**UNITED STATES DEPARTMENT OF COMMERCE**
**National Oceanic and Atmospheric Administration**
NATIONAL MARINE FISHERIES SERVICE

Habitat Conservation Division
James J. Howard Marine Sciences Laboratory
74 Magruder Road
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January 10, 2011

Bo Pham, Chief
Project Branch 1
Division of License Renewal
Office of Nuclear Reactor Regulation
US Nuclear Regulatory Commission
Washington, DC 20555-0001

Attn: Leslie Perkins

Re: Salem and Hope Creek Nuclear Generating Station Generic Environmental Impact Statement (GEIS) for License Renewal Review of Nuclear Plants

Dear Mr. Pham:

The National Marine Fisheries Service (NMFS) Northeast Region Habitat Conservation Division is in receipt of your letter dated November 3, 2010 regarding the U. S. Nuclear Regulatory Commission's (NRC) preparation and distribution of the subject draft supplement report for NMFS comment.

The document was prepared under the provisions of the National Environmental Policy Act of 1969, as amended and, as part of the NRC's ongoing review of an application submitted by PSE&G Nuclear, LLC for the renewal of the operating licenses for Hope Creek Generating Station (Hope Creek) and Salem Nuclear Generating Station, Units 1 and 2 (Salem) both located along the Delaware River in an area of Salem County, New Jersey known as Artificial Island.

Artificial Island is a man-made peninsula with an area of 1,500-acre. Prior to its creation by the U.S. Army Corps of Engineers (Corps) in the early 20th century as an upland disposal site for hydraulically dredged spoils, the site was a natural sandbar that projected into the river. The island is characterized by low and flat tidal marsh and grassland with an average elevation of about 9 feet above mean sea level (msl) and a maximum elevation of about 18 ft above msl (AEC, 1973).

Located less than a mile northeast of the site is the upper section of the Mad Horse Creek Fish and Wildlife Management Area. This is a noncontiguous, 9,500-acre wildlife area managed by the New Jersey Division of Fish and Wildlife (NJDFW) with sections northeast, east, and southeast of the site (NJDFW, 2009a).

All surface water in Salem County drains to the Delaware River and Bay. Some streams flow directly to the river, while others join sub-watersheds before reaching their destination. The tides of the Atlantic Ocean influence the entire length of the Delaware River in Salem County. Tidal marshes are located along the lower stretches of the Delaware River and are heavily influenced by the tides, flooding twice daily. The southwestern portion of Salem County is predominately marshland, and to the north, tidal

marshes are found in the western sections of the county at the mouths of river systems, including the Salem River and Oldmans Creek (Salem County, 2008).

The Delaware River Basin is densely populated, and surface water resources within the river are used for a variety of purposes. Approximately 75 percent of the length of the non-tidal Delaware River is designated as part of the National Wild and Scenic Rivers System. In the tidal portion of the river, water is accessed for use in industrial operations, including power plant cooling systems.

Salem and Hope Creek are located at the southern end of Artificial Island on the New Jersey (eastern) bank of the Delaware River at River Mile (RM) 50 (River Kilometer (RK) 80) and RM 51 (RK 82), respectively. The facilities are located on the Lower Region portion of the river, which is designated by the Delaware River Basin Commission as the area of the river subject to tidal influence, between the Delaware Bay and Trenton, NJ (DRBC, 2008a). The Lower Region and the Delaware Bay together form the Estuary Region of the river, which is included as the Partnership for the Delaware Estuary within the EPA's National Estuary Program (EPA, 2010d). The Delaware Estuary is the primary source of the cooling water for both facilities and receives their effluents. Its use at the facilities is regulated by both the DRBC and the State of New Jersey.

