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

NOV 2 3 2018

Briana Grange
U.S. Nuclear Regulatory Commission
Division of Materials and License Renewal
Office of Nuclear Reactor Regulation
Washington, DC 20555-0001

Dear Ms. Grange,

This correspondence serves to clarify the amount of take exempted by the Incidental Take Statement included with the July 17, 2014, biological opinion issued by us to the Nuclear Regulatory Commission regarding the continued operations of Salem Unit 1 and Salem Unit 2. As described in the opinion (see *Effects of the Action* pages 112 and 113 and *Integration and Synthesis of Effects* pages 174-186), we anticipated the impingement of nine loggerhead sea turtles (from the Northwest Atlantic distinct population segment (DPS) and determined that six of these sea turtles would be removed from the water dead and that no more than two of those dead turtles would have a cause of death attributable to plant operations (i.e., impingement and drowning). However, as you recently noted, the table presented in the Incidental Take Statement (see page 190), is unclear. As such, we are amending the July 7, 2014, Incidental Take Statement to clarify the table. The only change is replacing the table as described below.

The table presented in the July 2014 Incidental Take Statement is as follows:

Impingement/Collection of Sea Turtles at the Trash Bars

	Salem Unit 1	**Salem Unit 2**
Loggerhead	4 (1 dead)	5 (1 dead)
Green	One at Unit 1 or Unit 2 (alive or dead)	
Kemp's Ridley	2 (1 dead)	2 (dead)

That table is replaced with the following text:

Impingement/Collection of Sea Turtles at the Trash Bars

Loggerhead sea turtles- Salem Unit 1: Total collected – 4; Mortality – no more than 2 (subset of total); Mortality due to plant operations – no more than 1 (subset of mortality)

Loggerhead sea turtles- Salem Unit 2: Total collected – 5; Mortality – no more than 2 (subset of total); Mortality due to plant operations – no more than 1 (subset of mortality)

Kemp's ridley sea turtles- Salem Unit 1: Total collected – 2; Mortality – no more than 1 (cause of death may or may not be attributable to plant operations)

Kemp's ridley sea turtles- Salem Unit 2: Total collected – 2; Mortality – no more than 2 (subset of total); Mortality due to plant operations – no more than 1 (subset of mortality)

Green sea turtles: Total collected – 1 at either Unit 1 or Unit 2; Mortality – no more than 1 (subset of total); Mortality due to plant operations – no more than 1 (subset of mortality)

Should you have any questions regarding this correspondence, please contact Julie Crocker of my staff (978-282-8480 or Julie.Crocker@noaa.gov).

Sincerely,

Michael Asaro
Acting Assistant Regional Administrator
for Protected Resources

cc: Crocker – F/GAR3
Williams – GCNE

PCTS: NER-2010-6581

File Code: Sec 7 formal – NRC – Salem and Hope Creek 2010 BiOp (ITS clarification)

11.0 INCIDENTAL TAKE STATEMENT

Section 9 of the ESA prohibits the take of endangered species of fish and wildlife. "Fish and wildlife" is defined in the ESA "as any member of the animal kingdom, including without limitation any mammal, fish, bird (including any migratory, non-migratory, or endangered bird for which protection is also afforded by treaty or other international agreement), amphibian, reptile, mollusk, crustacean, arthropod or other invertebrate, and includes any part, product, egg, or offspring thereof, or the dead body or parts thereof." 16 U.S.C. 1532(8). "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by NMFS to include any act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation that actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns including breeding, spawning, rearing, migrating, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. "Otherwise lawful activities" are those actions that meet all State and Federal legal requirements except for the prohibition against taking in ESA Section 9 (51 FR 19936, June 3, 1986), which would include any state endangered species laws or regulations. Section 9(g) makes it unlawful for any person "to attempt to commit, solicit another to commit, or cause to be committed, any offense defined [in the ESA.]" 16 U.S.C. 1538(g). A "person" is defined in part as any entity subject to the jurisdiction of the United States, including an individual, corporation, officer, employee, department or instrument of the Federal government (see 16 U.S.C. 1532(13)). Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not the purpose of carrying out an otherwise lawful activity is not considered to be prohibited under the ESA provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement. In issuing ITSs, NMFS takes no position on whether an action is an "otherwise lawful activity."

Salem 1, Salem 2 and Hope Creek operate pursuant to operating licenses issued by the NRC. The Salem 1 and Salem 2 nuclear reactors use a once-through cooling system requiring water to be withdrawn from the Delaware River. This results in the impingement of Atlantic and shortnose sturgeon and green, Kemp's ridley and loggerhead sea turtles at the trash racks which are part of the intake system. Water withdrawal also results in the impingement or collection of juvenile NYB DPS Atlantic sturgeon on the traveling screens which are also part of the intake system. No take of shortnose or Atlantic sturgeon or any species of sea turtle is anticipated due to the continued withdrawal of water for the Hope Creek nuclear reactor.

