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June 6, 2012

MEMORANDUM TO: Jeremy J. Susco, Acting Chief  
Environmental Review and  
Guidance Update Branch  
Division of License Renewal  
Office of Nuclear Reactor Regulation

FROM: Briana A. Balsam, Biologist /RA/  
Environmental Review and  
Guidance Update Branch  
Division of License Renewal  
Office of Nuclear Reactor Regulation

Dennis T. Logan, Aquatic Biologist /RA/  
Environmental Review and  
Guidance Update Branch  
Division of License Renewal  
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF SECTION 7 CONSULTATION ACTIVITIES RELATED  
TO THE NATIONAL MARINE FISHERIES SERVICE'S FINAL RULE  
TO LIST THE ATLANTIC STURGEON

On February 6, 2012, the National Marine Fisheries Service (NMFS) listed five distinct population segments (DPSs) of the Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) under the Endangered Species Act of 1973, as amended (ESA).<sup>1</sup> As a result of the Atlantic sturgeon's listing, the Environmental Review and Guidance Update Branch (RERB) staff reviewed the potential for each U.S. Nuclear Regulatory Commission (NRC)-licensed operating reactor to adversely affect the Atlantic sturgeon in order to identify plants for which the NRC must initiate section 7 consultation pursuant to the ESA.

RERB staff identified 10 operating reactors within the Atlantic sturgeon's range. Of these, the RERB staff identified six operating reactors that have the potential to adversely affect the Atlantic sturgeon or for which the staff was unsure of the potential effects to Atlantic sturgeon upon preliminary review. This memo summarizes the NRC's actions to date pursuant to the ESA for each of the 10 operating reactors.

Brunswick Steam Electric Plant (Southport, NC)

Atlantic sturgeon juveniles and migrating adults are likely to occur in the Cape Fear River in the vicinity of the Brunswick Steam Electric Plant (Brunswick) intake, and adults may occur in the Atlantic Ocean in the vicinity of the Brunswick discharge. Thus, the NRC staff prepared a biological assessment<sup>2</sup> that considered the potential impacts of continued operation through the end of the facility's renewed license terms. In the biological assessment, the staff concluded that Brunswick is not likely to adversely affect the Atlantic sturgeon. The NRC transmitted the

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biological assessment to the NMFS and requested concurrence with the staff's effect determination by letter dated March 26, 2012.<sup>3</sup>

On May 1, 2012, Ms. Nicole Bailey, NMFS, contacted Ms. Briana Balsam, NRC, to request additional information regarding Brunswick's cooling water system and associated thermal plume.<sup>4</sup> The NRC responded to these requests by e-mail on May 15, 2012.<sup>5</sup> At this time, NMFS and NRC are still in consultation regarding Atlantic sturgeon at Brunswick.

#### Calvert Cliffs Nuclear Power Plant (Lusby, MD)

Calvert Cliffs Nuclear Power Plant (Calvert Cliffs) is a two-unit once-through cooling system plant that withdraws and discharges water from the Chesapeake Bay. RERB staff reviewed information in the NRC's 1999 supplemental environmental impact statement (SEIS) for the Calvert Cliffs license renewal,<sup>6</sup> the NRC's 2011 environmental impact statement (EIS) for the combined license (COL) for Calvert Cliffs, Unit 3,<sup>7</sup> and available scientific literature on the Chesapeake Bay population of Atlantic sturgeon.

The NRC did not consider impacts to the Atlantic sturgeon in its 1999 SEIS. However, the NRC staff considered impacts to Atlantic sturgeon in its COL EIS, which indicated that no Atlantic sturgeon appeared in entrainment samples collected at the Calvert Cliffs intake in 2006 and 2007 or in samples collected during the same time period outside the baffle wall. Additionally, no Atlantic sturgeon occurred in impingement samples collected from 1975 through 1995. Based on the lack of evidence that Atlantic sturgeon occur in the vicinity of Calvert Cliffs, RERB staff concluded that the continued operation of Calvert Cliffs would have no effect on Atlantic sturgeon. Thus, the NRC did not initiate consultation with NMFS or take any further actions pursuant to the ESA for Calvert Cliffs.

#### Indian Point Nuclear Generating (Buchanan, NY)

Juvenile Atlantic sturgeon occur near Indian Point Nuclear Generating (Indian Point) because they migrate downstream to estuarine waters. Though sturgeon tend to stay in deeper channels, Entergy's records indicate that Indian Point has impinged some juvenile Atlantic sturgeon in the past. Migrating adults also occur near the plant, but should be able to avoid the low intake velocities of the Indian Point cooling water intake.

