



ND-2011-0011
March 21, 2011

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, RAI No. 9, Site
Location and Description

- References:
- 1) PSEG Power, LLC letter to USNRC, Application for Early Site Permit for the PSEG Site, dated May 25, 2010
 - 2) RAI No. 9, SRP Section: 02.01.01 – Site Location and Description, dated February 22, 2011 (eRAI 5357)

The purpose of this letter is to respond to the request for additional information (RAI) identified in Reference 2 above. This RAI addresses Site Location and Description, as described in Section 2.1.1 of the Site Safety Analysis Report (SSAR), as submitted in Part 2 of the PSEG Site Early Site Permit Application, Revision 0.

Enclosure 1 provides our response for RAI No. 9, Questions No. 02.01.01-1 and 02.01.01-2. Our response to both questions will result in a revision to the SSAR. Enclosure 2 includes the proposed revisions to the SSAR. Enclosure 3 includes the new regulatory commitment established in this submittal.

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

DO79

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 21st day of March, 2011.

Sincerely,



David P. Lewis
Nuclear Development Project Director
PSEG Power, LLC

- Enclosure 1: Response to NRC Request for Additional Information, RAI No. 9, Questions No. 02.01.01-1 and 02.01.01-2, SRP Section: 02.01.01 – Site Location and Description
- Enclosure 2: Proposed Revisions Part 2 – Site Safety Analysis Report (SSAR) Section 2.1 and Figure 1.2-3
- Enclosure 3: Summary of Regulatory Commitments

cc: USNRC Project Manager, Division of New Reactor Licensing, PSEG Site (w/enclosures)
USNRC, Environmental Project Manager, Division of Site and Environmental Reviews (w/enclosures)
USNRC Region I, Regional Administrator (w/enclosures)

ENCLOSURE 1

RESPONSE to RAI No. 9

QUESTIONS:

02.01.01-1

02.01.01-2

ND-2011-0011
March 21, 2011

In Reference 2, the NRC staff asked PSEG for information regarding Site Location and Description, as described in Section 2.1.1 of the Site Safety Analysis Report. The specific requests were:

Question 02.01.01-1

Based on the requirements under 10 CFR 52.17(a)(1) and the definitions under 10 CFR 100.3, NUREG-0800, SRP Section 2.1.1, Section I (Areas of Review), Item 1 calls for, among other things, specification of "the reactor location with respect to...the Universal Transverse Mercator (UTM) coordinate system", as found on U.S. Geological Survey (USGS) topographical maps. Subsection 2.1.1.2 (Paragraph 2) and Figure 1.2-3 of the Site Safety Analysis Report (SSAR) in the Early Site Permit Application for the PSEG Site identifies the following UTM coordinates for the center point (centroid) of the reactor containment centerlines for the various reactor technologies being considered for the new plant(s) as:

- N14335392.324
- E1488007.170

Based on the Latitude and Longitude coordinates also provided in Subsection 2.1.1.2 and on Figure 1.2-3, the UTM coordinates appear to be in feet. The Staff notes that hardcopy USGS 7.5-minute quadrangle topographical maps typically show UTM Northing and Easting coordinates in meters.

To avoid confusion, the Applicant should annotate the list of UTM coordinates in SSAR Subsection 2.1.1.2 (Paragraph 2) and in the marginal notes on SSAR Figure 1.2-3 with the correct units of measure. The Applicant should also confirm whether any other text, tables, or figures in the SSAR specify these UTM coordinates without indicating the corresponding units of measure and, if so, update accordingly.

PSEG Response to NRC RAI:

The Universal Transverse Mercator (UTM) coordinates described in Subsection 2.1.1.2 (Paragraph 2) and Figure 1.2-3 of the Site Safety Analysis Report (SSAR) have units of measure in feet. The remainder of the SSAR was searched and UTM coordinates are not presented in any other text, table or figure.