Take, in the form of capture of Atlantic and shortnose sturgeon, will also result from gillnet surveys carried out by PSEG to fulfill the requirements of the REMP. The REMP is required by the NRC over the duration of the continued operations of Salem Unit 1, Salem Unit 2 and Hope Creek. No take of sea turtles is anticipated to occur during REMP sampling for Salem 1, Salem 2 or Hope Creek.

Take, in the form of capture and injury, will also result from PSEG carrying out the beach seine survey (Atlantic sturgeon only) and baywide trawl survey (sea turtles, Atlantic sturgeon and shortnose sturgeon). This survey is a required component of the IBMWP; the IBMWP is a mandatory special condition of the SPDES permit issued to PSEG by NJDEP for Salem Unit 1 and Unit 2. As explained in Section 7.0, we have determined that the IBMWP, including the

baywide trawl survey, is an interrelated activity.

Because all of the anticipated take results from, but is not the purpose of, operation of the Salem Unit 1, Salem Unit 2 and Hope Creek nuclear facilities, it is all considered "incidental take" for purposes of this Opinion (see 50 CFR §402.02). When we exempt incidental take, we must issue Reasonable and Prudent Measures (RPMs) and Terms and Conditions. These RPMs and Terms and Conditions minimize (either the amount or the effect of that take, that is, the RPMs could reduce the number of takes or could minimize the potential for mortality of captured animals) and monitor take. The NRC has indicated that they have authority to ensure compliance with RPMs and Terms and Conditions related to the operation of the trash rack and the traveling screens. Because the REMP is also required by NRC, NRC can also ensure compliance with RPMs and Terms and Conditions related to surveys necessary to complete the REMP. PSEG is required to implement the IBMWP by the NJDEP as condition of the NJPDES permit issued for the operation of Salem 1 and 2. NRC has determined that they do not have the authority to enforce RPMs or Terms and Conditions related to the implementation of the IBMWP because implementation does not involve operations of the nuclear facility. As such, the RPMs and Terms and Conditions necessary and appropriate to minimize and monitor incidental take resulting from the IBMWP are the responsibility of PSEG, not the NRC.

If NRC and PSEG fail to assume and implement the applicable terms and conditions, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, NRC and PSEG must report the progress of the action and its impact on the species to us as specified in the Incidental Take Statement [50 CFR §402.14(i)(3)] (See U.S. Fish and Wildlife Service and National Marine Fisheries Service's Joint Endangered Species Act Section 7 Consultation Handbook (1998) at 4-49).

11.1 Amount or Extent of Take

This ITS serves two important functions: (1) it provides an exemption from the Section 9 prohibitions for any taking incidental to the proposed action that is in compliance with the terms and conditions; and (2) it provides the means to insure the action as it is carried out is not jeopardizing the continued existence of affected species by monitoring and reporting the progress of the action and its impact on the species such that consultation can be reinitiated if any of the criteria in 50 CFR 402.16 are met. This ITS applies to the remaining term of the renewed operating licenses that were issued in 2011.

As explained in the "Effects of the Action" section, effects of the facilities on shortnose and Atlantic sturgeon, green, Kemp's ridley and loggerhead sea turtles also include effects of the thermal plume on distribution and prey. However, based on the available information on the thermal plume and the assumptions regarding sturgeon and sea turtles behavior and thermal tolerances outlined in the Opinion, we do not anticipate or exempt any take of shortnose or Atlantic sturgeon or any species of sea turtle due to effects to prey items or due to exposure to the thermal plume.

We expect shortnose sturgeon and Atlantic sturgeon from the New York Bight, Gulf of Maine, Chesapeake Bay, South Atlantic and Carolina DPSs with body widths greater than 3" to be impinged at the trash bars. However, as explained in the Effects of the Action section, we expect

some of the sturgeon impinged on the trash bars will be dead or stressed prior to the impingement and the cause of death/stressor is currently unknown. Dead or injured sea turtles may also become impinged on the trash bars. This impingement is expected to result from the operation of Salem Units 1 and 2 and the presence of the trash bars. These interactions at the trash bars constitute "capture" or "collect" in the definition of "take."

We expect live sea turtles, shortnose sturgeon and subadult Atlantic sturgeon from the New York Bight, Gulf of Maine, Chesapeake Bay, South Atlantic and Carolina DPSs to be captured by the trash rake during trash bar cleaning. These interactions at the trash bars constitute "capture" or "collect" in the definition of "take." These interactions may also result in injuries.

Some live sea turtles, shortnose sturgeon and subadult Atlantic sturgeon from the New York Bight, Gulf of Maine, Chesapeake Bay, South Atlantic and Carolina DPSs may become impinged on the trash bars and die as a result of impingement or have the impingement as a contributing factor in their death. These interactions at the trash bars constitute "kill" in the definition of "take."

