generating Stations (referred to respectively as Salem and HCGS), which are located on adjacent sites within a 740-acre parcel of property owned by PSEG Nuclear on the southern end of Artificial Island in Lower Alloways Creek Township, Salem County, New Jersey. The existing licenses for Salem Units 1 and 2 were issued for 40-year terms that expire in 2016 and 2020, respectively. The operating license for the single HCGS unit was also issued for a 40-year term that expires in 2026. License renewal would extend the operating period of each reactor for an additional 20 years.

The NRC requires that the license renewal applications for Salem and HCGS include environmental reports assessing potential environmental impacts from operation during the license renewal term. One of these potential environmental impacts would be the effect of license renewal on threatened or endangered species located on the Salem and HCGS sites, their immediate environs, and transmission line corridors connecting the plants to the existing transmission line system. Accordingly, the NRC requires that the environmental report for each license renewal application assess such a potential effect (10 CFR 51.53). Later, during its review of the proposed license renewals pursuant to the National Environmental Policy Act (NEPA), the NRC will use that assessment to evaluate whether a basis exists to request consultation with your office under Section 7 of the Endangered Species Act.

95-2168 REV. 7/99

I am contacting you now in order to obtain input regarding issues that may need to be addressed in the Salem and HCGS license renewal environmental reports, and to help me identify any information your staff believes would be helpful to expedite NRC's consultation.

Beginning early in the twentieth century, Artificial Island was created by placing dredge spoils within a diked area established by the U.S. Army Corps of Engineers on the eastern shore of the Delaware River. The 1,500-acre island is low and flat with an average elevation of approximately 9 ft above mean sea level (msl) and a maximum elevation of approximately 18 ft msl. Habitat surrounding the PSEG-owned property on Artificial Island has been characterized as tidal marsh and grassland with some upland woodland vegetation. It is low quality for wildlife and is not an important natural resource area. Artificial Island is located approximately 18 miles southeast of Wilmington, Delaware (see enclosed Figure 1). Philadelphia is about 30 miles and Salem, New Jersey, is 7.5 miles northeast of the Artificial Island.

There are three transmission corridors containing four 500-kV transmission lines that connect the Salem and HCGS sites to the regional electricity grid (see enclosed Figure 2). These transmission corridors are considered by the NRC to be within the scope of its environmental reviews for the Salem and HCGS license renewals. In New Jersey, the lines are owned and maintained by Public Service Electric and Gas Company (PSE&G) (a subsidiary of Public Service Enterprise Group, which also owns PSEG Nuclear). In Delaware, a single line is owned and maintained by Pepco (a regulated electric utility that is a subsidiary of Pepco Holdings, Inc.). Each corridor is 350 feet wide, except for one, which narrows to 200 feet for approximately 8 miles. The total length of all three corridors is approximately 106 miles, which cross Camden, Gloucester, and Salem Counties in New Jersey and New Castle County in Delaware. All corridors traverse local marshland (adjacent to the Salem and HCGS sites), as well as agricultural and forested lands located away from the sites. One line crosses the Delaware River north of the Salem and HCGS sites and extends into Delaware.

Based on a review of information available on the New Jersey Department of Environmental Protection (NJDEP) website (county records of "rare species and natural communities"), information provided by Delaware, and previous on-site surveys, PSEG Nuclear believes that no federally- or state-listed threatened or endangered plant or animal species resides on the Salem or HCGS sites.

However, one federally-threatened plant species occurs on the Salem-New Freedom South transmission corridor (see enclosed Figure 2), and some state-listed threatened terrestrial animal species occur within Salem County and the counties crossed by the transmission corridors (see enclosed Table 1), and these species may occasionally migrate through the sites. A population of *Helonias bullata* (swamp pink) has been located between towers 9/4 and 10/1, near Jericho Road in Salem County. Terrestrial animal species known to occur in the

subject counties include the bald eagle, peregrine falcon, osprey, Cooper's hawk, bobolink, and grasshopper sparrow. Ospreys are known to nest on transmission towers near the sites. Also, shortnose sturgeon and five species of federally-listed sea turtles are known to occur in the Delaware River near the Salem and HCGS sites.

PSEG Nuclear does not expect Salem or HCGS operations during the license renewal terms (an additional 20 years) to adversely affect threatened or endangered species at the station sites, the immediate environs, or the transmission line corridors because license renewal will not alter existing operations. No expansion of existing facilities is planned, and no structural modifications or other refurbishments have been identified that are necessary to support license renewal. Maintenance activities during the license renewal term would be restricted to previously disturbed areas. No additional land-disturbance or activities that would affect the Delaware River are anticipated in support of license renewal. Both PSE&G and Pepco have established maintenance procedures for transmission corridors that involve minimal disturbance of land, wetlands, and streams and are unlikely to adversely affect any threatened or endangered species.

After your review of the information provided in this letter, I would appreciate your sending a letter detailing any concerns you may have about any listed species or critical habitat in the area of the Salem and HCGS sites and the associated transmission corridors. PSEG Nuclear will include copies of this letter and your response in the environmental reports that will be submitted to the NRC as part of the Salem and HCGS license renewal applications.

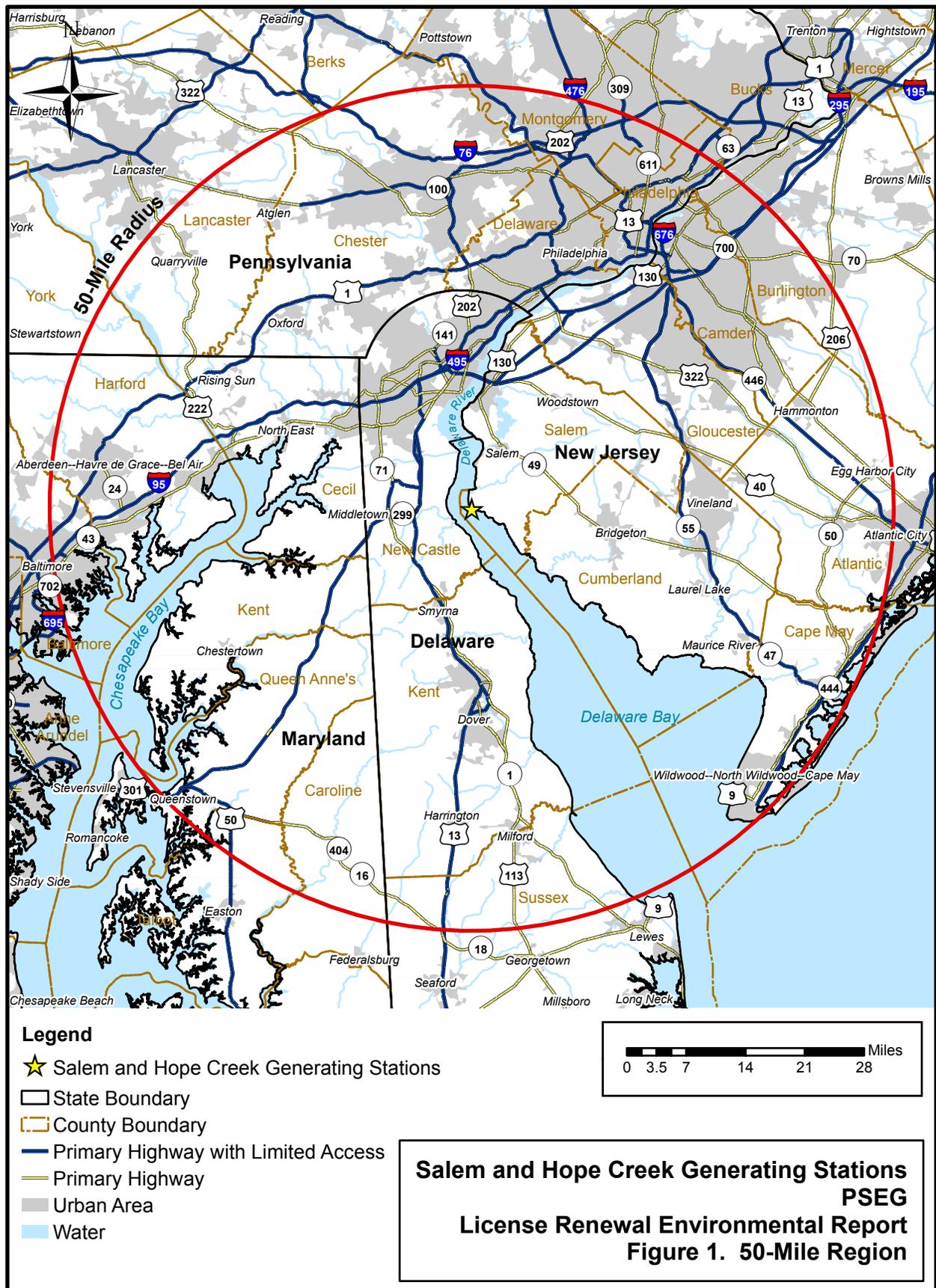
Please do not hesitate to call me at 856-339-7902, if there are questions or you need additional information to complete a review of the proposed action. Thank you in advance for your assistance.