The Delaware Estuary supports an abundance of aquatic resources in a variety of habitats. Open water habitats include oceanic density salt water, tidally-influenced water of variable salinities, and tidal freshwater areas. Moving south from the Delaware River to the mouth of the bay, there is a continual transition from fresh to salt water. Additional habitat types occur along the edges of the estuary in brackish and freshwater marshes. The bottom of the estuary provides many different benthic habitats, with their characteristics dictated by salinity, tides, water velocity, and substrate type. As described by a study sponsored by Public Service Electric and Gas Company, sediments in the estuary near Artificial Island are primarily mud, muddy sand, and sandy mud (PSEG, 2006c).

At Artificial Island, the estuary is tidal with a net flow to the south, while the width of the estuary is approximately 16,000 ft. The Corps maintains a dredged navigation channel near the center of the estuary at about 6,600 ft west of the shoreline at Salem and Hope Creek. The navigation channel is about 40 ft deep and 1,300 ft wide. On the New Jersey side of the channel, water depths in the open estuary at mean low water are fairly uniform at about 20 ft.

The Delaware Bay, Estuary, and River make up an ecologically and hydrologically complex system that supports many fish species. Most estuarine fish species have complex life cycles and are present in the estuary at various life stages; thus, they may play several ecological roles during their lives. Changes in the abundance of these species can have far-reaching effects, both within the bay and beyond, including effects on commercial fisheries. This system provides an important migratory pathway as well as critical spawning, nursery and forage habitat for many anadromous fishes and is of significant concern for the NMFS.

In compliance with Salem's 1994 and 2001 NJPDES permits, PSEG implemented the Estuary Enhancement Program (EEP), which has preserved and/or restored more than 20,000 acres of wetland and adjoining upland buffers (PSEG, 2009a). In particular, the program restored 4,400 acres of formerly diked salt hay farms to reestablish conditions suitable for the growth of low marsh vegetation such as saltmarsh cord grass (*Spartina alterniflora*) and provide for tidal exchange with the estuary. These restored wetlands worked to increase the production of fish and shellfish by increasing primary production in the detritus-based food web of the Delaware Estuary. Both primary and secondary consumers may have benefited from this increase in production, including many of the representative

species sampled at Salem and some of the federally managed species with essential fish habitat (EFH) in the estuary. PSEG (2006c) estimated the increase in production of secondary consumers due to this restoration to be at least 18.6 million lbs/yr (8.44 million kg/yr). These secondary consumers include species of fish and shellfish which are also affected by impingement and entrainment at Salem, as well as other species.

To determine the impacts of operation from Salem and HC GS on the aquatic environment of the Delaware Estuary, PSEG has performed annual monitoring of the estuary since 1977. The 1977 permitting rule for Section 316(b) of the Clean Water Act included a provision to select representative species (RS) to focus such investigations (PSEG, 1984; 1999).

RS were selected based on several criteria: susceptibility to impingement and entrainment at the facility, importance to the ecological community, recreational or commercial value, and threatened or endangered status. PSEG currently monitors 12 species as RS: blueback herring (*Alosa aestivalis*), alewife (*Alosa pseudoharengus*), American shad (*Alosa sapidissima*), bay anchovy (*Anchoa mitchilli*), Atlantic menhaden (*Brevoortia tyrannus*), weakfish (*Cynoscion regalis*), spot (*Leiostomus xanthurus*), Atlantic silverside (*Menidia menidia*), Atlantic croaker (*Micropogonias undulatus*), white perch (*Morone americana*), striped bass (*Morone saxatilis*), and bluefish (*Pomatomus saltatrix*).

Our comments on the GEIS are as follows:

**General Comments**:
According to the GEIS, the stated purpose and need for the proposed action; whether or not to renew the existing licenses of both Hope Creek and Salem for an additional 20 years, is to provide an option that allows for the power generation capability beyond the term of a current nuclear power plant operating license.