The continued operation of Salem 1 and Salem 2 will result in the impingement of juvenile New York Bight DPS origin Atlantic sturgeon at the traveling screens. We expect that some of the sturgeon impinged at the screens will be dead or suffering from injury or illness. Some sturgeon caught in the buckets of the Ristroph screen are likely to have been healthy and free swimming; some of those fish are likely to experience injury or mortality while being transported to the sluice. Other sturgeon that become impinged on the screens are likely to suffer injury or mortality due to their impingement. We also expect that some sturgeon will become tired, disoriented and stressed such that their normal behaviors are impaired or they become injured while in the intake embayment between the trash bars and screens; we expect that these fish will become impinged on the Ristroph screens. Based on the available information and the small number of Atlantic sturgeon documented during impingement monitoring at the traveling screens (4 live from 1976-2013), we have estimated that Atlantic sturgeon impinged or captured at the Ristroph screens will have a mortality rate of approximately 8.25%. Sturgeon that are impinged at the Ristroph screens but safely returned (i.e., with no injury) alive to the Delaware River are "captured" or "collected."

Salem 1 and Salem 2 operate under separate licenses and will operate for different periods of time. As a result, "take" at the Salem 1 and 2 intakes will be apportioned to each of the two separate actions.

This ITS exempts the following take (injure, kill, capture or collect, as described below) resulting from the operation of the cooling water system:

Impingement or Collection of Shortnose Sturgeon at the Trash Bars

Salem Unit 1	**Salem Unit 2**	**Total Unit 1 and 2**
12 (10 dead, 5 due to impingement)	14 (12 dead, 6 due to impingement)	26 (22 dead, 11 due to impingement)

Impingement or Collection of Atlantic Sturgeon at the Trash Bars

	Salem Unit 1	Salem Unit 2	Total Unit 1 and 2
All age classes and DPSs combined	92 (28 dead, 8 due to impingement)	108 (33 dead, 10 due to impingement)	200 (61 dead, 18 due to impingement)
Juveniles (NYB DPS)	88 (27 dead, 7 due to impingement)	104 (32 dead, 9 due to impingement)	192 (59 dead, 16 due to impingement)
Subadult or adult TOTAL:	4 (1 dead due to impingement)	4 (1 dead due to impingement)	8 (2 dead due to impingement)
Sub adult or adult NYB DPS	3 (1 dead due to impingement)	3 (1 due to impingement)	6 (2 dead due to impingement)
Sub adult or adult CB DPS	1 dead or alive from either the CB, SA, GOM or Carolina DPS	1 dead or alive from either the CB, SA, GOM or Carolina DPS	Total of 2 from the CB, SA, GOM and/or Carolina DPS
Subadult or adult SA DPS			
Subadult or adult GOM DPS			
Subadult or adult Carolina DPS			

Impingement/Collection of Atlantic Sturgeon at the Traveling Screens

	Salem Unit 1	Salem Unit 2	Total Units 1 and 2
NYB DPS	138 (12 injury or mortality)	162 (14 injury or mortality)	300 (26 injury or mortality)

Impingement/Collection of Sea Turtles at the Trash Bars

Loggerhead sea turtles- Salem Unit 1: Total collected – 4; Mortality – no more than 2 (subset of total); Mortality due to plant operations – no more than 1 (subset of mortality)

Loggerhead sea turtles- Salem Unit 2: Total collected – 5; Mortality – no more than 2 (subset of total); Mortality due to plant operations – no more than 1 (subset of mortality)

Kemp's ridley sea turtles- Salem Unit 1: Total collected – 2; Mortality – no more than 1 (cause of death may or may not be attributable to plant operations)

Kemp's ridley sea turtles- Salem Unit 2: Total collected – 2; Mortality – no more than 2 (subset of total); Mortality due to plant operations – no more than 1 (subset of mortality)

Green sea turtles: Total collected – 1 at either Unit 1 or Unit 2; Mortality – no more than 1 (subset of total); Mortality due to plant operations – no more than 1 (subset of mortality)

REMP Gillnet Sampling

We also anticipate the capture of one shortnose sturgeon and one Atlantic sturgeon (originating from any of the 5 DPSs) during gillnet sampling associated with the REMP programs for either Salem 1, Salem 2 or Hope Creek. The ITS exempts this amount of take ("capture" or "collect") of live shortnose and Atlantic sturgeon.

IBMWP - Bottom Trawl and Beach Seine

As explained above, we have determined that the IBMWP, including the baywide trawl survey and beach seine sampling, is an interrelated activity. In the Effects of the Action section, we considered the effects of the IBMWP as required by the NJPDES permit issued to PSEG for the operation of Salem 1 and 2. We have estimated that the continuation of the bottom trawl survey will result in the non-lethal capture of 9 shortnose sturgeon, 11 Atlantic sturgeon (6 NYB, 2 CB, and 3 SA, GOM or Carolina DPS) and five sea turtles (four loggerheads and one Kemp's ridley or green). We also expect the beach seine survey to result in the non-lethal capture of one Atlantic sturgeon (likely NYB DPS origin) and one shortnose sturgeon. This ITS exempts this amount of take ("capture" or "collect") of live shortnose sturgeon, Atlantic sturgeon and sea turtles captured during these surveys.