The NRC requested reinitiation of formal consultation for the Atlantic sturgeon at Indian Point on May 16, 2012.<sup>8</sup> A biological assessment<sup>9</sup> accompanied this request. Previous to this request, the NRC submitted to NMFS a biological assessment for shortnose sturgeon (*Acipenser brevirostrum*) in December 2008<sup>10</sup> as part of a now-concluded formal section 7 consultation for the proposed license renewal of Indian Point. The NRC supplemented its December 2008 biological assessment in December 2010.<sup>11</sup> The supplement included additional information on the shortnose sturgeon and some information on the Atlantic sturgeon (a candidate species at the time). The NRC supplemented its December 2008 biological assessment a second time in July 2011<sup>12</sup> due to the availability of a new triaxial survey of the Indian Point thermal effluent. The NRC's May 2012 biological assessment incorporated, by reference, the NRC's past biological assessments and included additional information on impingement and entrainment of Atlantic sturgeon. In the assessment, the NRC concluded that continued operation of Indian Point may affect, but is not likely to adversely affect, the Atlantic sturgeon. To date, the NMFS

has not requested additional information from NRC regarding this consultation. NMFS and NRC remain in consultation regarding Atlantic sturgeon at Indian Point at this time.

#### Millstone Power Station (Waterford, CT)

Millstone Power Station (Millstone) is a two-unit once-through cooling system plant that withdraws and discharges water from Long Island Sound. The plant is located in Waterford, Connecticut, on Millstone Point, between the Niantic and Thames Rivers. Salinity levels within this area of the Sound range from 26 to 30 parts per thousand. Because of the high salinity levels, only adult Atlantic sturgeon would occur in the vicinity of Millstone. Adults should be able to avoid the low intake velocities of the Millstone cooling water intake. Additionally, the NRC did not identify any records indicating that Millstone has impinged Atlantic sturgeon in the past. The NRC concluded that the continued operation of Millstone would have no effect on Atlantic sturgeon. Thus, the NRC did not initiate consultation with NMFS or take any further actions pursuant to the ESA for Millstone.

#### Hope Creek and Salem Nuclear Generating Stations (Hancocks Bridge, NJ)

At the time the NMFS published its final rule listing the Atlantic sturgeon, the NRC and NMFS were already in formal consultation for Hope Creek and Salem Nuclear Generating Stations (Hope Creek and Salem). The NRC initiated formal section 7 consultation by letter dated December 13, 2010.<sup>13</sup> The NRC enclosed in that letter the staff's biological assessment,<sup>14</sup> which considered the impacts of the proposed license renewal of Hope Creek and Salem operating licenses on shortnose sturgeon, Atlantic sturgeon, and four species of sea turtles.

On April 14, 2011, PSEG Nuclear, LLC (PSEG) notified the NRC by e-mail that a dead Atlantic sturgeon had been found on the Salem intake structure trash bars on March 18, 2011.<sup>15</sup> At that time, the Atlantic sturgeon was a proposed species, and the March 18<sup>th</sup> impingement was the only known impingement of the species at Salem since it had become a proposed species in October 2010. NRC requested a formal conference for the species by letter dated May 2, 2011.<sup>16</sup> PSEG has not reported any additional instances of Atlantic sturgeon impingements to the NRC to date.

The NMFS issued a draft biological opinion for Salem on December 8, 2011.<sup>17</sup> The NRC and PSEG provided comments on the draft biological opinion on January 4, 2011,<sup>18</sup> and January 11, 2011,<sup>19</sup> respectively. At the time the NMFS published its final rule listing the Atlantic sturgeon, NMFS and NRC were in the process of resolving comments on the draft biological opinion. The NRC requested that NMFS include the Atlantic sturgeon in the ongoing formal consultation by letter dated March 13, 2012.<sup>20</sup> In an April 12, 2012, e-mail,<sup>21</sup> Julie Crocker, NMFS, stated that she was working to incorporate the Atlantic sturgeon in the draft biological opinion. Ms. Crocker indicated that she would provide the NRC with a revised draft by May 1, 2012. However, the NRC has not received a revised draft to date. At this time, NMFS and NRC are still in consultation regarding Hope Creek and Salem.