The GEIS outlines several alternatives, including other methods of power generation as well as the no-action option, considered by the NRC. Each alternative was evaluated against the same criteria and impacts areas that were used in assessing those of license renewal. The document provides a preliminary analysis that evaluates the site-specific environmental impacts of, and alternatives to the proposed action. Alternatives considered include replacement power from a new supercritical coal-fired generation and natural gas combined-cycle generation plant; a combination of alternatives that includes natural gas combined-cycle generation, energy conservation/energy efficiency, and wind power; and not renewing the operating licenses (the no-action alternative).

Therefore, it is the NRC's assertion that the environmentally preferred alternative in this case is the license renewal of Salem and Hope Creek. All other alternatives capable of meeting the needs currently served by Salem and Hope Creek entail potentially greater impacts than the proposed action of license renewal of Salem and Hope Creek.

The GEIS further addressed reactor design and structural specifications; waste management protocols; operational logistics; environmental impacts; improving traffic patterns into and out of the project area; and providing safer operating conditions and reducing accidents.

Based upon several criteria:

(1) Analysis and findings in the GEIS,
(2) Information submitted in the Salem and HCGS ERs,

(3) Consultation with other Federal, State, and local agencies,
(4) Review of other pertinent studies and reports, and
(5) Consideration of public comments received during the scoping process,

the NRC has stated that the range of environmental impacts associated with license renewal for Salem and Hope Creek will be small to moderate in magnitude.

Additionally, the NRC has concluded that impacts to fish and shellfish from entrainment, impingement, and heat shock at Salem and Hope Creek would not warrant additional mitigation beyond those presently undertaken by the PSEG Estuary Enhancement Program.

Stressors associated with the proposed action and other activities or processes that may contribute to cumulative impacts on the aquatic resources of the Delaware Estuary include the following:

- continued operation of the once-through cooling system for Salem Units 1 and 2
- continued operation of the closed-cycle cooling system for Hope Creek
- construction and operation of proposed additional unit at Salem/Hope Creek site
- continued withdrawal and discharge of water to support power generation, industry, and municipal water suppliers
- fishing pressure
- habitat loss and restoration
- changes in water quality
- climate change.

Each of these stressors may contribute to cumulative impacts on aquatic resources of the Delaware Estuary and consequently, influence the structure and function of estuarine food webs and result in observable changes to the aquatic resources in the Delaware Estuary. In most cases, it is not possible to determine quantitatively the impact of individual stressors or groups of stressors on aquatic resources.

The NMFS has identified power plants as a potential threat to critical habitat because of the plant's use of coastal waters for cooling and discharge of heated water back into the marine environment. Coastal power plants, with once-through cooling systems, may affect NOAA trust resource habitat by discharging thermal effluent, discharge of effluents with chemicals, and by the potential impingement and entrainment of species.

Taking advantage of the best available technology to mitigate impingement, entrainment, and thermal impacts is best represented by the use of cooling towers that use a closed cycle cooling system, which reduces water intake rates as much as 70 percent. Incorporating such ameliorative measures such as cooling towers to control temperature would likely result in a proportionate reduction in fish and shellfish mortalities.

For that reason, NJDEP has the authority to determine what constitutes compliance with CWA Sections 316(a) and (b) which regulate thermal discharges and the adverse impacts of cooling water intake structures, respectively. Cooling towers are but one means of complying with the requirements of these sections of the CWA

In most modern U.S. nuclear generating facilities, condenser cooling water circulates through cooling towers or a cooling pond system (either of which are called closed-cycle cooling systems). Older plants often withdraw cooling water directly from existing rivers or lakes and discharge heated water directly to

the same body of water (called open-cycle cooling). Salem and Hope Creek use different systems for condenser cooling water and service water, but both withdraw from and discharge water to the Delaware Estuary (PSEG, 2009a; 2009b). All liquid discharges to the Delaware Estuary are maintained in compliance with 10 CFR Part 20, "Standards for Protection Against Radiation" (PSEG, 2009b).