11.2 Reasonable and Prudent Measures

In order to effectively monitor the effects of this action, it is necessary to monitor the intakes to document the amount of incidental take (i.e., the number of each species captured, collected, injured or killed) and to examine these individuals. Monitoring provides information on the characteristics of the individuals encountered and may provide data which will help develop more effective measures to avoid future interactions with listed species. We do not anticipate any additional injury or mortality to be caused by removing the fish or turtles from the water and examining them as required in the RPMs. The transfer of live sea turtles to an appropriate STSSN facility is likely to improve the individuals chance of survival following impingement; particularly as many of the sea turtles impinged may be suffering from previously inflicted injury or illness. No such facilities are available for shortnose or Atlantic sturgeon; as such, any live sturgeon are to be released back into the river, away from the intakes. Any STSSN facility that live sea turtles may be transferred to is required to be authorized to care for, rehabilitate and release sea turtles pursuant to a Stranding Network Agreement and a permit issued by the USFWS pursuant to Section 10 of the ESA. As outlined below, NMFS is requiring NRC to ensure that PSEG prepare arrangements with an appropriate STSSN approved and permitted facility. Reasonable and prudent measures and implementing terms and conditions requiring this monitoring and transport are outlined below. NMFS believes the following reasonable and prudent measures are necessary or appropriate for NRC and/or the licensee, PSEG, to minimize and monitor impacts of incidental take of listed species.

RPMs Applicable to NRC and PSEG at the Intakes:

1. PSEG must continue to implement a NMFS approved program to prevent, monitor and minimize the incidental take of sea turtles and sturgeon at the Salem intakes as described in the terms and conditions.

2. All observations of sea turtle and sturgeon at the intakes must be reported to NMFS and NRC; this includes live and dead individuals removed from the racks with the trash rake or traveling screens and any incidental sightings of sturgeon or sea turtles during monitoring of the trash racks.

3. All live sea turtles must be transported to an appropriate facility for necessary rehabilitation and release into the wild.

4. A necropsy of any dead sea turtles must be undertaken promptly to attempt to identify the cause of death, particularly whether the sea turtle died as a result of interactions with the intakes.

5. All live sturgeon must be released back into the Delaware River at an appropriate location away from the intakes.

6. Any dead sturgeon must be retained in cold storage until disposal procedures are discussed with NMFS. Disposal may involve transfer to NMFS or an appropriately permitted research facility. Necropsy may be required when the dead body is in sufficient condition (i.e., "fresh dead") and it is necessary to determine the cause of death, particularly whether the fish died as a result of interactions with the intakes.

7. PSEG must continue to use flow-through river water in all fish sampling areas and holding tanks to ensure adequate depth, temperature, and dissolved oxygen.

RPMs Applicable to NRC and PSEG during REMP gillnet sampling:

8. Any listed species caught during the survey must be handled and resuscitated according to established procedures.

9. Any listed species caught and retrieved in the sampling gear must be properly documented.

10. NMFS GARFO must be notified regarding all interactions with or observations of listed species, including the capture of live and dead sea turtles and sturgeon and incidental observations of live or dead sea turtles or sturgeon observed during REMP sampling.

RPMs to be Implemented by PSEG during IBMWP sampling (beach seine and trawl):

11. PSEG must handle and resuscitate any listed species caught during the survey according to established procedures.

12. PSEG must identify and properly document any listed species caught and retrieved in the sampling gear.

13. PSEG must notify NMFS GARFO regarding all interactions with or observations of listed species, including the capture of live and dead sea turtles and sturgeon and incidental observations of live or dead sea turtles or sturgeon observed during IBMWP sampling.

11.3 Terms and Conditions

These terms and conditions are non-discretionary.

Terms and Conditions to be Implemented by NRC and PSEG at the Intakes:

1. To implement RPM #1, the intake trash bars must be cleaned at least once a week year round. Within 30 days of the issuance of this Opinion, PSEG must provide NMFS with an estimated cleaning frequency by season.

    a. Cleaning must include the full length of the trash rack, i.e., down to the bottom of each intake bay. Measures to remove trash bar blockage or repair rakes must be promptly pursued (e.g., within two weeks) to ensure that all bar racks can be cleaned as necessary. To lessen the possibility of injury to a turtle or sturgeon, the raking process must be closely monitored so that it can be stopped immediately if a turtle or sturgeon is sighted.

    b. PSEG personnel must be instructed to look at surface debris beneath the rake, if possible, before the rake is used to lessen the possibility of injury to a turtle or sturgeon.

    c. PSEG personnel cleaning the racks must inspect all debris that is dumped to ensure that no sea turtles or sturgeon are present within the debris.

    d. If any sea turtles or sturgeon are present within the debris, PSEG must report and handle this as described in RPM #2, 4 and 6.

2. To implement RPM #1, inspection of cooling water intake trash bars (and immediate area upstream) must continue to be conducted at least once per 12-hour shift. Times of inspections, including those when no turtles or sturgeon were sighted, must be recorded.

3. To implement RPM #1, lighting must be maintained at the intake structure / trash racks to enable inspection personnel to see the river surface and to facilitate safe handling of turtles or sturgeon which are discovered at night. Portable spotlights must be available at the intakes for times when extra lighting is needed.