#### Oyster Creek Nuclear Generating Station (Forked River, NJ)

Oyster Creek Nuclear Generating Station (Oyster Creek) is a one-unit once-through cooling system plant that withdraws and discharges water from Barnegat Bay. Salinity levels in the vicinity of the plant reach as high as 32 parts per thousand. Similar to Millstone, the NRC

concluded that only adult Atlantic sturgeon have the potential to occur in the vicinity of Oyster Creek because of the high salinity levels. Adults should be able to avoid the low intake velocities of the Millstone cooling water intake. The NRC did not identify any records indicating that Oyster Creek has impinged Atlantic sturgeon in the past. The NRC concluded that the continued operation of Oyster Creek would have no effect on Atlantic sturgeon. Thus, the NRC did not initiate consultation with NMFS or take any further actions pursuant to the ESA for Oyster Creek.

#### Pilgrim Nuclear Power Station (Plymouth, MA)

Subadults and adult Atlantic sturgeon are expected to occur in Cape Cod occasionally during migration, but the available literature does not indicate that they are common to the Plymouth area near the Pilgrim Nuclear Power Station (Pilgrim). However, NRC staff prepared a biological assessment<sup>22</sup> in February 2012 to ensure that the staff considered all potential impacts to the species that would result from the proposed license renewal. The February 2012 biological assessment supplemented the staff's December 2006 biological assessment, which considered the potential effects of the proposed license renewal on four species of sea turtles, five species of whales, and the shortnose sturgeon. In its supplemental biological assessment, the staff concluded that the proposed license renewal would have no effect on the Atlantic sturgeon. The NRC transmitted the supplemental biological assessment to the NMFS and requested concurrence with the staff's determination by letter dated February 29, 2012.<sup>23</sup>

On March 26, 2012, the NMFS sent a letter to the NRC summarizing a March 22, 2012, conference call between the NMFS and NRC.<sup>24</sup> The letter indicated that NMFS is unable to concur with the NRC's "no effect" determination because listed species are present in the action area and may be exposed to the effects on Pilgrim operations. In a letter dated May 17, 2012,<sup>25</sup> the NMFS concluded that the continued operation of Pilgrim may affect, but is not likely to adversely affect the Atlantic sturgeon and 10 other listed species under NMFS jurisdiction. This letter concluded informal section 7 consultation for both license renewal and the Atlantic sturgeon listing.

#### Seabrook Station (Seabrook, NH)

Seabrook Station (Seabrook) is a one-unit once-through cooling system plant that withdraws and discharges water from the Atlantic Ocean. Because of the plant's location, only adult Atlantic sturgeon have the potential to occur in the vicinity of the plant. Adults should be able to avoid the low intake velocities of the Seabrook cooling water intake. Additionally, the NRC did not identify any records indicating that Seabrook has impinged Atlantic sturgeon in the past. The NRC concluded that the continued operation of Seabrook would have no effect on Atlantic sturgeon. Thus, the NRC did not initiate consultation with NMFS or take any further actions pursuant to the ESA for Seabrook.

#### Surry Power Station (Surry, VA)

Atlantic sturgeon larvae and migrating adults are likely to occur in the James River in the vicinity of Surry Power Station (Surry). Thus, the NRC staff prepared a biological assessment<sup>26</sup> that considered the potential impacts of continued operation through the end of the facility's renewed license terms. In the biological assessment, the staff concluded that Surry is not likely to adversely affect the Atlantic sturgeon. The NRC transmitted the biological assessment to the

NMFS and requested concurrence with the staff's effect determination by letter dated March 20, 2012.<sup>27</sup>

On April 4, 2012, Ms. Julie Crocker, NMFS, contacted Ms. Briana Balsam, NRC, to request additional information regarding Surry's cooling water system and associated thermal plume.<sup>28</sup> On May 7, 2012, Ms. Cathy Taylor, Dominion Resource Services, Inc. (Dominion) sent NRC answers to NMFS's questions.<sup>29</sup> The NRC forwarded Dominion's responses to NMFS on May 8, 2012.<sup>30</sup> At this time, NMFS and NRC are still in consultation regarding Atlantic sturgeon at Surry.

### Summary and Conclusion

Following the NMFS's listing of the Atlantic sturgeon under the ESA, RERB staff considered the potential for each NRC-licensed operating reactor to adversely affect the Atlantic sturgeon. The staff identified 10 plants within the range of the Atlantic sturgeon. Of these, the staff concluded that four plants would have no effect on the Atlantic sturgeon (Calvert Cliffs, Millstone, Oyster Creek, and Seabrook). The staff did not prepare a biological assessment or initiate section 7 consultation for these four plants.

