



ND-2013-0007  
April 4, 2013

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Subject: **PSEG Early Site Permit Application**  
**Docket No. 52-043**  
**Response to Request for Additional Information, No. Env-05S,**  
**ESP EIS 2.4.2 - Aquatic Ecology**

- References:
- 1) PSEG Power, LLC Letter No. ND-2013-0006 to USNRC, Submittal of Revision 2 of the Early Site Permit Application for the PSEG Site, dated March 27, 2013
  - 2) Env-05S, Review Section: ESP EIS 2.4.2 - Aquatic Ecology, dated March 5, 2013 (eRAI 7034)
  - 3) PSEG Power, LLC Letter No. ND-2012-0054 to USNRC, Response to Request for Additional Information, No. Env-05, ESP EIS 2.4.2 - Aquatic Ecology, dated September 28, 2012

The purpose of this letter is to respond to the request for additional information (RAI) identified in Reference 2 above. This RAI addresses Question No. ESP EIS 2.4.2-2 for the Environmental Report (ER), as submitted in Part 3 of the PSEG Site Early Site Permit Application, Revision 2.

Enclosure 1 provides our response for RAI No. Env-05S, Question No. ESP EIS 2.4.2-2.

Enclosure 2 includes the revisions to the ER resulting from our response to RAI No. Env-05S.

Enclosure 3 provides the electronic files requested for docketing in RAI No. Env-05S.

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NRD

If any additional information is needed, please contact David Robillard, PSEG Nuclear Development Licensing Engineer, at (856) 339-7914.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 4th day of April, 2013.

Sincerely,



James Mallon  
Early Site Permit Manager  
Nuclear Development  
PSEG Power, LLC

Enclosure 1: Response to NRC Request for Additional Information, RAI No. Env-05S, Question No. ESP EIS 2.4.2-2, Review Section: ESP EIS 2.4.2 - Aquatic Ecology

Enclosure 2: Proposed revisions, Part 3 – Environmental Report (ER)

Enclosure 3: CD-ROM Containing Files Requested for Docketing in RAI No. Env-05S

cc: USNRC Project Manager, Division of New Reactor Licensing, PSEG Site (w/enclosures)  
USNRC Environmental Project Manager, Division of New Reactor Licensing (w/enclosures)  
USNRC Region I, Regional Administrator (w/enclosures)  
Oak Ridge National Laboratory (w/enclosures)

**PSEG Letter ND-2013-0007, dated April 4, 2013**

**ENCLOSURE 1**

**RESPONSE to RAI No. Env-05S**

**QUESTION No.**

**ESP EIS 2.4.2-2**

**Review Section: ESP EIS 2.4.2 - Aquatic Ecology**

**Response to RAI No. Env-05S, Question ESP EIS 2.4.2-2:**

In Reference 2, the NRC staff asked PSEG for information regarding Aquatic Ecology, as described in Subsection 2.4.2 of the Environmental Report. The specific request was:

*Env-05S*

1) *The following references are available in the PSEG reading room and need to be submitted for docketing:*

*Salem Generating Station, NJPDES Permit No. NJ005622, Biological Monitoring Program 2003 Annual Report*  
*Salem Generating Station, NJPDES Permit No. NJ005622, Biological Monitoring Program 2004 Annual Report*  
*Salem Generating Station, NJPDES Permit No. NJ005622, Biological Monitoring Program 2005 Annual Report*  
*Salem Generating Station, NJPDES Permit No. NJ005622, Biological Monitoring Program 2006 Annual Report*  
*Salem Generating Station, NJPDES Permit No. NJ005622, Biological Monitoring Program 2007 Annual Report*  
*Salem Generating Station, NJPDES Permit No. NJ005622, Biological Monitoring Program 2008 Annual Report*  
*Salem Generating Station, NJPDES Permit No. NJ005622, Biological Monitoring Program 2009 Annual Report*  
*Salem Generating Station, NJPDES Permit No. NJ005622, Biological Monitoring Program 2010 Annual Report*