4. To implement RPM #1, dip nets, baskets, and other equipment must be available at the intakes and must be used to remove sea turtles or sturgeon from the intake structures if possible, to reduce trauma caused by the existing cleaning mechanism. Equipment suitable for rescuing large turtles (e.g., rescue sling or other provision) must be available at Salem and readily accessible from the intakes.

5. To implement RPM #1, an attempt to resuscitate comatose sea turtles must be made according to the procedures described in Appendix A. These procedures must be posted in appropriate areas such as the intake bay areas, any other area where turtles would be moved for resuscitation, and the operator's office(s).

6. To implement RPM #2, PSEG personnel must report any sea turtles or sturgeon sighted near Salem to NMFS (incidental.take@noaa.gov or by phone 978-281-9328 and NRC (endangeredspecies@nrc.gov) within 24 hours of the observation.

7. To implement RPM #2, PSEG must take fin clips (according to the procedure outlined in Appendix B) of any shortnose and Atlantic sturgeon (live or dead) captured at the intakes. In the case of dead animals, fin clips must be taken prior to preservation of other fish parts or whole bodies. All fin clips must be preserved (see Appendix B) and transported to a NMFS-approved lab. PSEG must coordinate with the qualified lab to process the sample in order to determine DPS (for Atlantic sturgeon) or river (for shortnose sturgeon) of origin. The DPS or river of origin must be reported to NMFS once the sample has been processed. Within 30 days of receiving this Opinion, PSEG must contact NMFS to obtain a list of individuals/facilities with the appropriate ESA authority and technical ability to carry out the genetic identification. Arrangements must be made with an appropriate individual/facility within 60 days of receiving this Opinion. The arrangement should be memorialized via letter to NMFS from PSEG that includes information on arrangements for the frequency of transfer of samples to the facility and timelines for processing of samples.

8. To implement RPM #2, if any live or dead sea turtles or sturgeon are taken at Salem trash bars or traveling screens, PSEG plant personnel must notify NMFS (incidental.take@noaa.gov or by phone 978-281-9328 and the NRC (endangeredspecies@nrc.gov) within 24 hours of the take. An incident report for sea turtle or sturgeon take (Appendix C) must also be completed by PSEG plant personnel and sent to the NMFS Section 7 Coordinator via FAX (978-281-9394) or e-mail (incidental.take@Noaa.gov) within 24 hours, or on the next business day following the take. Copies of these reports should also be submitted to the NRC electronically (endangeredspecies@nrc.gov) or by mail to the NRC Document Control Desk. PSEG must ensure that every sea turtle and sturgeon is photographed. Information in Appendix D will assist in identification of species impinged.

9. To implement RPM #2, an annual report of incidental takes at the trash bars and traveling screens must be submitted to NMFS by March 15 of the following year. This report will be used to identify trends and further conservation measures necessary to minimize incidental takes of sea turtles and sturgeon. The report must include, as detailed above, all necropsy reports, incidental take reports, photographs (if not previously submitted), a record of all sightings in the vicinity of Salem, and a record of when inspections of the intake trash bars were conducted for the 7 days prior to the take. The report must include a table indicating the number of shortnose and Atlantic sturgeon and sea turtles removed from the trash bars as well as any sturgeon observed during sampling of the traveling screens. The report should include an estimate of the total number of sturgeon likely collected on the traveling screens based on the number observed and the percentage of time sampling occurred. The annual report must also include any potential measures to reduce sea turtle and sturgeon impingement or mortality at the intake structures. This annual report must also include information on arrangements made with a STSSN facility to handle sea turtles taken in the coming year. The report must also include all necropsy reports. A copy of the annual report should also be submitted to the NRC electronically

(endangeredspecies@nrc.gov) or by mail to the NRC Document Control Desk. At the time the report is submitted, NMFS will supply NRC and PSEG with any information on changes to reporting requirements (i.e., staff changes, phone or fax numbers, e-mail addresses) for the coming year.

10. To implement RPM #3, within 30 days of receiving this Opinion, PSEG must contact NMFS to either: (1) obtain a list of stranding/rehabilitation facilities with the appropriate ESA authority to respond to live sea turtles and/or to conduct necropsies of dead sea turtles or (2) confirm arrangements with one of these facilities to respond to live and dead sea turtles collected from the Salem intakes. If arrangements are not already in place with one of these facilities, they must be made within 60 days of receiving this Opinion. The appropriate facility must be contacted immediately following any live sea turtle take. appropriate transport methods must be employed following the stranding facilities protocols, to transport the animal to the care of the stranding/rehabilitation personnel for evaluation, necessary veterinary care, tagging, and release in an appropriate location and habitat. NMFS must be informed of the arrangements made with the facility to respond to live and dead sea turtles.

