

OCT 05 2011

LR-E11-0129

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U. S. Nuclear Regulatory Commission  
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Washington, DC 20555

**REPORT OF IMPINGEMENT OF SHORTNOSE STURGEON  
SALEM GENERATING STATION UNIT NO. 1  
DOCKET NO. 50-272**

In accordance with Section 5.4.2 of Appendix B, Environmental Protection Plan, to the Operating License for the Salem Generating Station, PSEG Nuclear LLC (PSEG) hereby transmits notification of a nonroutine event discovery, and documents the occurrence and removal of a shortnose sturgeon from the Salem Generating Station circulating water intake structure.

Enclosed please find three (3) attachments. Attachment 1 gives a narrative description of the event, as requested by the Nuclear Regulatory Commission (NRC). Attachment 2, requested by the National Marine Fisheries Service (NMFS), provides more information regarding the observance and retrieval of the sturgeon. Attachment 3, is a National Marine Fisheries Service (NMFS) Sturgeon Salvage Form, which provides more specific information regarding the observance and retrieval of the sturgeon.

There are no commitments contained in this letter.

If you have any questions or require additional information, please do not hesitate to contact Jeffrey Pantazes, Manager – Nuclear Environmental Affairs at (856) 339-7900.

Sincerely,

A handwritten signature in black ink, appearing to read "LW", written over a horizontal line.

Larry Wagner  
Plant Manager - Salem  
PSEG Nuclear LLC

Attachments (3)

TE23  
NRR

OCT 05 2011

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C Mr. William Dean, Administrator - Region I  
U. S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, PA 19406

Mr. R. Ennis, Licensing Project Manager - Salem  
U. S. Nuclear Regulatory Commission  
One White Flint North  
11555 Rockville Pike  
Mail Stop 0-4D-3  
Rockville, MD 20852

USNRC Senior Resident Inspector - Salem  
Mail Code X24

Mr. P. Mulligan, Manager IV  
Bureau of Nuclear Engineering  
33 Arctic Parkway  
P. O. Box 415  
Trenton, NJ 08625-0415

Ms. Lynn Lankshear  
National Marine Fisheries Service  
Protected Resources Division  
55 Great Republic Drive, Suite 04-400  
Gloucester, MA 01930

Mr. Michael Ludwig  
National Marine Fisheries Service  
212 Rogers Avenue  
Milford, CT 06460

Mr. Dave Jenkins  
Endangered and Nongame Species Program  
7A Van Sykel's Road  
Hampton, NJ 08827

Salem Commitment Coordinator  
Mail Code X25

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BC Salem Site Vice President  
Salem Plant Manager  
Nuclear Environmental Affairs Manager  
Records Management

ATTACHMENT 1  
Page 1 of 2  
INCIDENTAL TAKE OF SHORTNOSE STURGEON

OCCURRENCE DATE: September 9, 2011

FACILITY: Salem Generating Station, Unit 1  
PSEG Nuclear LLC  
Hancocks Bridge, NJ 08038

IDENTIFICATION OF OCCURRENCE:

A shortnose sturgeon (*Acipenser brevirostrum*) was removed from the Circulating Water System (CWS) Intake trash racks at the Salem Generating Station. The sturgeon was recovered on September 9, 2011. Shortnose sturgeon are federally listed as "endangered" species under the Endangered Species Act of 1973, as amended.

CONDITIONS PRIOR TO OCCURRENCE:

September 9, 2011

Unit 1 85 – 100 percent power  
Unit 2 100 percent power

DESCRIPTION OF OCCURRENCE:

DATE	TIME	STATUS	INTAKE BAY	FORK LENGTH (MM)	TOTAL LENGTH (MM)	WEIGHT (KG)
09/9/11	1430	Deceased	Unknown	615	715	1.24

During routine cleaning of the trash racks, Maintenance Common personnel recovered the sturgeon, which was deceased and starting to decompose. Environmental Consulting Services Inc. (ECSI) confirmed the identification of the sturgeon as a Shortnose Sturgeon and notified Salem Operations and Nuclear Environmental Affairs.

The sturgeon was transported to ECSI headquarters. There it was examined, measured, weighed and scanned for Passive Integrated Transponder (PIT) tags. No response was obtained when the sturgeon was scanned for PIT tags.

The U. S. Nuclear Regulatory Commission (NRC), the National Marine Fisheries Service (NMFS) and the New Jersey Department of Environmental Protection (NJDEP) were notified regarding this occurrence.

#### APPARENT CAUSE OF OCCURRENCES

Based on historical and recent records, shortnose sturgeon appear to utilize the entire Delaware estuary-river complex, from the river mouth to New Hope, Pennsylvania (0-238 river kilometer - rkm). Spawning occurs north of Trenton, 128 rkm upstream from the Salem and Hope Creek Generating Stations. It is unlikely that larval or post-larval fish would travel the distance downstream to the site. Adult Shortnose sturgeon may move into the surrounding area during fall migration to wintering grounds. Healthy adult and juvenile shortnose sturgeon are strong enough swimmers that they should be able to escape from intake velocities typically encountered at the trash bars. Sturgeon that are in a severely weakened (or deceased) condition may be subject to impingement.