2) *The following references are listed in the ER and need to be submitted for docketing:*

*2.4-25 Connelly, R.A., G.A. Hayes, and R.A. Tudor, Abundance and Distribution of Benthic Macroinvertebrates, Report to Public Service Electric and Gas Co., Newark, NJ, 1977.*

*2.4-86 Ichthyological Associates, Inc. (IA), An Ecological Study of the Delaware River near Artificial Island 1968 – 1976: A Summary, Report to Public Service Electric and Gas Co., Newark, NJ, 1980.*

*2.4-178 Smith, R.W., A Quantitative Study of Benthic Macroinvertebrates of the Delaware River in the Vicinity of Artificial Island, Report to Public Service Electric and Gas Co., Newark, NJ., 1972.*

*2.4-221 V.J. Schuler Associates, INC., 1986 Annual Report – Artificial Island Ecological Studies, January 1 through December 21, 1986, Salem*

*Generating Station Unit No. 1 and Unit No. 2 and Hope Creek Generating Station Unit No. 1, February 19, 1988.*

*2.4-222 V.J. Schuler Associates, INC., 1987 Annual Report – Artificial Island Ecological Studies, Report to Public Service Electric and Gas Co., Newark, NJ, 1989.*

3) *Identify the source of the 2009 data presented in the following tables:*

- Macroinvertebrate surveys in ponds, Table 2.4-13*
- Macroinvertebrate surveys in marsh creeks, Table 2.4-15*
- Macroinvertebrate surveys in the Delaware River, Table 2.4-25*
- Fish collections in ponds, Table 2.4-12*
- Fish collections in small creeks, Table 2.4-14*

*Supporting Information: A detailed and thorough description of the aquatic ecology in the vicinity of the power station site and associated transmission corridors is essential for the evaluation of potential impacts to the aquatic environment that may result from plant construction or operation (ESRP 2.4.2). The NRC staff must conduct an independent review of the data/information provided by the applicant. Therefore, any applicant-supplied data/information used by the NRC staff in making their analyses and conclusions must be placed on the project docket.*

**PSEG Response to NRC RAI:**

Adobe pdf files of the references requested in sub-questions 1) and 2) above are provided in Enclosure 3.

3) The data presented in ER Tables 2.4-12 through 2.4-15 and 2.4-25 were developed as part of the PSEG ESPA sampling program in 2009 and reported in these tables. Therefore, there is no specific reference document for these tables. The tables will be updated as described in Enclosure 2 to provide a clarifying note to that effect.

**Associated PSEG Site ESP Application Revisions:**

ER Tables 2.4-12 through 2.4-15 and 2.4-25 will be updated as described in Enclosure 2 of this document.

**PSEG Letter ND-2013-0007, dated April 4, 2013**

**ENCLOSURE 2**

**Proposed Revisions  
Part 3 – Environmental Report (ER)  
Subsection 2.4.2 – Aquatic Ecology**

**PSEG Site  
ESP Application  
Part 3, Environmental Report**

ADD "(b)" per RAI No. Env-05S.

**Table 2.4-12  
Species Composition and Abundance of Fish Collections from Ponds on the PSEG Site, by Season, 2009**

Scientific Name	Common Name	February <sup>(a)</sup>		May			July			September		
		AS-04	AS-09	AS-04	AS-09	AS-014	AS-04	AS-09	AS-14	AS-04	AS-09	AS-014
<b>Stations</b>												
<i>Anguilla rostrata</i>	American eel							1			1	
<i>Cyprinodon variegatus</i>	Sheepshead minnow			19			78					41
<i>Cyprinus carpio</i>	Common carp								105	37		
<i>Fundulus diaphanus</i>	Banded killifish			50			6			6		
<i>Fundulus heteroclitus</i>	Mummichog			41		1			51	1		16
<i>Gambusia affinis</i>	Mosquitofish		1									
<i>Lepomis gibbosus</i>	Pumpkinseed		20	34	3		230	6	27			
<i>Lepomis macrochirus</i>	Bluegill				49			50				
<i>Menidia beryllina</i>	Inland silverside	4		8	1		2			54	3	73
<i>Micropterus salmoides</i>	Largemouth bass		1		1			10			71	
<i>Morone americana</i>	White perch				1						3	
<b>Total Number of Individuals</b>		4	22	152	55	1	318	67	183	98	78	130
<b>Total Number of Species</b>		1	3	5	5	1	4	4	3	4	4	3