11. To implement RPM #4, all dead sea turtles must be necropsied at a facility that has the appropriate ESA authorizations (see T&C #9). PSEG must coordinate with a qualified facility or individual to perform the necropsies on sea turtles impinged at Salem, prior to the incidental turtle take, so that there is no delay in performing the necropsy or obtaining the results. The necropsy results must identify, when possible, the sex of the turtle, stomach contents, and the estimated cause of death. Necropsy reports must be submitted to the NMFS Northeast Region with the annual review of incident reports or, if not yet available, within 60 days of the incidental take. Copies of these reports should also be submitted to the NRC electronically (endangeredspecies@nrc.gov) or by mail to the NRC Document Control Desk.

12. To implement RPM #5, any live sturgeon must be returned to the river away from the intakes, following complete documentation of the event.

13. To implement RPM #6, in the event of any lethal takes of sturgeon, PSEG must ensure that any dead specimens or body parts are photographed, measured, and preserved (refrigerate) until disposal procedures are discussed with NMFS. NMFS may request that the specimen be transferred to NMFS or to an appropriately permitted researcher so that a necropsy may be conducted. The form included as Appendix C must be completed and submitted to NMFS as noted above. The requirement for necropsy will be made on a case by case basis and will be based on (1) the condition of the fish and (2) a determination by NMFS that necropsy is necessary to determine whether impingement or collection at the intakes was a cause or factor in the death.

14. To implement RPM #7, PSEG must ensure that no shortnose or Atlantic sturgeon are held for longer than 4 hours, that water depth is sufficient to cover the body of all fish, and that water temperature and dissolved oxygen levels reflect ambient river conditions.

RPMs Applicable to NRC and PSEG during REMP gillnet sampling:

15. To implement RPM#8, PSEG personnel must give priority to handling and processing any listed species that are captured in the sampling gear. Handling times must be minimized for these species.

16. To implement RPM#8 attempts must be made to resuscitate any Atlantic sturgeon that may appear to be dead by providing a running source of water over the gills.

17. To comply with RPM #9, all survey crews must have at least one crew member who is experienced in the identification of sturgeon on the vessel(s) used for survey where interactions with sturgeon are anticipated at all times that the on-water survey work is conducted. Information provided as Appendix D can aid in species identification.

18. To comply with RPM #9 PSEG must take fin clips (according to the procedure outlined in Appendix B) of any shortnose and Atlantic sturgeon (live or dead) captured at the intakes. In the case of dead animals, fin clips must be taken prior to preservation of other fish parts or whole bodies. All fin clips must be preserved (see Appendix B) and transported to a NMFS-approved lab. PSEG must coordinate with the qualified lab to process the sample in order to determine DPS (for Atlantic sturgeon) or river (for shortnose sturgeon) of origin. The DPS or river of origin must be reported to NMFS once the sample has been processed.

19. To comply with RPM#9, PSEG must ensure that on all vessels where appropriate Passive Integrated Transponder (PIT) tag readers are available, captured sturgeon are scanned for existing PIT tags. Any recorded sturgeon PIT tags must be reported to the USFWS tagging database. During surveys where the appropriate PIT tags are available, any untagged sturgeon must be tagged with PIT tags according to the procedure included as Appendix E and the tag numbers recorded and reported to the USFWS tagging database.

20. To comply with RPM #9, all interactions with listed species must be documented. Photographs should be taken whenever possible. The condition of each animal must be recorded and any injuries documented on forms provided as Appendix C or on similar forms that contain all of the information fields provided in Appendix C. Individuals should be measured (length) if possible and weighed if adequate scales are available on the sampling vessel.

21. To comply with RPM #10, any dead Atlantic or shortnose sturgeon or sea turtle must be retained and held in cold storage until disposal can be discussed with NMFS. A sturgeon incident report form (Appendix C) must be filled out for any dead sturgeon and provided to NMFS.

22. To comply with RPM #10, NMFS PRD must be notified within 24 hours of any interaction with a listed species. If reporting within 24 hours is not possible, the report must be made as soon as possible, preferably on the next business day. These reports should be sent by e-mail (Incidental.take@noaa.gov). If e-mail notification within 24 hours is not possible, this information can be faxed (978-281-9394 Attn: Section 7 Coordinator) or phoned in (NMFS Protected Resources Division 978-281-9328). For

purposes of monitoring the incidental take of sea turtles and sturgeon during the surveys, reports must be made for any sea turtle or sturgeon: (a) found alive, dead, or injured within the sampling gear; (b) found alive, dead, or injured and retained on any portion of the sampling gear outside of the net bag; or (c) interacting with the vessel and gear in any other way must be reported to NMFS. The report must include: a clear photograph of the animal (multiple views if possible, including at least one photograph of the head scutes); identification of the animal to the species level; GPS or Loran coordinates describing the location of the interaction; time of interaction; date of interaction; condition of the animal upon retrieval (alive uninjured, alive injured, fresh dead, decomposed, comatose or unresponsive); the condition of the animal upon return to the water; GPS or Loran coordinates of the location at which it was released; a description of the care or handling provided; information any tags detected and/or inserted; and notification that a genetic sample was taken (if required).