For the remaining plants, RERB staff prepared four biological assessments to determine the potential effects of plant operation on the Atlantic sturgeon. The staff concluded that Pilgrim would have no effect on the species, while Brunswick, Indian Point, and Surry may affect, but are not likely to adversely affect the species. The staff forwarded copies of each of these biological assessments to the appropriate NMFS office with a request to initiate consultation.

In the case of Salem and Hope Creek, the RERB staff had prepared a biological assessment in December 2010 that considered Atlantic sturgeon, which was a proposed species at the time. The staff concluded in that biological assessment that Hope Creek would have no effect and Salem may affect, but is not likely to adversely affect the species. After the NMFS listed the Atlantic sturgeon, the staff sent a letter requesting that the NMFS consider the species in its biological opinion associated with the ongoing formal consultation for Salem and Hope Creek.

In total between February and May 2012, the RERB staff initiated section 7 consultations for six plants as a result of the Atlantic sturgeon listing. To date, the NRC and NMFS have concluded one of these consultations (Pilgrim). The staff is working with both the NMFS Northeast and Southeast Regional Offices to ensure that each office has the information that it requires to complete its review of potential effects to the Atlantic sturgeon for each of the remaining consultations.

Docket Nos. 50-219, 50-247, 50-272, 50-280, 50-281, 50-286, 50-293, 50-311, 50-317, 50-318, 50-324, 50-336, 50-354, 50-423, and 50-443

NMFS and requested concurrence with the staff's effect determination by letter dated March 20, 2012.<sup>27</sup>

On April 4, 2012, Ms. Julie Crocker, NMFS, contacted Ms. Briana Balsam, NRC, to request additional information regarding Surry's cooling water system and associated thermal plume.<sup>28</sup> On May 7, 2012, Ms. Cathy Taylor, Dominion Resource Services, Inc. (Dominion) sent NRC answers to NMFS's questions.<sup>29</sup> The NRC forwarded Dominion's responses to NMFS on May 8, 2012.<sup>30</sup> At this time, NMFS and NRC are still in consultation regarding Atlantic sturgeon at Surry.

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<b>NAME</b>	IKing	BBalsam	DLogan
<b>DATE</b>	6/6/2012	6/6/2012	6/6/2012

Memo to J. Susco from B. Balsam and D. Logan dated June 6, 2012

**SUBJECT: SUMMARY OF SECTION 7 CONSULTATION ACTIVITIES RELATED TO THE  
NMFS'S FINAL RULE TO LIST THE ATLANTIC STURGEON**

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- <sup>2</sup> NRC's Biological Assessment Atlantic Sturgeon at Brunswick Steam Electric Plant, Continued Operation. March 2012. ML12065A380.
- <sup>3</sup> Letter from J. Susco, RERB Acting Chief, NRC, to R. Crabtree, Southeast Regional Administrator, NMFS, Request to reinstate section 7 consultation for Atlantic sturgeon at Brunswick Steam Electric Plant, Units 1 and 2. March 26, 2012. ML12065A380.
- <sup>4</sup> Email from N. Bailey, ESA Consultant, NMFS, to B. Balsam, Biologist, NRC, Requesting additional information about Brunswick thermal plume. May 1, 2012. ML12137A032.
- <sup>5</sup> Email from B. Balsam, Biologist, NRC, to N. Bailey, ESA Consultant, NMFS, Responses to May 1, 2012, NMFS questions on Brunswick thermal plume. May 15, 2012. ML12137A034.
- <sup>6</sup> NUREG-1437, Supplement 1, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants Regarding Calvert Cliffs Nuclear Power Plant, Units 1 and 2." October 1999.
- <sup>7</sup> NUREG-1936, "Final Environmental Impact Statement for the Combined License (COL) for Calvert Cliffs Nuclear Power Plant, Unit 3."
- <sup>8</sup> Letter from J. Susco, RERB Branch Chief, NRC, to P. Kurkul, Northeast Regional Administrator, NMFS, Request to reinstate section 7 consultation for the Indian Point Nuclear Generating, Unit Nos. 2 and 3, due to listing of Atlantic sturgeon. May 16, 2012. ML12100A082.
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- <sup>10</sup> NRC's Biological Assessment of the Potential Effects on Federally Listed Species from the Proposed Renewal of Indian Point Nuclear Generating, Unit Nos. 2 and 3. *in* Appendix E of NUREG-1437, Supplement 38. December 2008. ML083540614.
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- <sup>18</sup> Email from B. Balsam, Biologist, NRC, to J. Crocker, Fisheries Biologist, NMFS, Forwarding NRC's comments on draft biological opinion for Salem and Hope Creek. January 4, 2011. ML12011A049.
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