a) Sampling location AS-14 was established after the February 2009 sampling event and therefore no data was obtained for the winter season. Winter sampling at AS-14 could not be performed in January 2010 due to ice cover.

INSERT "b) Information in this table collected as part of ESPA sampling program." per RAI No. Env-05S.

PSEG Site  
 ESP Application  
 Part 3, Environmental Report

ADD "(a)" per RAI  
 No. Env-05S.

Table 2.4-13  
 Taxonomic Composition and Abundance in Macroinvertebrate Surveys Collected  
 by Ponar Dredge in Ponds on the PSEG Site, 2009

Scientific Name	Spring			Fall		
	AS-04	AS-09	AS-14	AS-04	AS-09	AS-14
<b>PHYLUM NEMATODA</b>						
Unidentified <i>Nematoda</i>		1				
<b>PHYLUM ANNELIDA</b>						
<b>Class Oligochaeta</b>						
<i>Limnodrilus</i> sp.	51	137	48			
<i>Pristina</i> sp.		1				
Unidentified <i>Naididae</i>		1				
Unidentified <i>Oligochaeta</i>					1	
Unidentified <i>Tubificidae</i>	11	185		2		
<b>PHYLUM ARTHROPODA</b>						
<b>Subphylum Crustacea</b>						
<b>Order Amphipoda</b>						
<i>Gammarus daiberi</i>	1	1				
<b>Order Isopoda</b>						
<i>Cyathura polita</i>				1		
<b>Subphylum Mandibulata</b>						
<b>Class Insecta</b>						
<b>Order Diptera</b>						
<i>Ceratopogonidae</i>	5					
<i>Chironomus</i> sp.	117	6	31			
<i>Glyptotendipes</i> sp.	1		1			
<i>Micropsectra</i> sp.	2					
<i>Polypedilum</i> sp.	1					
<i>Tanytus</i> sp.	3	2	4			
<i>Tanytarsus</i> sp.	1					
Unidentified <i>Chironomidae</i>	2					
Total Number of Individuals	195	334	84	3	1	0
Total Number of Taxa	11	8	4	2	1	0

← INSERT "a) Information in this table collected as part of  
 ESPA sampling program." per RAI No. Env-05S.



PSEG Site  
ESP Application  
Part 3, Environmental Report

ADD "(a)" per RAI  
No. Env-05S.

Table 2.4-14  
Species Composition and Abundance of Fish Collections from Small Marsh Creeks  
on or near the PSEG Site, by Season, 2009

Scientific Name	Common Name	February			May			July			September		
		AS-05	AS-06	AS-10	AS-05	AS-06	AS-10	AS-05	AS-06	AS-10	AS-05	AS-06	AS-10
<i>Anguilla rostrata</i>	American eel	1											
<i>Brevoortia tyrannus</i>	Atlantic menhaden					31			13				
<i>Notemigonus crysoleucas</i>	Golden shiner											1	
<i>Ameiurus nebulosus</i>	Brown bullhead											2	
<i>Cyprinodon variegatus</i>	Sheepshead minnow										10		
<i>Fundulus heteroclitus</i>	Mummichog	51	56	37	49	40	16	21	16	282	11	9	56
<i>Morone americana</i>	White perch							4	3		1		
<i>Morone saxatilis</i>	Striped bass				1	2		1			1		
<i>Gobiosoma bosc</i>	Naked goby	1											
Total number of individuals		53	56	37	50	73	16	26	32	292	16	9	56
Total number of species		3	1	1	2	3	1	3	3	2	5	1	1

INSERT "a) Information in this table collected as part of  
ESPA sampling program." per RAI No. Env-05S.