23. To comply with RPM #10, written reports must be provided to NMFS GARFO annually (by March 15 of each year) indicating either that no interactions with ESA-listed species occurred, or providing the total number of interactions that occurred with ESA-listed species, as well as copies of all required reporting forms and photographs. Any reports required by Term and Condition 9 that have not been provided to NMFS GARFO must be included in this report. This report must be submitted by e-mail (incidental.take@noaa.gov) or mailed to the NMFS Greater Atlantic Regional Fisheries Office, Attn: Section 7 Coordinator; 55 Great Republic Drive, Gloucester, MA 01930.

Terms and Conditions to be Implemented by PSEG during IBMWP sampling (beach seine and trawl):

24. To implement RPM#11, PSEG personnel must give priority to handling and processing any listed species that are captured in the sampling gear. Handling times must be minimized for these species.

25. To implement RPM #11 all personnel carrying out surveys have copies of the sea turtle handling and resuscitation requirements found at 50 CFR 223.206(d)(1) and as reproduced in Appendix A prior to the commencement of any on-water activity where sea turtles may be encountered. PSEG must ensure that all operators carry out these handling and resuscitation procedures as appropriate.

26. To implement RPM#11 attempts must be made to resuscitate any Atlantic sturgeon that may appear to be dead by providing a running source of water over the gills.

27. To comply with RPM #12, all survey crews must have at least one crew member who is experienced in the identification of sturgeon and/or sea turtles on the vessel(s) used for survey where interactions with these species are anticipated at all times that the on-water survey work is conducted. Information provided as Appendix D can aid in species identification.

28. To comply with RPM #12, PSEG must take fin clips (according to the procedure outlined

in Appendix B) of any shortnose and Atlantic sturgeon (live or dead) captured at the intakes. In the case of dead animals, fin clips must be taken prior to preservation of other fish parts or whole bodies. All fin clips must be preserved (see Appendix B) and transported to a NMFS-approved lab. PSEG must coordinate with the qualified lab to process the sample in order to determine DPS (for Atlantic sturgeon) or river (for shortnose sturgeon) of origin. The DPS or river of origin must be reported to NMFS once the sample has been processed.

29. To comply with RPM#12, PSEG must ensure that on all vessels where appropriate Passive Integrated Transponder (PIT) tag readers are available, captured sturgeon and sea turtles are scanned for existing PIT tags. Any recorded sturgeon PIT tags must be reported to the USFWS tagging database. PIT tag numbers must be included with any reports submitted to NMFS. During surveys where the appropriate PIT tags are available, any untagged sturgeon must be tagged with PIT tags according to the procedure included as Appendix E and the tag numbers recorded and reported to the USFWS tagging database.

30. To implement RPM#9, PSEG must ensure that all sea turtles are inspected for external tags (typically found on the flipper). All tag numbers must be recorded and reported to NMFS on the incident reporting form included as Appendix C.

31. To comply with RPM #12, all interactions with listed species must be documented. Photographs should be taken whenever possible. The condition of each animal must be recorded and any injuries documented on forms provided as Appendix C or on similar forms that contain all of the information fields provided in Appendix C. Individuals should be measured (length) if possible and weighed if adequate scales are available on the sampling vessel.

32. To comply with RPM #12, any dead Atlantic or shortnose sturgeon or sea turtle must be retained and held in cold storage until disposal can be discussed with NMFS. An incident report form (Appendix C) must be filled out for any dead sturgeon and sea turtle and provided to NMFS.

33. To comply with RPM #13, NMFS PRD must be notified within 24 hours of any interaction with a listed species. If reporting within 24 hours is not possible, the report must be made as soon as possible, preferably on the next business day. These reports should be sent by e-mail (Incidental.take@noaa.gov). If e-mail notification within 24 hours is not possible, this information can be faxed (978-281-9394 Attn: Section 7 Coordinator) or phoned in (NMFS Protected Resources Division 978-281-9328). For purposes of monitoring the incidental take of sea turtles and sturgeon during the surveys, reports must be made for any sea turtle or sturgeon: (a) found alive, dead, or injured within the sampling gear; (b) found alive, dead, or injured and retained on any portion of the sampling gear outside of the net bag; or (c) interacting with the vessel and gear in any other way must be reported to NMFS. The report must include: a clear photograph of the animal (multiple views if possible, including at least one photograph of the head scutes);

identification of the animal to the species level; GPS or Loran coordinates describing the location of the interaction; time of interaction; date of interaction; condition of the animal upon retrieval (alive uninjured, alive injured, fresh dead, decomposed, comatose or unresponsive); the condition of the animal upon return to the water; GPS or Loran coordinates of the location at which it was released; a description of the care or handling provided; information any tags detected and/or inserted; and notification that a genetic sample was taken (if required).

34. To comply with RPM #13, written reports must be provided to NMFS GARFO annually (by March 15 of each year) indicating either that no interactions with ESA-listed species occurred, or providing the total number of interactions that occurred with ESA-listed species, as well as copies of all required reporting forms and photographs. Any reports required by Term and Condition #21 that have not been provided to NMFS GARFO must be included in this report. This report must be submitted by e-mail (incidental.take@noaa.gov) or mailed to the NMFS Greater Atlantic Regional Fisheries Office, Attn: Section 7 Coordinator, 55 Great Republic Drive, Gloucester, MA 01930.