Salem is a two-unit (Units 1 and 2) plant each operating open-cycle cooling water using once-through cooling water system (CWS), while Hope Creek operates a closed-cycle cooling system with a natural draft cooling tower. Salem withdraws brackish water from the Delaware Estuary through one intake structure located at the shoreline on the south end of the site. The Salem facility includes two intake structures, one for the coolant water system, and the other for the service water system. Both are equipped with several features (ice barriers, trash racks, traveling screens, fish return systems, etc.) to prevent intake of debris and biota into the pumps (PSEG, 2006c). The CWS withdraws brackish water from the Delaware Estuary using circulating water pumps through an intake structure located on the shoreline at the south end of the site. Water is discharged north of the CWS intake structure via a pipe that extends 500 ft from the shoreline. PSEG has an NDPDES permit for Salem from the NJDEP. The permit sets the maximum water usage from the Delaware Estuary to each of Salem's two reactor units.

Salem's service water system (SWS) intake is located approximately 400 ft (122 m) north of the CWS intake. The SWS intake structure is also equipped with trash racks, traveling screens, and filters to remove debris and biota from the intake water stream, but do not have a modified Ristroph type travelling screen or fish return system. Backwash water is returned to the estuary.

Both the Salem CWS and SWS discharge water back to the Delaware Estuary through a single return that serves both systems and is located between the Salem CWS and SWS intakes. Cooling water from Salem is discharged through six adjacent pipes 7 ft in diameter and spaced 15 ft apart on center that merge into three pipes 10 ft in diameter (PSEG, 2006c). The discharge piping extends approximately 500 ft from the shore (PSEG, 1999). The discharge pipes are buried for most of their length until they discharge horizontally into the water of the estuary at a depth at mean tidal level of about 31 ft. The discharge is approximately perpendicular to the prevailing currents.

Hope Creek is a one-unit station which uses a closed-cycle circulating water system for condenser cooling that consists of a single natural draft cooling tower and associated withdrawal, circulation, and discharge facilities. The Hope Creek cooling tower is a 512-foot high single counter-flow, hyperbolic, natural draft cooling tower (PSEG, 2008a).

Like Salem, Hope Creek withdraws brackish water from the Delaware River to supply an SWS, which cools auxiliary and other heat exchange systems (PSEG, 2009b). Hope Creek uses a single intake structure to supply water from the Delaware Estuary to the SWS. The Hope Creek SWS intake is located on the shore of the river and is equipped with pumps and associated equipment (trash racks, traveling screens, and a fish-return system). Water is drawn into the SWS through trash racks and passes through the traveling screens. After passing through the traveling screens, the estuary water enters the service water pumps. The cooling tower blow-down and other facility effluents are discharged to the estuary through an underwater conduit located 1,500 ft upstream of the Hope Creek SWS intake. The Hope Creek discharge pipe extends 10 ft offshore and is situated at mean tide level. The discharge from Hope Creek is also regulated under the terms of NJPDES permit number NJ0025411 (NJDEP, 2001a).

The withdrawal of Delaware River water for the Hope Creek CWS and SWS systems is regulated under the terms of Hope Creek NJPDES Permit No. NJ0025411 and is also authorized by the DRBC. Although

it requires measurement and reporting, the NJPDES permit does not specify limits on the total withdrawal volume of Delaware River water for Hope Creek operations (NJDEP, 2003).

**Essential Fish Habitat (EFH)**

Section 305 (b)(2) of the 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act (MSA) requires all federal agencies to consult with NOAA Fisheries on any action authorized, funded, or undertaken by that agency that may adversely affect EFH. Included in this consultation process is the preparation of a complete and appropriate EFH assessment to provide necessary information on which to consult. Our EFH regulation at 50 CFR 600.905 mandates the preparation of EFH assessments and generally outlines each agency's obligations in this consultation procedure.