Sincerely,



Edward J. Keating
Sr. Environmental Advisor

Enclosure: Figure 1 – 50-Mile Region
Figure 2 – Transmission lines associated with Salem and HCGS
Table 1 – Endangered and Threatened Species Recorded in Salem County and Counties Crossed by Transmission Lines



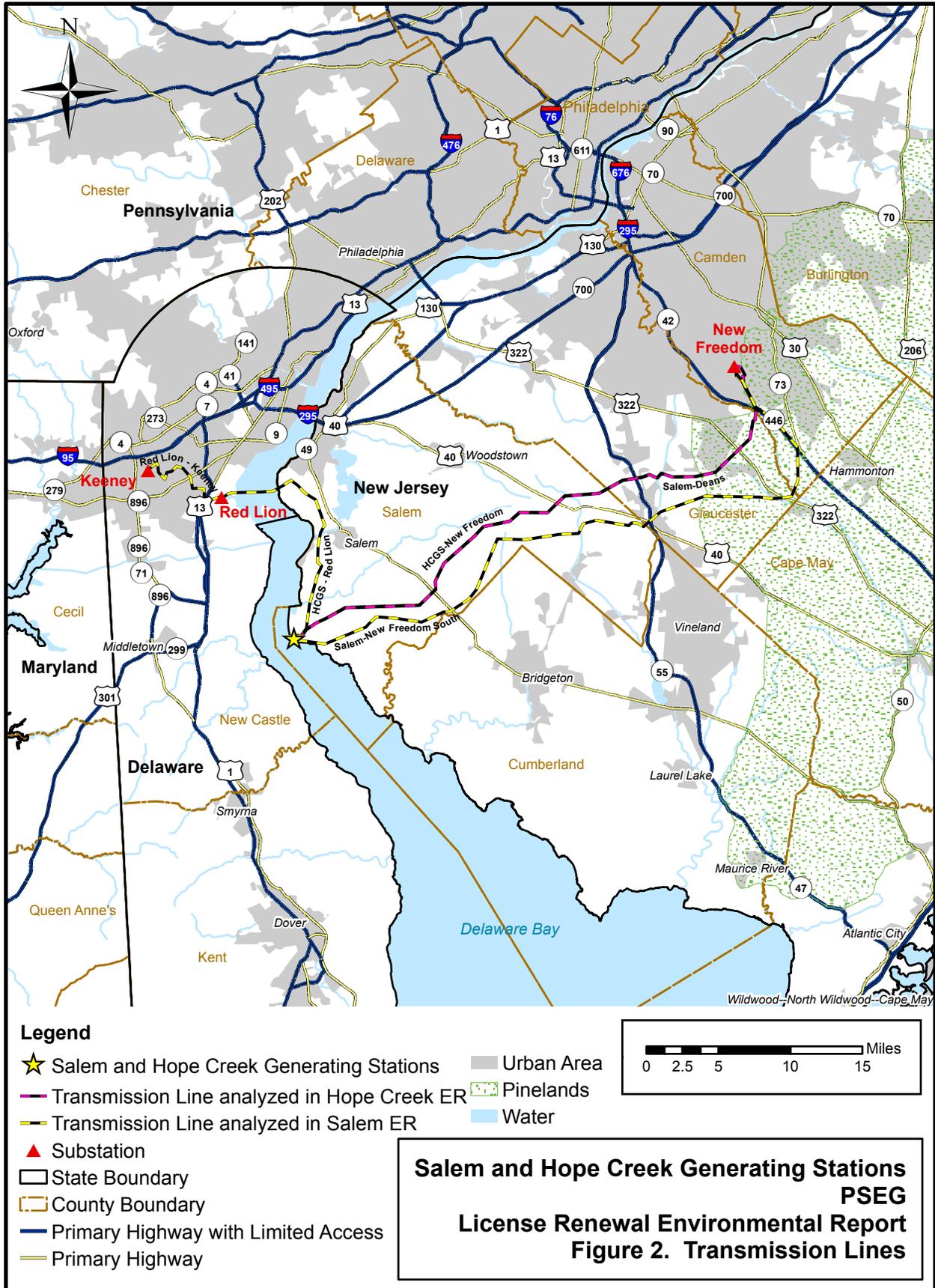


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<i>Bartramia longicauda</i>	Upland sandpiper	-	E	Gloucester, Salem
<i>Buteo lineatus</i>	Red-shouldered hawk	-	E/T	Gloucester
<i>Circus cyaneus</i>	Northern harrier	-	E/U	Salem
<i>Cistothorus platensis</i>	Sedge wren	-	E	Salem
<i>Dolichonyx oryzivorus</i>	Bobolink	-	T/T	Salem
<i>Falco peregrinus</i>	Peregrine falcon	-	E	Camden, Gloucester, Salem
<i>Haliaeetus leucocephalus</i>	Bald eagle	-	E	Gloucester, Salem
<i>Melanerpes erythrocephalus</i>	Red-headed woodpecker	-	T/T	Camden, Gloucester, Salem
<i>Pandion haliaetus</i>	Osprey	-	T/T	Gloucester, Salem
<i>Passerculus sandwichensis</i>	Savannah sparrow	-	T/T	Salem
<i>Podilymbus podiceps</i>	Pied-billed grebe	-	E/S	Salem
<i>Pooecetes gramineus</i>	Vesper sparrow	-	E	Gloucester, Salem
<i>Strix varia</i>	Barred owl	-	T/T	Gloucester, Salem
Reptiles and Amphibians				
<i>Ambystoma tigrinum tigrinum</i>	Eastern tiger salamander	-	E	Gloucester, Salem
<i>Clemmys insculpta</i>	Wood turtle	-	E	Gloucester
<i>C. muhlenbergii</i>	Bog turtle	T	E	Camden, Gloucester, Salem
<i>Crotalus horridus horridus</i>	Timber rattlesnake	-	E	Camden
<i>Hyla andersoni</i>	Pine barrens treefrog	-	E	Camden, Gloucester, Salem
<i>Pituophis melanoleucus</i>	Northern pine snake	-	T	Camden, Gloucester, Salem
<i>Caretta caretta</i>	Loggerhead sea turtle	T	E	Delaware River ^d
<i>Lepidochelys kempi</i>	Kemp's ridley	E	E	Delaware River ^d
<i>Dermochelys coriacea</i>	Leatherback turtle	E	E	Delaware River ^d
<i>Eretmochelys imbricata</i>	Hawksbill turtle	E	E	Delaware River ^d
<i>Chelonia mydas</i>	Atlantic green turtle	T	T	Delaware River ^d
Fish				
<i>Acipenser brevirostrum</i>	Shortnose sturgeon	E	E	Delaware River ^d
<i>A. oxyrinchus oxyrinchus</i>	Atlantic sturgeon	C	-	Delaware River ^d
Insects				
<i>Nicrophorus americanus</i>	American burying beetle	E	E	Camden, Gloucester