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize and monitor the impact of incidental take that might otherwise result from the proposed action. Specifically, these RPMs and Terms and Conditions will ensure that: PSEG continues to implement measures to reduce the potential of mortality for any sea turtles or sturgeon impinged at Salem; to monitor the take of sturgeon during REMP sampling required by NRC for Salem 1, Salem 2 and Hope Creek and to reduce the potential for lethal take during that smapling; require that PSEG report all interactions to NMFS and to provide information on the likely cause of death of any sea turtles or shortnose sturgeon impinged at the facility; the RPMs and Terms and Conditions also serve to monitor the take of sea turtles and sturgeon in surveys required by the IBMWP and to minimize the potential for lethal interactions during those surveys. The discussion below explains why each of these RPMs and Terms and Conditions are necessary and appropriate to minimize or monitor the level of incidental take associated with the proposed action and how they represent only a minor change to the proposed action.

RPM #1 and Term and Conditions #1-6 are necessary and appropriate because they are specifically designed to ensure that all appropriate measures are carried out to prevent, monitor and minimize the incidental take of sea turtles at Salem. These conditions ensure that the potential for detection of sea turtles at the intakes is maximized and that any sea turtles removed from the water are done so in a manner that minimizes the potential for further injury. The procedures and requirements outlined in RPM #1 and Term and Conditions #1-6 are only a minor change because they are not expected to result in any modifications to plant operations and any increase in cost is small. Additionally, these conditions are consistent with conditions in previous ITSs for Salem and are part of the normal procedures at the facility.

RPM#2 and Term and Condition #6-10 are necessary and appropriate as ensure the proper handling and documentation of any interactions with listed species as well as the prompt reporting of these interactions to NMFS. This represents only a minor change as the implementation of these conditions is not anticipated to result in any increased cost, delay of the project or change in the operation of the facility. Additionally, these conditions are consistent

with conditions in previous ITSs for Salem and are part of the normal procedures at the facility.

RPM#3 and Term and Condition #11 are necessary and appropriate as the continued transfer of turtles removed from the water alive to an approved stranding/rehabilitation center maximizes the likelihood that these turtles when returned to the wild will be healthy. Additionally, this ensures that any injured turtles can be cared for, reducing the potential impact of any injuries and reducing the potential for delayed mortality. This represents only a minor change as PSEG has maintained a relationship with MMSC to carry out these activities in the past and this condition is consistent with conditions in previous ITSs for Salem and is part of the normal procedures at the facility.

RPM#4 and Term and Condition #12 is necessary and appropriate to determine and document the likely cause of death for any sea turtle removed from the Salem intakes and whether the cause of death is attributable to the action under consideration in this Opinion. This represents only a minor change as PSEG has maintained a relationship with MMSC to carry out these activities in the past and this condition is consistent with conditions in previous ITSs for Salem and is part of the normal procedures at the facility.

RPM #5 and Term and Condition #12 are necessary and appropriate to ensure that all live sturgeon are given the maximum probability of remaining alive and not suffering additional injury or subsequent mortality through inappropriate handling or release near the intakes. This represents only a minor change as following these procedures will not result in an increase in cost and is consistent with conditions in previous ITSs for Salem and is part of the normal procedures at the facility or any delays to the proposed project.

RPM #6 and Terms and Conditions #13-15 are necessary and appropriate to ensure the proper handling and documentation of any listed species removed from the intakes that are dead or die while in PSEG custody. This is essential for monitoring the level of incidental take associated with the proposed action and in determining whether the death was related to the operation of the facility. These RPMs and Terms and Conditions represent only a minor change as compliance will not result in an increase in cost and is consistent with conditions in previous ITSs for Salem and is part of the normal procedures at the facility or any delays to the proposed project.

RPM #8-10 and Terms and Conditions #15-23 are necessary and appropriate to ensure the proper identification, handling and documentation of any listed species encountered during REMP sampling for Salem 1, Salem 2 or Hope Creek. This is essential for monitoring the level of incidental take associated with the proposed action. Compliance will also minimize the potential for captures in the gillnet gear to be lethal. These RPMs and Terms and Conditions represent only a minor change as compliance will not result in an increase in cost and will not affect the efficacy or efficiency of the REMP sampling program.

RPM #11-13 and Terms and Conditions #23-34 are necessary and appropriate to ensure the proper identification, handling and documentation of any listed species encountered during trawling and beach seining required by the NJPDES permit issued for Salem. This is essential for monitoring the level of incidental take associated with the proposed action. Compliance will also minimize the potential for captures of sturgeon and sea turtles in the beach seine and trawl

gear to be lethal. These RPMs and Terms and Conditions represent only a minor change as compliance will not result in an increase in cost and will not affect the efficacy or efficiency of the IBMWP sampling program.