Associated PSEG Site ESP Application Revisions:

The SSAR text in Subsection 2.1.1.2 and Figure 1.2-3 will be annotated to note the units of measure. Enclosure 2 provides the markup of the proposed revision. SSAR Figure 1.2-3 is also used in Environmental Report (ER) Figure 3.1-2. The markup contained in Enclosure 2 will also be applied to ER Figure 3.1-2.

Question 02.01.01-2

Consistent with the definition for "exclusion area" at 10 CFR 100.3, the Staff's review under NUREG-0800, SRP Section 2.1.1, Subsection III (Review Procedures), Item 1 (Specification of Location) has, as one of its aims, establishing "the validity of the basic data" in regards to a proposed site's location. Subsection 2.1.1.2 (Paragraph 4) of the Site Safety Analysis Report (SSAR) in the Early Site Permit Application for the PSEG Site indicates that 288 acres of land within the Exclusion Area Boundary (EAB) are already under PSEG ownership and that an additional 85 acres of land within the EAB is planned to be acquired from the U.S. Army Corps of Engineers (USACE). Land parcels and other areas encompassed by the EAB for the proposed site include:

- *Property currently under PSEG ownership as part of the directly adjacent Hope Creek and/or Salem Generating Station site(s),*
- *Property planned to be acquired by PSEG from the USACE,*
- *Property that will remain under USACE ownership and possibly under their control depending on an agreement in principle being developed between PSEG and the USACE, and*
- *an area to the west in the Delaware River.*

It appears from SSAR Figure 1.2-3 that this additional 85 acres of land is bounded by the area labeled as "PSEG Proposed New Property Line". To make a distinction among these different areas within the EAB, the Applicant should confirm whether the 85-acre parcel of land is, in fact, bounded by the labeled area as indicated above. If so, clarify the associated text under SSAR Section 2.1 and/or Figure 1.2-3 accordingly. If not the case, update SSAR Section 2.1 and Figure 1.2-3 as necessary.

PSEG Response to NRC RAI:

The additional 85 acres immediately to the north of the existing site property is the area of land bounded by the area labeled as "PSEG Proposed New Property Line" on Figure 1.2-3.

Associated PSEG Site ESP Application Revisions:

The SSAR text in Subsection 2.1.1.1 and Figure 1.2-3 will be revised to clarify the 85 acres of land to be acquired from the USACE. Enclosure 2 provides the markup of the proposed revision. SSAR Figure 1.2-3 is also used in Environmental Report Figure 3.1-2. The markup contained in Enclosure 2 will also be applied to ER Figure 3.1-2.

PSEG Letter ND-2011-0011, dated March 21, 2011

**ENCLOSURE 2
Proposed Revisions
Part 2 – Site Safety Analysis Report (SSAR)**

**PSEG Site
ESP Application
Part 2, Site Safety Analysis Report**

Latitude and Longitude (NAD83)

39° 28' 23.744" North
75° 32' 24.332" West

Universal Transverse Mercator Coordinates (NAD83, Zone 18)

N14335392.324
E1488007.170

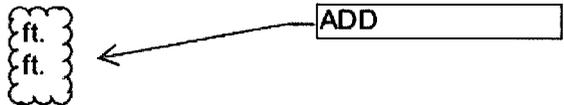


Figure 1.2-3 shows the new plant's proposed EAB, which is a circle at least 600 meters (1968 feet) from the edge of the power block area in all directions. A specific reactor design has not been selected, therefore Figure 1.2-3 does not show the location and orientation of principal plant structures for the new plant. It shows the boundaries of the power block area and theoretical plant center point within the power block area. The distance from these features to the site boundary and the proposed EAB can be scaled from Figure 1.2-3.