Table 1 Endangered and Threatened Species Recorded in Salem County and Counties Crossed by Transmission Lines (Continued)

Scientific Name	Common Name	Status		County ^c
		Federal ^a	State ^{a,b}	
Plants				
<i>Aeschynomene virginica</i>	Sensitive joint vetch	T	E	Camden, Gloucester, Salem
<i>Aplectrum hyemale</i>	Putty root	-	E	Gloucester
<i>Aristida lanosa</i>	Wooly three-awn grass	-	E	Camden, Salem
<i>Asimina triloba</i>	Pawpaw	-	E	Gloucester
<i>Aster radula</i>	Low rough aster	-	E	Camden, Gloucester, Salem
<i>Bouteloua curtipendula</i>	Side oats grama grass	-	E	Gloucester
<i>Cacalia atriplicifolia</i>	Pale Indian plantain	-	E	Camden, Gloucester
<i>Calystegia spithamea</i>	Erect bindweed	-	E	Camden, Salem
<i>Cardamine longii</i>	Long's bittercress	-	E	Gloucester
<i>Carex aquatilis</i>	Water sedge	-	E	Camden
<i>C. bushii</i>	Bush's sedge	-	E	Camden
<i>C. cumulata</i>	Clustered sedge	-	E	Camden
<i>C. limosa</i>	Mud sedge	-	E	Gloucester
<i>C. polymorpha</i>	Variable sedge	-	E	Gloucester
<i>Castanea pumila</i>	Chinquapin	-	E	Gloucester, Salem
<i>Cercis canadensis</i>	Redbud	-	E	Camden
<i>Chenopodium rubrum</i>	Red goosefoot	-	E	Camden
<i>Commelina erecta</i>	Slender dayflower	-	E	Camden
<i>Cyperus lancastris</i>	Lancaster flat sedge	-	E	Camden, Gloucester
<i>C. polystachyos</i>	Coast flat sedge	-	E	Salem
<i>C. pseudovegetus</i>	Marsh flat sedge	-	E	Salem
<i>C. retrofractus</i>	Rough flat sedge	-	E	Camden, Gloucester
<i>Dalibarda repens</i>	Robin-run-away	-	E	Gloucester
<i>Diodia virginiana</i>	Larger buttonweed	-	E	Camden
<i>Draba reptans</i>	Carolina Whitlow-grass	-	E	Camden, Gloucester
<i>Eleocharis melanocarpa</i>	Black-fruit spike-rush	-	E	Salem
<i>E. equisetoides</i>	Knotted spike-rush	-	E	Gloucester
<i>E. tortilis</i>	Twisted spike-rush	-	E	Gloucester
<i>Elephantopus carolinianus</i>	Carolina elephant-foot	-	E	Gloucester, Salem
<i>Eriophorum gracile</i>	Slender cotton-grass	-	E	Gloucester
<i>E. tenellum</i>	Rough cotton-grass	-	E	Camden, Gloucester
<i>Eupatorium capillifolium</i>	Dog fennel thoroughwort	-	E	Camden
<i>E. resinsum</i>	Pine barren boneset	-	E	Camden, Gloucester,
<i>Euphorbia purpurea</i>	Darlington's glade spurge	-	E	Salem

Table 1 Endangered and Threatened Species Recorded in Salem County and Counties Crossed by Transmission Lines (Continued)

Scientific Name	Common Name	Status		County ^c
		Federal ^a	State ^{a,b}	
<i>Glyceria grandis</i>	American manna grass	-	E	Camden
<i>Gnaphalium helleri</i>	Small everlasting	-	E	Camden
<i>Gymnopogon brevifolius</i>	Short-leaf skeleton grass	-	E	Gloucester
<i>Helonias bullata</i>	Swamp-pink	T	E	Camden, Gloucester, Salem
<i>Hemicarpha micrantha</i>	Small-flower halfchaff sedge	-	E	Camden
<i>Hottonia inflata</i>	Featherfoil	-	E	Salem
<i>Hydrastis canadensis</i>	Golden seal	-	E	Camden
<i>Hydrocotyle ranunculoides</i>	Floating marsh-pennywort	-	E	Salem
<i>Hypericum adpressum</i>	Barton's St. John's-wort	-	E	Salem
<i>Juncus caesariensis</i>	New Jersey rush	-	E	Camden
<i>J. torreyi</i>	Torrey's rush	-	E	Camden
<i>Kuhnia eupatorioides</i>	False boneset	-	E	Camden
<i>Lemna perpusilla</i>	Minute duckweed	-	E	Camden, Salem
<i>Limosella subulata</i>	Awl-leaf mudwort	-	E	Camden
<i>Linum intercursum</i>	Sandplain flax	-	E	Camden, Salem
<i>Luzula acuminata</i>	Hairy wood-rush	-	E	Gloucester, Salem
<i>Melanthium virginicum</i>	Virginia bunchflower	-	E	Camden, Gloucester, Salem
<i>Micranthemum micranthemoides</i>	Nuttall's mudwort	-	E	Camden, Gloucester
<i>Muhlenbergia capillaris</i>	Long-awn smoke grass	-	E	Gloucester
<i>Myriophyllum tenellum</i>	Slender water-milfoil	-	E	Camden
<i>M. pinnatum</i>	Cut-leaf water-milfoil	-	E	Salem
<i>Nelumbo lutea</i>	American lotus	-	E	Camden, Salem
<i>Nuphar microphyllum</i>	Small yellow pond-lily	-	E	Camden
<i>Onosmodium virginianum</i>	Virginia false-gromwell	-	E	Camden, Gloucester, Salem
<i>Ophioglossum vulgatum pycnostichum</i>	Southern adder's tongue	-	E	Salem
<i>Panicum aciculare</i>	Bristling panic grass	-	E	Gloucester
<i>Penstemon laevigatus</i>	Smooth beardtongue	-	E	Gloucester
<i>Plantago pusilla</i>	Dwarf plantain	-	E	Camden
<i>Platanthera flava flava</i>	Southern rein orchid	-	E	Camden
<i>Pluchea foetida</i>	Stinking fleabane	-	E	Camden
<i>Polemonium reptans</i>	Greek-valerian	-	E	Salem
<i>Polygala incarnata</i>	Pink milkwort	-	E	Camden, Gloucester

Table 1 Endangered and Threatened Species Recorded in Salem County and Counties Crossed by Transmission Lines (Continued)

Scientific Name	Common Name	Status		County ^c
		Federal ^a	State ^{a,b}	
<i>Prunus angustifolia</i>	Chickasaw plum	-	E	Camden, Gloucester, Salem
<i>Pycnanthemum clinopodioides</i>	Basil mountain mint	-	E	Camden
<i>P. torrei</i>	Torrey's mountain mint	-	E	Gloucester
<i>Quercus imbricaria</i>	Shingle oak	-	E	Gloucester
<i>Q. lyrata</i>	Overcup oak	-	E	Salem
<i>Rhododendron atlanticum</i>	Dwarf azalea	-	E	Salem
<i>Rhynchospora globularis</i>	Coarse grass-like beaked-rush	-	E	Camden, Gloucester, Salem
<i>R. knieskernii</i>	Knieskern's beaked-rush	T	E	Camden
<i>Sagittaria teres</i>	Slender arrowhead	-	E	Camden
<i>Scheuchzeria palustris</i>	Arrow-grass	-	E	Camden, Gloucester
<i>Schwalbea americana</i>	Chaffseed	E	E	Camden
<i>Scirpus longii</i>	Long's woolgrass	-	E	Camden
<i>S. maritimus</i>	Saltmarsh bulrush	-	E	Camden
<i>Scutellaria leonardii</i>	Small skullcap	-	E	Salem
<i>Spiranthes laciniata</i>	Lace-lip ladies' tresses	-	E	Gloucester
<i>Stellaria pubera</i>	Star chickweed	-	E	Camden
<i>Triadenum walteri</i>	Walter's St. John's wort	-	E	Camden
<i>Utricularia biflora</i>	Two-flower bladderwort	-	E	Gloucester, Salem
<i>Valerianella radiata</i>	Beaked cornsalad	-	E	Gloucester
<i>Verbena simplex</i>	Narrow-leaf vervain	-	E	Camden, Gloucester
<i>Vernonia glauca</i>	Broad-leaf ironweed	-	E	Gloucester, Salem
<i>Vulpia ellioatea</i>	Squirrel-tail six-weeks grass	-	E	Camden, Gloucester, Salem
<i>Wolffiella floridana</i>	Sword bogmat	-	E	Salem
<i>Xyris fimbriata</i>	Fringed yellow-eyed grass	-	E	Camden