#### ANALYSIS OF OCCURRENCE

Between 1978 and 2008, a total of twenty-one (21) Shortnose sturgeon have been collected at the CWS intake, two in 1978, one in 1981, three in 1991, two in 1992, two in 1994, three in 1998, one in 1999, one in 2000, one in 2003, one in 2004, one in 2007, one in 2008 and two in 2011.

#### CORRECTIVE ACTIONS

The trash racks are required to be inspected every two hours from June 1 through October 15, cleaned three times per week from May 1 and November 15, and as mentioned above, are required to be cleaned daily between June 1 and October 15. Observations are made specifically for sea turtles and sturgeon during this time. During the remaining months the trash racks are inspected daily for debris load and cleaned as necessary. Since the Shortnose sturgeon was not recovered alive and it is not likely that the facility caused the death, it is felt that the measures in place are sufficient and no other actions are warranted at this time.

ATTACHMENT 2  
Page 1 of 1  
REPORTING REQUIREMENTS  
Appendix II to Section 7 Consultation

Photographs should be taken and the information requested below should be collected in association with all protected species (sea turtles and shortnose sturgeon) impingements. This documentation should be sent to the:

National Marine Fisheries Service  
Habitat Conservation Branch  
One Blackburn Drive  
Gloucester, MA 01930-2298

Protected Species Impingements  
Salem and Hope Creek Generating Stations

**Observers full name:** Maynard McAllister, John Pugliese – PSEG Nuclear LLC, Maintenance Common

**Reporters full name:** Jeffrey Pantazes – Nuclear Environmental Affairs - Manager

**Species identification:** Shortnose Sturgeon (*Acipenser brevirostrum*)

**Site of impingement:** Salem Generating Station – CWS Trash Racks

**Date and time impingement was observed:** 09/9/11 1420hrs

**Date and time of animal was collected:** 09/9/11 1420 hrs

**Tidal stage at time of collection:** Out going tide

**Date and time of last observation of screen:** 09/9/11 1420 hrs

**Water temperature at site at time of impingement:** 25.4<sup>0</sup> (C)

**Average percent of power generating capacity achieved per unit over the 48 hours previous to impingement:**  
Unit 1 - 85 percent power  
Unit 2 - 100 percent power

**Condition of animal:** Deceased

**Shortnose Sturgeon Measurements:**

**Fork Length:** 615 mm

**Total Length:** 715 mm

**Weight:** 1.24 kg

**Remarks:** The sturgeon was found during routine cleaning of the CWS Intake trash racks. The sturgeon was deceased at the time of capture.

# STURGEON SALVAGE FORM

For use in documenting dead sturgeon in the wild under ESA permit no. 1614 (version 07-20-2009)

**INVESTIGATOR'S CONTACT INFORMATION**  
 Name: First William Last Biggs  
 Agency Affiliation \_\_\_\_\_ Email William.Biggs@pseg.com  
 Address P.O. Box 236 M/C H18  
Hancocks Bridge NJ, 08038  
 Area code/Phone number (856) 339-2678

**UNIQUE IDENTIFIER (Assigned by NMFS)**  
 Abr090012011NJ  
**DATE REPORTED:**  
 Month 09 Day 09 Year 2011  
**DATE EXAMINED:**  
 Month  Day  Year 20

**SPECIES: (check one)**  
 shortnose sturgeon  
 Atlantic sturgeon  
 Unidentified *Acipenser* species  
 Check "Unidentified" if uncertain.  
 See reverse side of this form for aid in identification.

**LOCATION FOUND:**  Offshore (Atlantic or Gulf beach)  Inshore (bay, river, sound, inlet, etc)  
 River/Body of Water Delaware River City \_\_\_\_\_ State \_\_\_\_\_  
 Descriptive location (be specific) Cooling water intake at the Salem Nuclear Generating Station  
 Latitude \_\_\_\_\_ N (Dec. Degrees) Longitude \_\_\_\_\_ W (Dec. Degrees)

**CARCASS CONDITION at time examined: (check one)**  
 1 = Fresh dead  
 2 = Moderately decomposed  
 3 = Severely decomposed  
 4 = Dried carcass  
 5 = Skeletal, scales & cartilage

**SEX:**  
 Undetermined  
 Female  Male  
 How was sex determined?  
 Necropsy  
 Eggs/milt present when pressed  
 Borescope

**MEASUREMENTS:** Circle unit  
 Fork length 615 mm  
 Total length 715 mm  
 Length  actual  estimate  
 Mouth width (inside lips, see reverse side) \_\_\_\_\_ cm / in  
 Interorbital width (see reverse side) \_\_\_\_\_ cm / in  
 Weight  actual  estimate 1.24 kg