As shown in Figure 1.2-3, the proposed EAB extends beyond the PSEG Site property line to the west (into the Delaware River) and to the north and northeast. The total area encompassed by the EAB is 743 ac., of which 224 ac. is in the Delaware River and 288 ac. is in land currently owned by PSEG. An additional 85 ac. of land will be owned when PSEG completes property acquisition from the USACE as discussed in Subsection 2.1.1.1. The land within the EAB that will not be owned by PSEG consists of 146 ac. owned by the USACE. No public roads, railroads, or structures other than existing PSEG power plant facilities are located within any part of the EAB.

2.1.1.3 Boundaries for Establishing Effluent Release Limits

The land boundary, on which technical specification limits for release of gaseous radioactive effluents are based, is the PSEG Site property line shown in Figure 1.2-3. The distance from the new plant center point to the property line in any direction can be scaled from Figure 1.2-3. The minimum distance from the center point to the property line is 872 feet in the west direction.

2.1.2 EXCLUSION AREA AUTHORITY AND CONTROL

2.1.2.1 Authority

As discussed in Subsection 2.1.1.2, PSEG owns 288 ac. of the land within the proposed EAB for the new plant. PSEG has fee simple ownership, including mineral rights, of this land. In addition, PSEG is working with the USACE to develop an agreement in principle to acquire 85 ac. of land that will be within the proposed EAB. Therefore, when property acquisition is complete PSEG will have ownership of 373 ac. of land within the proposed EAB.

The only land area within the proposed EAB that will not be owned by PSEG is 146 ac. located to the north and northeast of the PSEG property line. This land is controlled by the USACE. PSEG will obtain legal authority from the USACE prior to the issuance of the COL that will either allow PSEG and its surrogates to control activities on this land or obtain an agreement with the USACE that provides assurances that the USACE will control activities and access if required. The agreement will specify that no residences are allowed within the Exclusion Area. Some

RAI No. 9
Question 02.01.01-1

2.1-2

Rev. 0

**PSEG Site
ESP Application
Part 2, Site Safety Analysis Report**

2.1 GEOGRAPHY AND DEMOGRAPHY

2.1.1 SITE LOCATION AND DESCRIPTION

2.1.1.1 Specification of Location

**INSERT
"as shown on
Figure 1.2-3."**

The new plant location is on the PSEG Site in [Township, Salem County, New Jersey (NJ)]. The PSEG Site consists of 734 acres (ac.) of property located on the southern part of Artificial Island on the east bank of the Delaware River. PSEG Power, LLC and PSEG Nuclear, LLC (PSEG) are developing an agreement in principle with the U.S. Army Corps of Engineers (USACE) to acquire an additional 85 ac. immediately to the north of the existing site property. Therefore, with the land acquisition, the PSEG Site will be 819 ac. The specific timing of land acquisition is not currently known and is subject to further PSEG and USACE actions. However, the agreement in principle with the USACE will serve to establish the basis for eventual land acquisition and Exclusion Area Boundary (EAB) control, necessary to support the issuance of a future combined license.

Artificial Island is connected to the mainland of NJ by a strip of tideland formed by hydraulic fill from dredging operations conducted by the USACE. The river area adjacent to the PSEG Site is in the Delaware River's Estuary Transition Zone. The site is situated within the Atlantic Coastal Plain Physiographic Province.

The PSEG Site is located 30 miles (mi.) southwest of Philadelphia, Pennsylvania, 15 mi. south of the Delaware Memorial Bridge, and 7-1/2 mi. southwest of Salem, New Jersey. The site location is shown on Figures 1.2-1 and 1.2-2, which identify major towns, roads, and other prominent features within 6 mi. and 50 mi., respectively, of the PSEG Site.

The nearest railroad to the PSEG Site, the Southern Railroad Company of New Jersey, is located 8.2 mi. to the northeast at its nearest point. The nearest highway, Delaware Route 9, is 3.1 mi. to the west, across the Delaware River from the PSEG Site. The nearest accessible highway, New Jersey Route 49, is 7.5 mi. to the northeast of the site. Land access to the site is limited to a road that PSEG constructed to connect its property with an existing secondary road 3.6 mi. to the east of the site. A new site access causeway is proposed to support construction and operation of the new plant.