The estuarine portions of the Delaware River and its tributaries including the estuarine areas crossed by the transmission lines have been designated as essential fish habitat (EFH) for a wide variety of species including red hake (*Urophycis chuss*), winter flounder (*Pseudopleuronectes americanus*), windowpane flounder (*Scophthalmus aquosus*), bluefish (*Pomatomus saltatrix*), Atlantic butterfish (*Peprilus triacanthus*), scup (*Stenotomus chrysops*), summer flounder (*Paralichthys dentatus*), scup (*Stenotomus chrysops*), black sea bass (*Centropristis striata*), king mackerel (*Scomberomorus cavalla*), Spanish mackerel (*Scomberomorus maculatus*), cobia (*Rachycentron canadum*), little skate (*Leucoraja erinacea*), winter skate (*Leucoraja ocellata*) and clearnose skate (*Raja eglanteria*). A more detailed listing of EFH and federally managed species and EFH consultation requirements can be found on our website at: www.nero.nmfs.gov/hcd.

The EFH final rule published in the Federal Register on January 17, 2002 defines an adverse effect as: "any impact which reduces the quality and/or quantity of EFH." The rule further states that:

> An adverse effect may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat and other ecosystems components, if such modifications reduce the quality and/or quantity of EFH. Adverse effects to EFH may result from action occurring within EFH or outside EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

The rule also states:

> Loss of prey may be an adverse effect on EFH and managed species because the presence of prey makes waters and substrate function as feeding habitat and the definition of EFH includes waters and substrate necessary to fish for feeding. Therefore, actions that reduce the availability of a major prey species, either through direct harm or capture, or through adverse impacts to the prey species' habitat that are known to cause a reduction in the population of the prey species, may be considered adverse effects on EFH if such actions reduce the quality of EFH.

In order to complete the required EFH consultation, NRC must submit a full and complete EFH assessment that considers the individual and cumulative and the direct and indirect impacts of the proposed relicensing on EFH, federal managed species and their prey recognizing the definition of adverse impact discussed above. The required contents of an EFH assessment includes: 1) a description of the action; 2) an analysis of the potential adverse effects of the action on EFH and the managed species; 3) the NRC's conclusions regarding the effects of the action on EFH; 4) proposed mitigation, if applicable. Other information that should be contained in the EFH assessment includes: 1) the results of on-site inspections to evaluate the habitat and site-specific effects; 2) the views of recognized experts on

the habitat or the species that may be affected; 3) a review of pertinent literature and related information; and 5) an analysis of alternatives to the action that could avoid or minimize the adverse effects on EFH. Please note that any impacts to prey species of federally managed fish species such as juvenile *Alosids*, bay anchovy (*Anchoa mitchilli*), Atlantic silverside (*Menidia menidia*), striped killifish (*Fundulus majalis*), mummichog (*Fundulus heteroclitus*) and weakfish (*Cynoscion regalis*) would be considered an impact to EFH.

Salem and Hope Creek are located near the interface of the salinity zones classified by the NMFS as the tidal freshwater and mixing salinity zones. The area of the Delaware Estuary adjacent to Artificial Island is designated as EFH for various life stages of several species of fish including red hake (*Urophycis chuss*), winter flounder (*Pseudopleuronectes americanus*), windowpane flounder (*Scophthalmus aquosus*), bluefish (*Pomatomus saltatrix*), Atlantic butterfish (*Peprilus triacanthus*), scup (*Stenotomus chrysops*), summer flounder (*Paralichthys dentatus*), scup (*Stenotomus chrysops*), black sea bass (*Centropristis striata*), king mackerel (*Scomberomorus cavalla*), Spanish mackerel (*Scomberomorus maculatus*), cobia (*Rachycentron canadum*), little skate (*Leucoraja erinacea*), winter skate (*Leucoraja ocellata*) and clearnose skate (*Raja eglanteria*). A more detailed listing of EFH and federally managed species and EFH consultation requirements can be found on our website at: http://www.nero.noaa.gov/hcd/STATES4/new_jersey/39207530.html. Additional designations for the Delaware Bay including the mixing zone can be found on our website as well (http://www.nero.noaa.gov/hcd/del1.html). The use of both data sets is required to develop a complete list of EFH for the project site.