- a. E = Endangered; T = Threatened; C = Candidate; - = Not listed.
- b. State status for birds separated by a slash (/) indicates a dual status. First status refers to the state breeding population, and the second status refers to the migratory or winter population. S = Stable species (a species whose population is not undergoing any long-term increase or decrease within its natural cycle); U = Undetermined (a species about which there is not enough information available to determine the status) (NJDEP 2008b).
- c. Source of county occurrence: USFWS (undated); NJDEP (2008a); (NJDEP (2008c).
- d. Sea turtles and sturgeon were not included in county lists maintained by USFWS (undated) and NJDEP (2008a), but are known by PSEG to occur in the Delaware River (see text).

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State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

JON S. CORZINE
Governor

NJ Division of Fish and Wildlife
Dave Chanda, Director
P.O. Box 400
Trenton, NJ 08625-0400
Visit our website at www.njfishandwildlife.com

MARK N. MAURIELLO
Acting Commissioner

April 2, 2009

Mr. Edward Keating
Sr. Environmental Advisor
PSEG Nuclear LLC
P.O. Box 236
Hancocks Bridge, NJ 08038-0236

Dear Mr. Keating:

I am in receipt of your letter dated March 4, 2009, requesting that the Endangered and Nongame Species Program (ENSP) provide information addressing concerns about listed species or critical habitat located at the Salem and Hope Creek Generating Stations and along associated transmission corridors. We appreciate the opportunity to comment on listed wildlife species issues and look forward to a dialogue focusing on these concerns in the future.

A good starting point for identifying impacts of continued operations at Salem and HCGS on listed species would be for PSEG to review the ENSP's Landscape Project mapping and request a Natural Heritage Program (NHP) database search for rare species (including plants) documented in the above-mentioned areas. Although it is stated in your letter that the license renewal will not alter existing operations, and therefore will not adversely affect listed species, there may be species occurrences that have been documented since the last required database search. Furthermore, there may have been additions to either the state endangered species list or list of indigenous nongame wildlife (covering threatened species) since the last search was completed. Once you have identified which species may occur within the project area, we will then be able to more adequately address concerns and identify what PSEG can do to minimize impacts if operations continue. At that time, if necessary, we would also like to open a discussion on how and under what circumstances transmission corridors are maintained.

In general, we have concerns regarding impingements/captures of shortnose sturgeon, Atlantic sturgeon and sea turtles in the cooling intakes at the Salem Creek facility. Although Atlantic sturgeon are not listed in NJ, we are in the process of proposing rules that will add the species to our endangered species list within the next six months or so. In addition, the National Marine Fisheries Service (NMFS) is planning to list Atlantic

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sturgeon as Threatened in the region, though the timing of this is uncertain. Your Environmental Assessment / Impact Statement should address current and future PSEG efforts to avoid/minimize impacts to these rare species.

In your letter, you state that swamp pink occurs along one of the transmission corridors and that no adverse impacts are expected since existing operations will not be altered. The Office of Natural Lands Management has requested that you provide information on the management regime for the swamp pink occurrence and vicinity, assuming that PSEG periodically performs corridor maintenance where this species occurs. Again, if you have not submitted a recent data request to the NHP (which will include plants) you should do so.

Once again, thank you for the opportunity to comment on listed species issues. If you have any questions or need additional information, please contact Jeanette Bowers-Altman of my staff at 856-629-0261.

Sincerely,



C. David Jenkins, Jr., Chief
Endangered and Nongame Species Program

c. Bob Cartica, Administrator – Office of Natural Lands Management

PSEG Nuclear LLC
P.O. Box 236, Hancocks Bridge, New Jersey 08038-0236



March 4, 2009

LR-E09-056

Ms. Edna Stetzar
Natural Heritage and Endangered Species Program
Division of Fish and Wildlife Service
Delaware Department of Natural Resources and Environmental Control
4876 Hay Point Landing Road
Smyrna, DE 19977

SUBJECT: Salem and Hope Creek Generating Stations
Request for Information on Threatened or Endangered Species

Dear Ms. Stetzar:

In 2009, PSEG Nuclear plans to apply to the U.S. Nuclear Regulatory Commission (NRC) for renewal of the operating licenses for the Salem and Hope Creek Generating Stations (referred to respectively as Salem and HCGS), which are located on adjacent sites within a 740-acre parcel of property owned by PSEG Nuclear on the southern end of Artificial Island in Lower Alloways Creek Township, Salem County, New Jersey. The existing licenses for Salem Units 1 and 2 were issued for 40-year terms that expire in 2016 and 2020, respectively. The operating license for the single HCGS unit was also issued for a 40-year term that expires in 2026. License renewal would extend the operating period of each reactor for an additional 20 years.

The NRC requires that the license renewal applications for Salem and HCGS include environmental reports assessing potential environmental impacts from operation during the license renewal term. One of these potential environmental impacts would be the effect of license renewal on threatened or endangered species located on the Salem and HCGS sites, their immediate environs, and transmission line corridors routed to connect the plants to the existing transmission system. Accordingly, the NRC requires that the environmental report for each license renewal application assess such a potential effect (10 CFR 51.53). Later, during its review of the proposed license renewals pursuant to the National Environmental Policy Act (NEPA), the NRC will use that assessment to evaluate whether a basis exists to request consultation with your office under Section 7 of the Endangered Species Act.

95-2168 REV. 7/99

I am contacting you now in order to obtain input regarding issues that may need to be addressed in the Salem and HCGS license renewal environmental reports, and to help me identify any information your staff believes would be helpful to expedite NRC's consultation.

Beginning early in the twentieth century, Artificial Island was created by placing dredge spoils within a diked area established by the U.S. Army Corps of Engineers on the eastern shore of the Delaware River. The 1,500-acre island is low and flat with an average elevation of approximately 9 ft above mean sea level (msl) and a maximum elevation of approximately 18 ft msl. Habitat surrounding the PSEG-owned property on Artificial Island can best be characterized as tidal marsh and grassland with some upland woodland vegetation. It is low quality for wildlife and is not an important natural resource area. Artificial Island is located approximately 18 miles southeast of Wilmington, Delaware (see enclosed Figure 1). Philadelphia is about 30 miles and Salem, New Jersey, is 7.5 miles northeast of Artificial Island.