2.1.1.2 Site Description and Site Map

The location selected for the new plant on the PSEG Site is north of the existing Hope Creek Generating Station (HCGS), as shown in Figure 1.2-3. The power block area, shown in Figure 1.2-3 bounds the area within which power block structures are located for each of the new reactor designs.

Figure 1.2-3 also shows the new plant center point, which is established by defining the locations of the reactor containment centerlines (or the mid-point between the containment centerlines of a dual unit plant) for the reactor technologies under consideration. The center point of the new plant is located at the centroid of these points. The coordinates of this center point are as follows:

RAI No. 9
Question 02.01.01-2

NOTES:

1. THE FOLLOWING ARE THE COORDINATES FOR NEW PLANT SITE CENTER:

NEW JERSEY STATE PLAN (NAD83)

NORTHING: 234,753.9883
EASTING: 198,529.2938

ft.
ft.

ADD

GEOGRAPHIC (NAD83)

LATITUDE: 39° 28' 23.7436"
LONGITUDE: 75° 32' 24.3316"

UNIVERSAL TRANSVERSE MERCATOR (NAD83 ZONE 18)

NORTHING: 14335392.324
EASTING: 1488007.170

ft.
ft.

ADD

U.S. NATIONAL GRID (NAD83)

USNG: 18SVJ5354569436

PLANT GRID COORDINATES

N3532.538'
W980.666'

UNIVERSAL TRANSVERSE MERCATOR AND U.S. NATIONAL GRID DERIVED UTILIZING USACE CORPSCON v6.0.1.

2. TEMPORARY CONSTRUCTION IMPACT DUE TO INSTALLATION OF TRANSMISSION TOWERS IN THIS AREA (APPROXIMATELY 5 ACRES).

3. AREAS DESIGNATED AS "TEMPORARY CONSTRUCTION AREA" WILL INCLUDE CONSTRUCTION SUPPORT FACILITIES INCLUDING PARKING, CONSTRUCTION OFFICES, CONSTRUCTION FABRICATION AND SERVICES FACILITIES, LAYDOWN, STORAGE AND OTHER FACILITIES / FEATURES NECESSARY FOR CONSTRUCTION OF THE PROPOSED FACILITY.