PSEG Site  
 ESP Application  
 Part 3, Environmental Report

ADD "(a)" per RAI  
 No. Env-05S.

Table 2.4-15 (Sheet 2 of 2)  
 Taxonomic Composition and Abundance in Macroinvertebrate Surveys Collected by Ponar Dredge in Marsh Creeks  
 on or near the PSEG Site, 2009

Scientific Name	Spring 2009							Fall 2009						
	Large Marsh Creeks				Small Marsh Creeks			Large Marsh Creeks				Small Marsh Creeks		
	AS-01	AS-02	AS-03	AS-11	AS-05	AS-06	AS-10	AS-01	AS-02	AS-03	AS-11	AS-05	AS-06	AS-10
<b>Order Decapoda</b>														
<i>Callinectes sapidus</i>								1						
<i>Hemigrapsus sanguineus</i>		1												
<b>Order Isopoda</b>														
<i>Chiridotea almyra</i>				3										
<i>Cyathura polita</i>		9		1	2									
<i>Edotea triloba</i>			1											
<b>Order Mysidacea</b>														
<i>Neomysis</i> sp.	3													
<i>Neomysis americana</i>		3												
<b>Subphylum</b>														
<b>Mandibulata</b>														
<b>Class Insecta</b>														
<b>Order Diptera</b>														
<i>Chironomus</i> sp.					5	1	13							1
<i>Seromyia</i> sp.							4							
Total Number of Individuals	12	756	228	26	84	401	48	3	1	1	2	1	1	1
Total Number of Taxa	4	8	8	9	11	9	5	3	1	1	2	1	1	1

INSERT "(a) Information in this table collected as part of  
 ESPA sampling program." per RAI No. Env-05S.

PSEG Site  
 ESP Application  
 Part 3, Environmental Report

ADD "(a)" per RAI  
 No. Env-05S.

Table 2.4-25  
 Taxonomic Composition and Abundance in Macroinvertebrate Surveys Collected by  
 Ponar Dredge in the Delaware River near the PSEG Site, 2009

Scientific Name	Spring				Fall			
	AS-07	AS-12	AS-13	AS-15	AS-07	AS-12	AS-13	AS-15
<b>PHYLUM ANNELIDA</b>								
Class Oligochaeta								
Unidentified Enchytraeidae								1
Unidentified Naididae	1			1				
Unidentified Oligochaeta								1
Class Polychaeta								
Unidentified Polychaeta	2		5	15				
Order Spionida (Spionids)								
<i>Marenzelleria viridis</i>				9				21
<b>PHYLUM MOLLUSCA</b>								
Class Pelecypoda								
<i>Mya arenaria</i>	1							
<i>Rangea cuneata</i>	1							
<b>PHYLUM ARTHROPODA</b>								
Subphylum Crustacea								
Order Amphipoda (Scuds)								
Unidentified Amphipoda				1				
<i>Corophium lacustre</i>	5							
<i>Corophium</i> sp.				1				
<i>Gammarus</i> sp.	2		6					
<i>Gammarus daiberi</i>	3							
<i>Haustorius canadensis</i>	1							
<i>Monoculodes edwardsi</i>	4	1		12				
<i>Protohaustorius wigleyi</i>			1					
Order Isopoda (Pill bugs, wood lice)								
<i>Chiridotea almyra</i>	7	10						
<i>Chiridotea</i> sp.			6	2				
<i>Cyathura polita</i>	2							
Order Mysida (Mysids)								
<i>Neomysis americana</i>			3	2				
Total number of individuals	29	11	21	43	0	0	0	23
Total number of taxa	10	2	5	5	0	0	0	1

← INSERT "a) Information in this table collected as part of  
 ESPA sampling program." per RAI No. Env-05S.

Rev. 1

2.4-155

**PSEG Letter ND-2013-0007, dated April 4, 2013**

**ENCLOSURE 3**

**CD-ROM Containing Files Requested for Docketing in RAI No. Env-05S**