There are three transmission corridors containing four 500-kV transmission lines that connect the Salem and HCGS sites to the regional electricity grid (see enclosed Figure 2). These transmission corridors are considered by the NRC to be within the scope of its environmental reviews for the Salem and HCGS license renewals. In New Jersey, the lines are owned and maintained by Public Service Electric and Gas Company (PSE&G) (a subsidiary of Public Service Enterprise Group, which also owns PSEG Nuclear). In Delaware, a single line is owned and maintained by Pepco (a regulated electric utility that is a subsidiary of Pepco Holdings, Inc.). The total length of all three corridors is approximately 106 miles, which cross Camden, Gloucester, and Salem Counties in New Jersey and New Castle County in Delaware. All corridors traverse local marshland (adjacent to the Salem and HCGS sites), as well as agricultural and forested lands located away from the sites. Each corridor is 350 feet wide, except for the HCGS-Red Lion and Red Lion-Keeney line, which narrows to 200 feet for approximately 8 miles. This line was originally constructed to connect Salem to the existing transmission system; therefore any impacts of the line/corridor are assessed in the Salem license renewal environmental report. When HCGS was constructed, several changes in transmission line connections with Salem were made. The Salem-Keeney line was disconnected from Salem and reconnected to HCGS. A new substation, Red Lion, was also constructed on the HCGS-Keeney transmission line. Hence the line is now referred to as the HCGS-Red Lion and Red Lion-Keeney lines. Because this transmission line extends into Delaware, the NRC requires that the environmental report for the Salem license renewal application assess whether any threatened or endangered species in Delaware would be affected by the license renewal (10 CFR 51.53(c)(3)(ii)(K)).

Based on a review of information available on the New Jersey Department of Environmental Protection (NJDEP) website (county records of “rare species and natural communities”), information provided by Delaware, and previous on-site surveys, PSEG Nuclear believes that no federally- or state-listed threatened or endangered plant or animal species resides on the Salem or HCGS sites.

However, one federally-threatened plant species occurs on the Salem-New Freedom South transmission corridor (see enclosed Figure 2) in New Jersey, and some state-listed threatened terrestrial animal species occur within Salem County and the counties crossed by the transmission corridors, including New Castle County (see enclosed Table 1), and these species may occasionally migrate through the sites or along the transmission corridors. Terrestrial animal species known to occur in the subject counties include the bald eagle, peregrine falcon, osprey, Cooper’s hawk, bobolink, and grasshopper sparrow. Ospreys are known to nest on transmission towers near the sites. Also, shortnose sturgeon and five species of federally-listed sea turtles are known to occur in the Delaware River near the Salem and HCGS sites.

PSEG Nuclear does not expect Salem or HCGS operations during the license renewal terms (an additional 20 years) to adversely affect threatened or endangered species at the station sites, the immediate environs, or the transmission line corridors because license renewal will not alter existing operations. No expansion of existing facilities is planned, and no structural modifications or other refurbishments have been identified that are necessary to support license renewal. Maintenance activities during the license renewal term would be restricted to previously disturbed areas. No additional land-disturbance or activities that would affect the Delaware River are anticipated in support of license renewal. Both PSE&G and Pepco have established maintenance procedures for transmission corridors that involve minimal disturbance of land, wetlands, and streams and are unlikely to adversely affect any threatened or endangered species.

After your review of the information provided in this letter, I would appreciate your sending a letter detailing any concerns you may have about any listed species or critical habitat in the area of the Salem and HCGS sites and the associated transmission corridor in Delaware. PSEG Nuclear will include copies of this letter and your response in the environmental reports that will be submitted to the NRC as part of the Salem and HCGS license renewal applications.

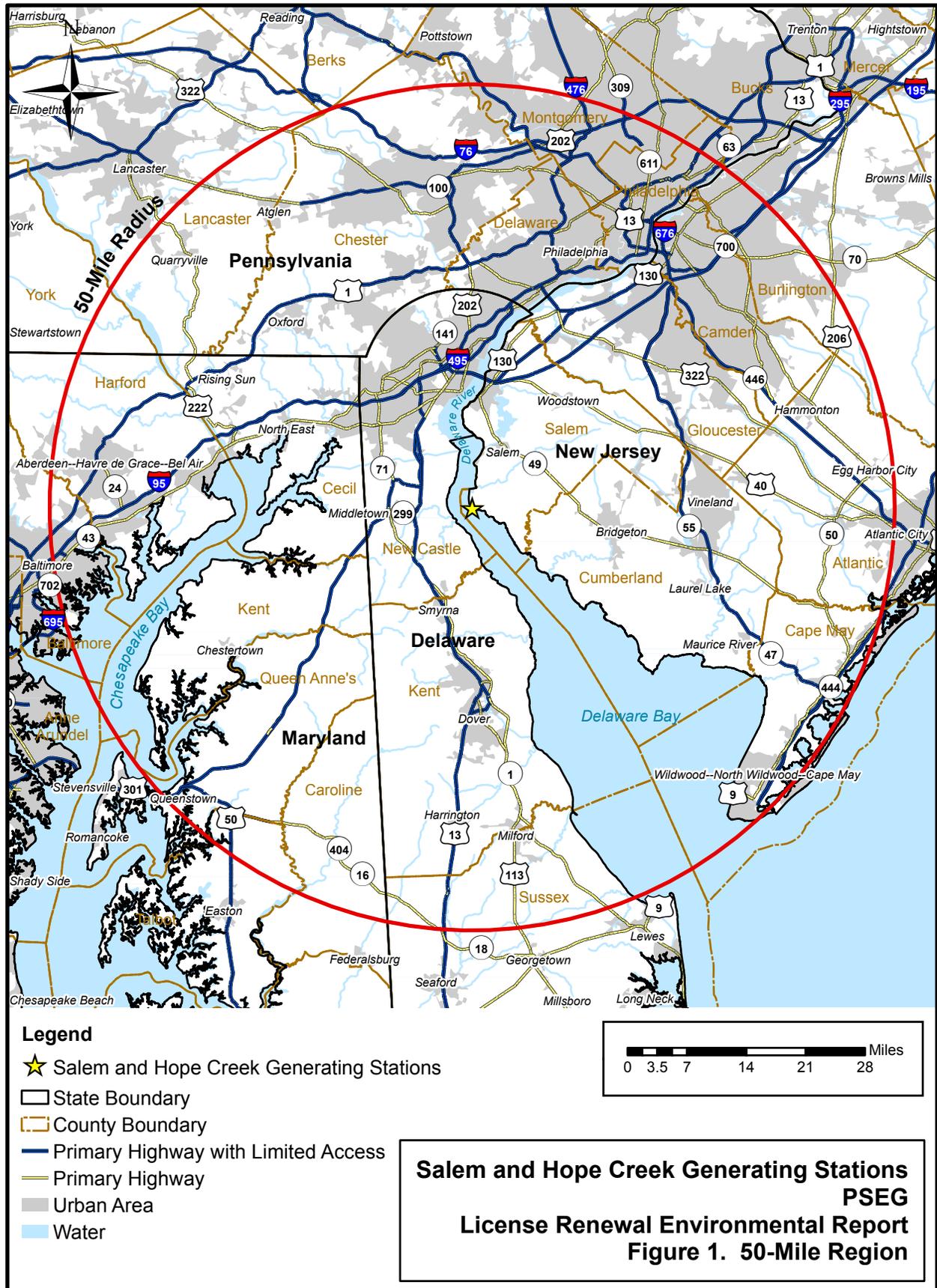
Please do not hesitate to call me at 856-339-7902, if there are questions or you need additional information to complete a review of the proposed action. I am aware of your fee schedule as specified on your website. Thank you in advance for your assistance.