RAI No. 9
Question 02.01.01-1

DELA

HOPE CREEK SERVICE WATER INTAKE STRUCTUR

-G UNI
N10

LOW LEV WASTE B

LEGEND

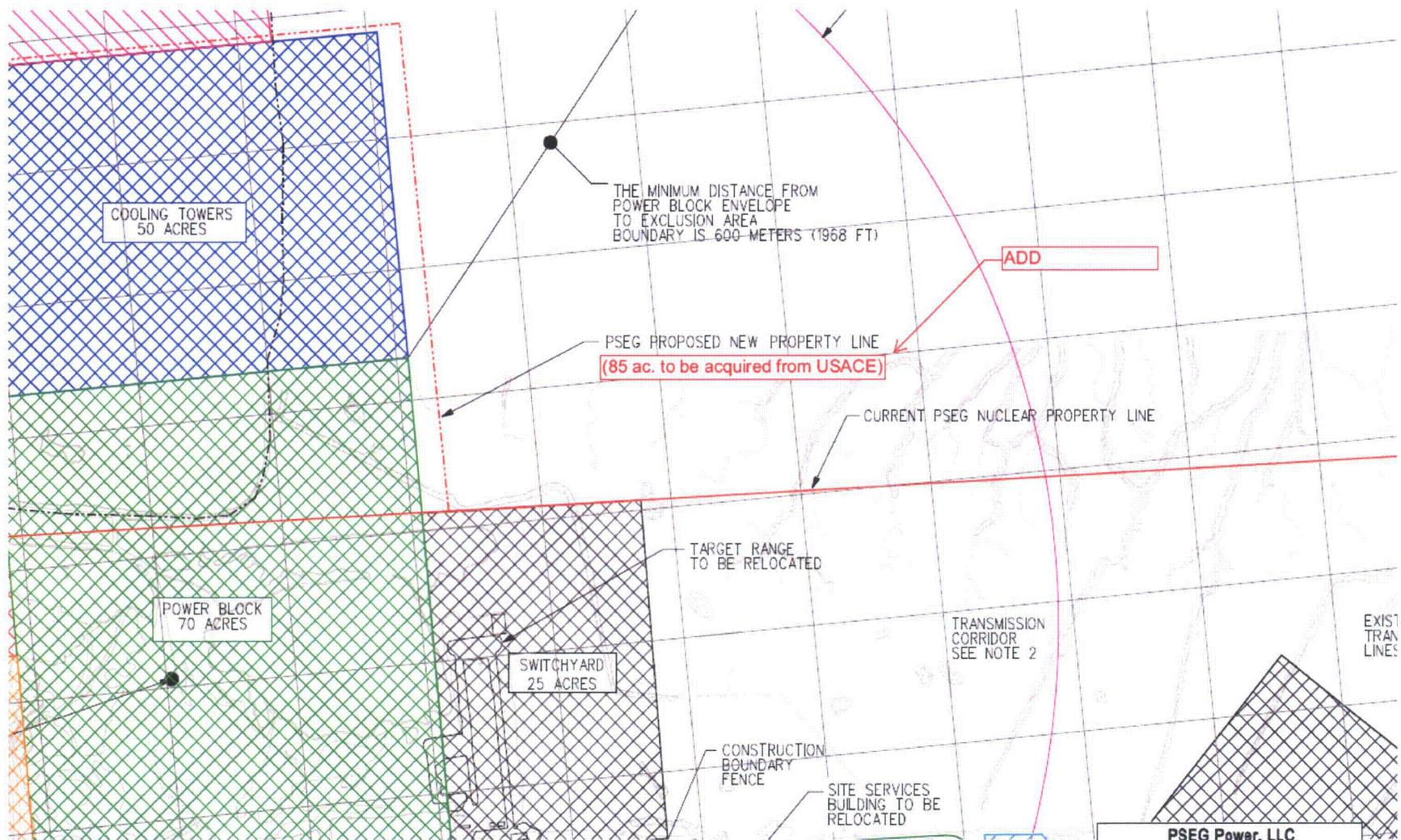


PERMANENT PLAN

PSEG Power, LLC
PSEG Site ESPA
Part 2, Safety Analysis Report

CONS

Site Utilization Plan
FIGURE 1.2-3 Rev.0



RAI No. 9
Question 02.01.01-2

PSEG Power, LLC
PSEG Site ESPA
Part 2, Safety Analysis Report

Site Utilization Plan
FIGURE 1.2-3 Rev.0

PSEG Letter ND-2011-0011, dated March 21, 2011

**ENCLOSURE 3
Summary of Regulatory Commitments**

ENCLOSURE 3

SUMMARY OF REGULATORY COMMITMENTS

The following table identifies commitments made in this document. (Any other actions discussed in the submittal represent intended or planned actions. They are described to the NRC for the NRC's information and are not regulatory commitments.)

| COMMITMENT | COMMITTED DATE | COMMITMENT TYPE | |
|--|--|--------------------------|-----------------------|
| | | ONE-TIME ACTION (Yes/No) | Programmatic (Yes/No) |
| PSEG will revise SSAR Section 2.1 and Figure 1.2-3 to incorporate the changes in Enclosure 2 in response to NRC RAI No. 9. | This revision will be included in the next update of the PSEG Site ESP application SSAR. | Yes | No |
| PSEG will revise ER Figure 3.1-2 to incorporate the changes in Enclosure 2 in response to NRC RAI No. 9. | This revision will be included in the next update of the PSEG Site ESP application ER. | Yes | No |