Juvenile *Alosa* species have all been identified as prey species for windowpane (*Scophthalmus aquosus*) and summer flounder (*Paralichthys dentatus*) in Steimle et al. (2000). Windowpane and summer flounder are federally managed species whose EFH has been designated in the mixing zone of the Delaware River

Through a comparative analysis of species' salinity requirements during each of its life stages, PSEG identified four; winter flounder, windowpane flounder, summer flounder, and Atlantic butterfish as those that would potentially be the most adversely affected in the area surrounding Artificial Island. In general, the preliminary discussion of the impacts to specific federally managed species contained within the GEIS incorporates the suggested modification points from our previous response letter concerning inclusion of certain species and their respective life stages as well as the indirect impacts to forage species. We understand that the NRC is preparing a more complete EFH assessment for NMFS review and expect to transmit the finished document shortly.

**Fish and Wildlife Coordination Act**

Because landing statistics and the number of fish observed on annual spawning runs indicate a drastic decline in alewife and blueback herring populations throughout much of their range since the mid-1960's, they have been designated as species of concern by NMFS in a Federal Register Notice dated October 17, 2006 (71 FRN 61022). "Species of concern" are those species about which NMFS has some concerns regarding status and threats, but for which insufficient information is available to indicate a need to list the species under the Endangered Species Act. NMFS would not support any actions that would disrupt or prevent the upstream migration of anadromous fish, or would reduce or degrade their spawning, nursery or forage habitat.

The Delaware Estuary including its tributaries provides habitat for a wide variety of NOAA trust resources including those RS monitored under PSEG EHP as well as American eel (*Anguilla rostrata*), Atlantic croaker (*Micropogonias undulatus*), hickory shad (*Alosa mediocris*), spot (*Leiostomus*

*xanthurus*) tautog (*Tautoga onitis*), yellow perch (*Perca flavescens*), hogchoker (*Trinectes maculatus*), and many others.

To date, there has been no comprehensive mapping of submerged aquatic vegetation (SAV) in the Delaware Estuary. However, SAV including wild celery (*Vallisneria americana*) can be found in some areas of the Delaware River and its tributaries. SAV provides valuable nursery, forage and refuge habitat for a variety of fish including striped bass, American shad, alewife, and blueback herring. It is also an important food source for waterfowl. The Delaware Bay in the project area receives input from numerous smaller creeks and rivers emanating from both States' which function similarly. As water quality in the Delaware River, Bay and Estuary continues to improve, more areas of SAV may be found.

The NJDEP has sampled the Delaware River in the project area for nearly 30 years since 1980. This long-term survey documents the use of the this portion of the river by a wide variety of species including blueback herring, alewife, American shad American shad(*Alosa sapidissima*), American eel (*Anguilla rostrata*), Atlantic herring (*Clupea harengus*), Atlantic menhaden (*Brevoortia tyrannus*), bay anchovy, (*Anchoa mitchilli*), blueback herring, gizzard shad (*Dorosoma cepedianum*), hogchoker (*Trinectes maculatus*), striped bass, yellow perch (*Perca flavescens*), white perch (*Morone americana*), Atlantic silverside (*Menidia menidia*), and many others (NJDEP, 2010). PSEG's own monitoring data is consistent with these findings.

In recent years, efforts have been made to restore oyster beds in Delaware Bay. Native oysters are ecologically important species. Since 2004, the Army Corps of Engineers has worked with the States of New Jersey and Delaware to plant shell in portions of natural oyster beds in Delaware Bay. According to the New Jersey Department of Environmental Protection, an expansive area of habitat has been identified near the Salem and Hope Creek.

Blue crab (*Callinectes sapidus*) can also be found in the vicinity of the Salem and Hope Creek. The crabs can generally be found in the lower salinity areas of the estuary in the summer and higher salinities in the winter. Following mating in the summer, which typically occurs in lower salinity waters, the females move to high salinity waters to spawn. After spawning, the larvae move toward the lower salinity areas to mature.