Sincerely,



Edward J. Keating
Sr. Environmental Advisor

Enclosure: Figure 1 – 50-Mile Region
Figure 2 – Transmission lines associated with Salem and HCGS
Table 1 – Endangered and Threatened Species Recorded in Salem
County and Counties Crossed by Transmission Lines



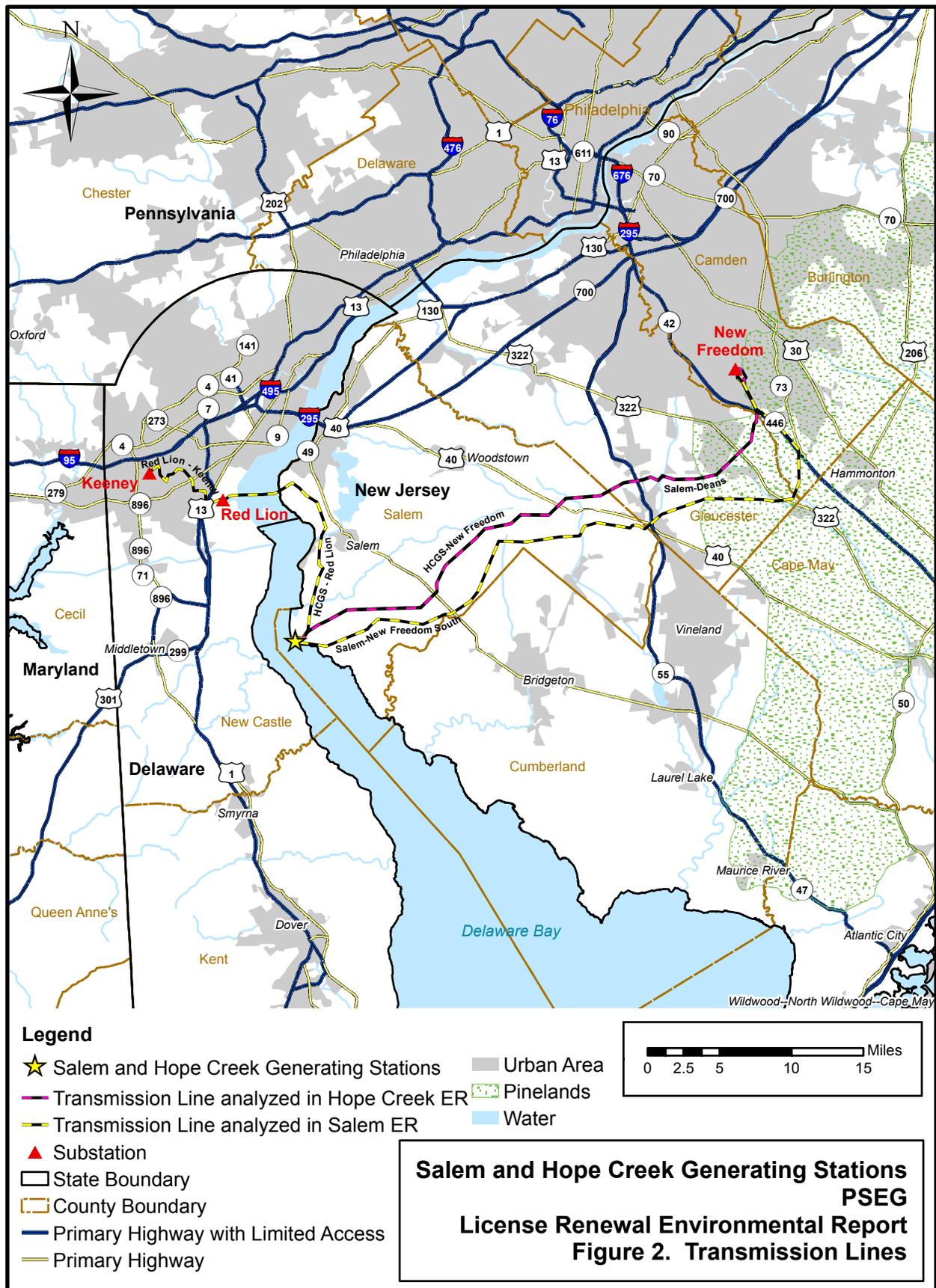


Table 1 Endangered and Threatened Species Recorded in Salem County and Counties Crossed by Transmission Lines

Scientific Name	Common Name	Status		County ^c
		Federal ^a	State ^{a,b}	
Mammals				
<i>Lynx rufus</i>	Bobcat	-	E	Salem
Birds				
<i>Accipiter cooperii</i>	Cooper's hawk	-	T/T	Gloucester, Salem
<i>Ammodramus henslowii</i>	Henslow's sparrow	-	E	Gloucester
<i>A. savannarum</i>	Grasshopper sparrow	-	T/S	Salem
<i>Bartramia longicauda</i>	Upland sandpiper	-	E	Gloucester, Salem
<i>Buteo lineatus</i>	Red-shouldered hawk	-	E/T	Gloucester
<i>Circus cyaneus</i>	Northern harrier	-	E/U	Salem
<i>Cistothorus platensis</i>	Sedge wren	-	E	Salem
<i>Dolichonyx oryzivorus</i>	Bobolink	-	T/T	Salem
<i>Falco peregrinus</i>	Peregrine falcon	-	E	Camden, Gloucester, Salem
<i>Haliaeetus leucocephalus</i>	Bald eagle	-	E	Gloucester, Salem
<i>Melanerpes erythrocephalus</i>	Red-headed woodpecker	-	T/T	Camden, Gloucester, Salem
<i>Pandion haliaetus</i>	Osprey	-	T/T	Gloucester, Salem
<i>Passerculus sandwichensis</i>	Savannah sparrow	-	T/T	Salem
<i>Podilymbus podiceps</i>	Pied-billed grebe	-	E/S	Salem
<i>Pooecetes gramineus</i>	Vesper sparrow	-	E	Gloucester, Salem
<i>Strix varia</i>	Barred owl	-	T/T	Gloucester, Salem
Reptiles and Amphibians				
<i>Ambystoma tigrinum tigrinum</i>	Eastern tiger salamander	-	E	Gloucester, Salem
<i>Clemmys insculpta</i>	Wood turtle	-	E	Gloucester
<i>C. muhlenbergii</i>	Bog turtle	T	E	Camden, Gloucester, Salem
<i>Crotalus horridus horridus</i>	Timber rattlesnake	-	E	Camden
<i>Hyla andersoni</i>	Pine barrens treefrog	-	E	Camden, Gloucester, Salem
<i>Pituophis melanoleucus</i>	Northern pine snake	-	T	Camden, Gloucester, Salem
<i>Caretta caretta</i>	Loggerhead sea turtle	T	E	Delaware River ^d
<i>Lepidochelys kempi</i>	Kemp's ridley	E	E	Delaware River ^d
<i>Dermochelys coriacea</i>	Leatherback turtle	E	E	Delaware River ^d
<i>Eretmochelys imbricata</i>	Hawksbill turtle	E	E	Delaware River ^d
<i>Chelonia mydas</i>	Atlantic green turtle	T	T	Delaware River ^d
Fish				
<i>Acipenser brevirostrum</i>	Shortnose sturgeon	E	E	Delaware River ^d
<i>A. oxyrinchus oxyrinchus</i>	Atlantic sturgeon	C	-	Delaware River ^d
Insects				
<i>Nicrophorus americanus</i>	American burying beetle	E	E	Camden, Gloucester

Table 1 Endangered and Threatened Species Recorded in Salem County and Counties Crossed by Transmission Lines (Continued)