**TAGS PRESENT?** Examined for external tags including fin clips?  Yes  No Scanned for PIT tags?  Yes  No

Tag #	Tag Type	Location of tag on carcass
None		None

**CARCASS DISPOSITION: (check one or more)**  
 1 = Left where found  
 2 = Buried  
 3 = Collected for necropsy/salvage  
 4 = Frozen for later examination  
 5 = Other (describe) \_\_\_\_\_

**Carcass Necropsied?**  
 Yes  No  
 Date Necropsied: \_\_\_\_\_  
 Necropsy Lead: \_\_\_\_\_

**PHOTODOCUMENTATION:**  
 Photos/video taken?  Yes  No  
 Disposition of Photos/Video: \_\_\_\_\_  
On file at site

SAMPLES COLLECTED? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Sample	How preserved	Disposition (person, affiliation, use)

**Comments:** Sturgeon was shipped to NMFS in Gloucester MA. In September.

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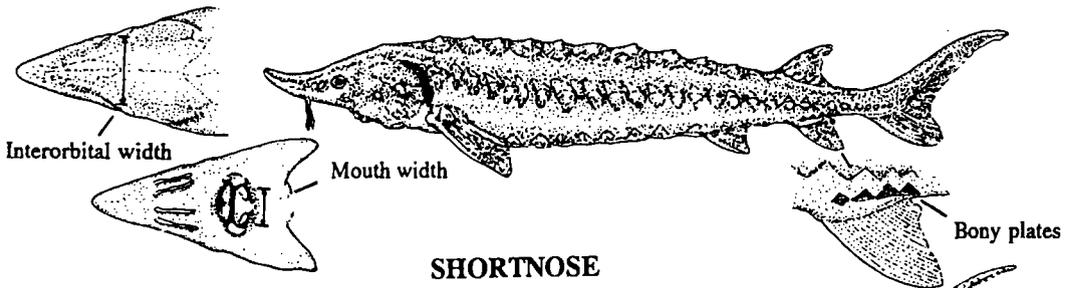


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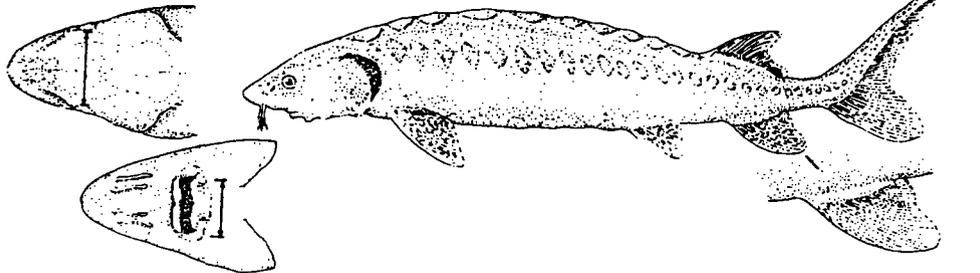
## Distinguishing Characteristics of Atlantic and Shortnose Sturgeon (version 07-20-2009)

Characteristic	Atlantic Sturgeon, <i>Acipenser oxyrinchus</i>	Shortnose Sturgeon, <i>Acipenser brevirostrum</i>
Maximum length	> 9 feet/ 274 cm	4 feet/ 122 cm
Mouth	Football shaped and small. Width inside lips < 55% of bony interorbital width	Wide and oval in shape. Width inside lips > 62% of bony interorbital width
*Pre-anal plates	Paired plates posterior to the rectum & anterior to the anal fin.	1-3 pre-anal plates almost always occurring as median structures (occurring singly)
Plates along the anal fin	Rhombic, bony plates found along the lateral base of the anal fin (see diagram below)	No plates along the base of anal fin
Habitat/Range	Anadromous; spawn in freshwater but primarily lead a marine existence	Freshwater amphidromous; found primarily in fresh water but does make some coastal migrations

### ATLANTIC



### SHORTNOSE



Describe any wounds / abnormalities (note tar or oil, gear or debris entanglement, propeller damage, etc.). **Please note if no wounds / abnormalities are found.** \_\_\_\_\_ Hard to determine due to fish condition.

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Data Access Policy: Upon written request, information submitted to National Marine Fisheries Service (NOAA Fisheries) on this form will be released to the requestor provided that the requestor credit the collector of the information and NOAA Fisheries. NOAA Fisheries will notify the collector that these data have been requested and the intent of their use.

Submit completed forms (within 30 days of date of investigation) to: **Jessica Pruden**, Shortnose Sturgeon Recovery Coordinator, NOAA Fisheries Northeast Region, 55 Great Republic Drive, Gloucester, MA 01930  
 Phone: 978-282-8482; Fax: 978-281-9394; E-Mail [Jessica.Pruden@noaa.gov](mailto:Jessica.Pruden@noaa.gov)