Horseshoe crabs (*Limulus polyphemus)* remain a species of concern in the Delaware Estuary. In recent years, NMFS has banned fishing for horseshoe crabs in federal waters off the mouth of Delaware Bay. The States of New Jersey and Delaware have also taken steps to restrict the harvest of horseshoe crabs in State waters. The ban provides additional protection for local horseshoe crab stocks and ensures that declining populations of migratory shorebirds have an abundant source of horseshoe crab eggs to feed upon when they stop to rest in Delaware Bay before moving north to their Canadian nesting areas. The shores of the Delaware Bay are an important nursery and spawning area for this species.

**Endangered and Threatened Species**

The Delaware Bay in the project area is considered a vital migratory pathway for both Atlantic sturgeon (*Acipenser oxyrinchus*) and shortnose sturgeon (*Acipenser brevirostrum*) which typically occur in deep water channels although they can be found in the shallower waters while foraging. The abundance of adult shortnose sturgeon is greatest in the tidal river from Trenton to Philadelphia (Hastings et al. 1987; O'Herron et al. 1993) further upriver than the project area.

On October 6, 2010, NOAA issued a Federal Register Notice (75 FRN 61872), which identifies the Hudson River and Delaware River Atlantic sturgeon stocks as a distinct population segment (DPS) called

the New York Bight DPS. This DPS has been proposed to be listed as endangered. The Atlantic Sturgeon Status Review Team (ASSRT) identified 15 different stressors that may impact the Atlantic sturgeon populations including poor water quality and habitat loss (ASSRT, 2007). Dredging and vessel strikes are also considered to be important stressors on the populations of Atlantic sturgeon (75 FRN 61872 et seq.) According to the ASSRT (2007), Ryder (1888) suggested that juvenile Atlantic sturgeon used the tidal freshwater reach of the Delaware River as a nursery area and Lazzari et al. (1986) frequently captured juvenile Atlantic sturgeon from May - December in the upper tidal portion of the river below Trenton, New Jersey. The Atlantic sturgeon (*Acipenser oxyrinchus*) may be found in the Delaware River in the vicinity of the project area at certain times of the year. On October 6, 2010, NOAA issued a Federal Register Notice (75 FRN 61872).

Shortnose sturgeon (*Acipenser brevirostrum*) typically occurs in deep water channels although they do occur in the shallower waters while foraging. The abundance of adult shortnose sturgeon is greatest in the tidal river from Trenton to Philadelphia (Hastings et al. 1987; O'Herron et al. 1993). In-water construction activities can affect shortnose and Atlantic sturgeon through direct injury or mortality, displacing species from the area, or by altering the habitat and destroying forage items.

Any discretionary federal action, such as the approval or funding of a project by a Federal agency, that may affect a listed species must undergo consultation pursuant to Section 7 of the Endangered Species Act (ESA) of 1973, as amended. The NRC should submit its determination of effects, along with justification for the determination and a request for concurrence, to the attention of the Endangered Species Coordinator, NMFS, Northeast Regional Office, Protected Resources Division, One Blackburn Drive, Gloucester, MA 01930. For additional information on the Section 7 consultation process or shortnose sturgeon, please contact Julie Crocker at (978) 282-8480 or julie.crocker@noaa.gov.

We look forward to receiving the NRC's EFH assessment in an effort towards continued coordination with the NRC as it moves ahead with the development of the SEIS and the relicensing process for Salem and Hope Creek. Should you have any questions, need additional information or would life to arrange a meeting to discuss the EFH consultation process or impacts to resources of concern to NMFS, please contact Brian May at (732) 872-3116 or Karen Greene at 732 872-3023.

Sincerely,

Stanley W. Gorski
Field Offices Supervisor

cf: J. Crocker

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