Scientific Name	Common Name	Status		County ^c
		Federal ^a	State ^{a,b}	
Plants				
<i>Aeschynomene virginica</i>	Sensitive joint vetch	T	E	Camden, Gloucester, Salem
<i>Aplectrum hyemale</i>	Putty root	-	E	Gloucester
<i>Aristida lanosa</i>	Wooly three-awn grass	-	E	Camden, Salem
<i>Asimina triloba</i>	Pawpaw	-	E	Gloucester
<i>Aster radula</i>	Low rough aster	-	E	Camden, Gloucester, Salem
<i>Bouteloua curtipendula</i>	Side oats grama grass	-	E	Gloucester
<i>Cacalia atriplicifolia</i>	Pale Indian plantain	-	E	Camden, Gloucester
<i>Calystegia spithamea</i>	Erect bindweed	-	E	Camden, Salem
<i>Cardamine longii</i>	Long's bittercress	-	E	Gloucester
<i>Carex aquatilis</i>	Water sedge	-	E	Camden
<i>C. bushii</i>	Bush's sedge	-	E	Camden
<i>C. cumulata</i>	Clustered sedge	-	E	Camden
<i>C. limosa</i>	Mud sedge	-	E	Gloucester
<i>C. polymorpha</i>	Variable sedge	-	E	Gloucester
<i>Castanea pumila</i>	Chinquapin	-	E	Gloucester, Salem
<i>Cercis canadensis</i>	Redbud	-	E	Camden
<i>Chenopodium rubrum</i>	Red goosefoot	-	E	Camden
<i>Commelina erecta</i>	Slender dayflower	-	E	Camden
<i>Cyperus lancastris</i>	Lancaster flat sedge	-	E	Camden, Gloucester
<i>C. polystachyos</i>	Coast flat sedge	-	E	Salem
<i>C. pseudovegetus</i>	Marsh flat sedge	-	E	Salem
<i>C. retrofractus</i>	Rough flat sedge	-	E	Camden, Gloucester
<i>Dalibarda repens</i>	Robin-run-away	-	E	Gloucester
<i>Diodia virginiana</i>	Larger buttonweed	-	E	Camden
<i>Draba reptans</i>	Carolina Whitlow-grass	-	E	Camden, Gloucester
<i>Eleocharis melanocarpa</i>	Black-fruit spike-rush	-	E	Salem
<i>E. equisetoides</i>	Knotted spike-rush	-	E	Gloucester
<i>E. tortilis</i>	Twisted spike-rush	-	E	Gloucester
<i>Elephantopus carolinianus</i>	Carolina elephant-foot	-	E	Gloucester, Salem
<i>Eriophorum gracile</i>	Slender cotton-grass	-	E	Gloucester
<i>E. tenellum</i>	Rough cotton-grass	-	E	Camden, Gloucester
<i>Eupatorium capillifolium</i>	Dog fennel thoroughwort	-	E	Camden
<i>E. resinsum</i>	Pine barren boneset	-	E	Camden, Gloucester,
<i>Euphorbia purpurea</i>	Darlington's glade spurge	-	E	Salem

Table 1 Endangered and Threatened Species Recorded in Salem County and Counties Crossed by Transmission Lines (Continued)

Scientific Name	Common Name	Status		County ^c
		Federal ^a	State ^{a,b}	
<i>Glyceria grandis</i>	American manna grass	-	E	Camden
<i>Gnaphalium helleri</i>	Small everlasting	-	E	Camden
<i>Gymnopogon brevifolius</i>	Short-leaf skeleton grass	-	E	Gloucester
<i>Helonias bullata</i>	Swamp-pink	T	E	Camden, Gloucester, Salem
<i>Hemicarpha micrantha</i>	Small-flower halfchaff sedge	-	E	Camden
<i>Hottonia inflata</i>	Featherfoil	-	E	Salem
<i>Hydrastis canadensis</i>	Golden seal	-	E	Camden
<i>Hydrocotyle ranunculoides</i>	Floating marsh-pennywort	-	E	Salem
<i>Hypericum adpressum</i>	Barton's St. John's-wort	-	E	Salem
<i>Juncus caesariensis</i>	New Jersey rush	-	E	Camden
<i>J. torreyi</i>	Torrey's rush	-	E	Camden
<i>Kuhnia eupatorioides</i>	False boneset	-	E	Camden
<i>Lemna perpusilla</i>	Minute duckweed	-	E	Camden, Salem
<i>Limosella subulata</i>	Awl-leaf mudwort	-	E	Camden
<i>Linum intercursum</i>	Sandplain flax	-	E	Camden, Salem
<i>Luzula acuminata</i>	Hairy wood-rush	-	E	Gloucester, Salem
<i>Melanthium virginicum</i>	Virginia bunchflower	-	E	Camden, Gloucester, Salem
<i>Micranthemum micranthemoides</i>	Nuttall's mudwort	-	E	Camden, Gloucester
<i>Muhlenbergia capillaris</i>	Long-awn smoke grass	-	E	Gloucester
<i>Myriophyllum tenellum</i>	Slender water-milfoil	-	E	Camden
<i>M. pinnatum</i>	Cut-leaf water-milfoil	-	E	Salem
<i>Nelumbo lutea</i>	American lotus	-	E	Camden, Salem
<i>Nuphar microphyllum</i>	Small yellow pond-lily	-	E	Camden
<i>Onosmodium virginianum</i>	Virginia false-gromwell	-	E	Camden, Gloucester, Salem
<i>Ophioglossum vulgatum pycnostichum</i>	Southern adder's tongue	-	E	Salem
<i>Panicum aciculare</i>	Bristling panic grass	-	E	Gloucester
<i>Penstemon laevigatus</i>	Smooth beardtongue	-	E	Gloucester
<i>Plantago pusilla</i>	Dwarf plantain	-	E	Camden
<i>Platanthera flava flava</i>	Southern rein orchid	-	E	Camden
<i>Pluchea foetida</i>	Stinking fleabane	-	E	Camden
<i>Polemonium reptans</i>	Greek-valerian	-	E	Salem
<i>Polygala incarnata</i>	Pink milkwort	-	E	Camden, Gloucester

Table 1 Endangered and Threatened Species Recorded in Salem County and Counties Crossed by Transmission Lines (Continued)

Scientific Name	Common Name	Status		County ^c
		Federal ^a	State ^{a,b}	
<i>Prunus angustifolia</i>	Chickasaw plum	-	E	Camden, Gloucester, Salem
<i>Pycnanthemum clinopodioides</i>	Basil mountain mint	-	E	Camden
<i>P. torrei</i>	Torrey's mountain mint	-	E	Gloucester
<i>Quercus imbricaria</i>	Shingle oak	-	E	Gloucester
<i>Q. lyrata</i>	Overcup oak	-	E	Salem
<i>Rhododendron atlanticum</i>	Dwarf azalea	-	E	Salem
<i>Rhynchospora globularis</i>	Coarse grass-like beaked-rush	-	E	Camden, Gloucester, Salem
<i>R. knieskernii</i>	Knieskern's beaked-rush	T	E	Camden
<i>Sagittaria teres</i>	Slender arrowhead	-	E	Camden
<i>Scheuchzeria palustris</i>	Arrow-grass	-	E	Camden, Gloucester
<i>Schwalbea americana</i>	Chaffseed	E	E	Camden
<i>Scirpus longii</i>	Long's woolgrass	-	E	Camden
<i>S. maritimus</i>	Saltmarsh bulrush	-	E	Camden
<i>Scutellaria leonardii</i>	Small skullcap	-	E	Salem
<i>Spiranthes laciniata</i>	Lace-lip ladies' tresses	-	E	Gloucester
<i>Stellaria pubera</i>	Star chickweed	-	E	Camden
<i>Triadenum walteri</i>	Walter's St. John's wort	-	E	Camden
<i>Utricularia biflora</i>	Two-flower bladderwort	-	E	Gloucester, Salem
<i>Valerianella radiata</i>	Beaked cornsalad	-	E	Gloucester
<i>Verbena simplex</i>	Narrow-leaf vervain	-	E	Camden, Gloucester
<i>Vernonia glauca</i>	Broad-leaf ironweed	-	E	Gloucester, Salem
<i>Vulpia ellioatea</i>	Squirrel-tail six-weeks grass	-	E	Camden, Gloucester, Salem
<i>Wolffiella floridana</i>	Sword bogmat	-	E	Salem
<i>Xyris fimbriata</i>	Fringed yellow-eyed grass	-	E	Camden

a. E = Endangered; T = Threatened; C = Candidate; - = Not listed.

b. State status for birds separated by a slash (/) indicates a dual status. First status refers to the state breeding population, and the second status refers to the migratory or winter population. S = Stable species (a species whose population is not undergoing any long-term increase or decrease within its natural cycle); U = Undetermined (a species about which there is not enough information available to determine the status) (NJDEP 2008b).

c. Source of county occurrence: USFWS (undated); NJDEP (2008a); (NJDEP (2008c).

d. Sea turtles and sturgeon were not included in county lists maintained by USFWS (undated) and NJDEP (2008a), but are known by PSEG to occur in the Delaware River (see text).



STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENTAL CONTROL
DIVISION OF FISH & WILDLIFE
NATURAL HERITAGE & ENDANGERED SPECIES
4876 HAY POINT LANDING ROAD
SMYRNA, DELAWARE 19977

TELEPHONE: (302) 653-2880
FAX: (302) 653-3431

April 21, 2009
(Request received March 6, 2009)

Edward J. Keating
PSEG Nuclear LLC
PO Box 236
Hancocks Bridge, NJ 08038-0236

*RE: Operating license renewal-Salem and Hope Creek Generating Stations
Alignment from Artificial Island, NJ across DE River ending in New Castle County, DE*

Dear Mr. Keating:

Thank you for contacting the Natural Heritage and Endangered Species program about information on rare, threatened and endangered species, unique natural communities, and other significant natural resources as they relate to the above referenced project.

Rare Species

The attached table (Table 1) includes a list of species of greatest conservation need (SCGN¹) that occur within or in close proximity to the transmission alignment that begins at the Salem and Hope Creek generating stations, crosses the Delaware River, and ends just south of Newark in New Castle County, DE. We have not surveyed all of the areas within Delaware and additional rare species may occur within the alignment.

Currently there are no concerns with license renewal of the existing alignment, however, if maintenance activities are planned (tree clearing, heavy equipment access), further coordination with our Division will be necessary. Several SGCN and habitat that potentially supports those species could be impacted by maintenance activities depending on the scope of work.

State Natural Area

A portion of the alignment occurs within a State Natural Area. State Natural Areas involve areas of land or water, or of both land and water, whether in public or private ownership, which either

¹ Species of greatest conservation need (SGCN) are identified in the Delaware Wildlife Action Plan (DEWAP). DEWAP is a comprehensive strategy for conserving the full array of native wildlife and habitats-common and uncommon- as vital components of the state's natural resources. This document can be viewed via our program website at <http://www.dnrec.state.de.us/nhp>. This document also contains a list of species of greatest conservation need, species-habitat associations, and maps of key wildlife habitat

PSEG 2009 Hope Crk-Salem license renewal

Delaware's Good Nature Depends on You!

retains or has reestablished its natural character (although it need not be undisturbed), or has unusual flora or fauna, or has biotic, geological, scenic or archaeological features of scientific or educational value. State Natural Areas are depicted on maps maintained by the Department of Natural Resources and Environmental Control, Division of Parks and Recreation, Natural Areas Program, as approved by the Department Secretary and upon recommendation by a governor appointed Natural Areas Advisory Council.

If you require further information about State Natural Areas, please contact Eileen Butler, Natural Areas Program Manager, at (302) 739-9235.

Key Wildlife Habitat

A portion of the alignment occurs within areas mapped as key wildlife habitat in the Delaware Wildlife Action Plan (DEWAP). DEWAP is a comprehensive strategy for conserving the full array of native wildlife and habitats-common and uncommon- as vital components of the state's natural resources. This document can be viewed via our program website at <http://www.dnrec.state.de.us/nhp>. This document also contains a list of species of greatest conservation need as well as species-habitat associations.

We are continually updating records on Delaware's rare, threatened and endangered species, unique natural communities and other significant natural resources. If the start of the project is delayed more than a year past the date of this letter, please contact us again for the latest information. If you have any questions, please contact me at (302) 653-2880 ext. 101.

Sincerely,



Edna J. Stezlar

Biologist/Environmental Review Coordinator

(Please see Invoice on next page)

PSEG 2009 Hope Crk-Salem license renewal

INVOICE
- PAYMENT DUE -

It is our policy to charge a fee for this environmental review service. This letter constitutes an invoice for \$70.00 (\$35.00/hour for 2 hours). Please make your check payable to "Delaware Division of Fish and Wildlife" and submit to:

DE Division of Fish and Wildlife
89 Kings Hwy.
Dover, DE 19901
ATTN: Carla Cassell-Carter

In order for us to properly process your payment, you must reference
"PSEG 2009 Hope Crk-Salem license renewal" on your check.

cc: Carla Cassell-Carter, Fish and Wildlife Coordination/Accounting; Code to 9892

PSEG 2009 Hope Crk-Salem license renewal

Environmental Report for License Renewal
Appendix C Special Status Species Correspondence

Table 1. A review of our GIS database indicates the following species of greatest conservation need occur within or adjacent to the transmission alignment that begins at the Salem and Hope Creek generating stations, crosses the Delaware River, and ends just south of Newark in New Castle County, DE.

Scientific Name	Common Name	Taxon	State Rank	State Status	Global Rank	Federal Status
<i>Buteo lineatus</i>	Red-shouldered Hawk	Bird	S2B/S3N		G5	
<i>Coccyzus erythrophthalmus</i>	Black-billed Cuckoo	Bird	S1B		G5	
<i>Pandion haliaetus</i>	Osprey	Bird	S3B		G5	
<i>Caretta caretta</i>	loggerhead sea turtle	Reptile	†SNA	E	G3	T
<i>Chelonia mydas</i>	green sea turtle	Reptile	†SNA	E	G3	T
<i>Dermochelys coriacea</i>	leatherback sea turtle	Reptile	†SNA	E	G2	E
<i>Lepidochelys kempii</i>	Kemp's ridley sea turtle	Reptile	†SNA	E	G1	E
<i>*Glyptemys muhlenbergii</i>	Bog turtle	Reptile	S1	E	G3	T
<i>Acipenser brevirostrum</i>	short-nosed sturgeon	Fish	S3N		G3	E
<i>Acipenser oxyrinchus</i>	Atlantic sturgeon	Fish	S2	E	G3	C
<i>Dromogomphus spinosus</i>	black-shouldered spinyleg	Damselfly	S2		G5	
<i>Enallagma vesper</i>	vesper bluet	Damselfly	S2		G5	
<i>Cuphea viscosissima</i>	blue waxweed	Plant	S2		G5	
<i>Isotria verticillata</i>	Large whorled pogonia	Plant	S2		G5	
<i>Lysimachia hybrid</i>	False-hybrid loosestrife	Plant	S2		G5	

†SNA rank is currently being re-evaluated due to evidence that indicates the Delaware Estuary is an important foraging and developmental habitat for sea turtles

* A review of our GIS database has revealed that there may be suitable habitat for the federally listed bog turtle (*Glyptemys muhlenbergii*) within or in close proximity to the transmission alignment.

State Rank: S1- extremely rare within the state (typically 5 or fewer occurrences); S2- very rare within the state (6 to 20 occurrences); S3-rare to uncommon in Delaware, B - Breeding; N - Nonbreeding; SX-Extirpated or presumed extirpated from the state. All historical locations and/or potential habitat have been surveyed; SH- Historically known, but not verified for an extended period (usually 15+ years); there are expectations that the species may be rediscovered; SE-Non-native in the state (introduced through human influence); not a part of the native flora or fauna., SNR-not yet ranked in Delaware, SNA-occurrences in DE of limited conservation value

State Status: E – endangered, i.e. designated by the Delaware Division of Fish and Wildlife as seriously threatened with extinction in the state;

Global Rank: G1 - imperiled globally because of extreme rarity (5 or fewer occurrences worldwide); G2 - imperiled globally because of great rarity (6 to 20 occurrences); G3 - either very rare and local throughout its range (21 to 100 occurrences) or found only locally in a restricted range; G4 - apparently secure globally but uncommon in parts of its range; G5 - secure on a global basis but may be uncommon locally; T_ - variety or subspecies rank; Q – questionable taxonomy;

Federal Status: E – endangered, i.e. designated by the U.S. Fish and Wildlife Service as being in danger of extinction throughout its range; T – threatened, i.e. designated by USFWS as being likely to become endangered in the foreseeable future throughout all or a significant portion of its range; C-candidate – Taxa for which the U.S. Fish and Wildlife Service has on file enough substantial information on biological vulnerability and threat(s) to support proposals to list them as endangered or threatened species.