Nuclear Development
244 Chestnut Street, Salem, NJ 08079

PSEG
Power LLC

ND-2012-0017
March 13, 2012

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

Subject: **PSEG Early Site Permit Application**
Docket No. 52-043
Supplemental Response to Request for Additional Information, RAI No. 40, Aircraft Hazards

References: 1) PSEG Power, LLC letter to USNRC, Application for Early Site Permit for the PSEG Site, dated May 25, 2010

2) RAI No. 40, SRP Subsection: 03.05.01.06 – Aircraft Hazards, dated November 14, 2011 (eRAI 6145)

3) PSEG Power, LLC letter to USNRC, ND-2011-0067, PSEG Power, LLC, Response to Request for Additional Information, RAI No. 40, Aircraft Hazards, dated December 14, 2011

The purpose of this letter is to provide a supplemental response to Reference 2 for the transmittal of additional information. Reference 2 addresses the Aircraft Hazards, as described in Subsection 3.5.1.6 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 supplemental response for Item 2 of RAI No. 40, Question 03.05.01.06-1. Our response to Item 2 will require revision to the SSAR. Enclosure 2 provides the proposed revisions to the SSAR. The proposed revisions to SSAR Subsections 2.2.2.7.2 and 3.5.1.6.2 from the response to RAI No. 40 provided in Reference 3 are being revised by this supplemental response. Enclosure 3 provides a CD-ROM of revised SSAR Figure 2.2-2.

Enclosure 4 includes the new regulatory commitment established in this submittal.

D079
NRO

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 13th day of March, 2012.

Sincerely,

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

Enclosure 1: Response to NRC Request for Additional Information, RAI No. 40, Question No. 03.05.01.06-1, Item 2, SRP Subsection: 03.05.01.06 – Aircraft Hazards
Enclosure 2: Proposed Revisions Part 2 – Site Safety Analysis Report (SSAR) Subsections 2.2.2.7.2 and 3.5.1.6.2
Enclosure 3: Revised SSAR Figure 2.2-2
Enclosure 4: 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)

PSEG Letter ND-2012-0017, dated March 13, 2012

ENCLOSURE 1

RESPONSE to RAI No. 40

QUESTION No. 03.05.01.06-1, Item 2

Response to RAI No. 40, Question 03.05.01.06-1, Item 2:

In Reference 2, the NRC staff asked PSEG for information regarding Aircraft Hazards, as described in Subsection 3.5.1.6 of the Site Safety Analysis Report. The specific requests were:

RG 1.206 and NUREG-0800 provide guidance regarding the information that is needed to ensure potential hazards in the site vicinity are identified and evaluated to meet the siting criteria in 10 CFR 100.20 and 10 CFR 100.21. The staff identified low-level military training routes (MTRs) SR800, SR805, SR844, SR845, SR846, and SR847 near the PSEG site, which are not addressed in the SSAR Section 2.2.2.7.2 and Section 3.5.1.6.

2. *Discuss whether there would be any change in the calculation of the aircraft crash probability determinations.*

PSEG Response to NRC RAI:

A review of the Department of Defense (DOD) Area Planning AP/1B Chart, Military Training Routes – Eastern US, identified six low-level military training routes (MTRs) near the PSEG site (MTRs SR800, SR805, SR844, SR845, SR846, and SR847). Using this chart and the DOD AP/1B document obtained from the Delaware Air National Guard (DANG), the distance from the PSEG site to the nearest edge of these MTRs was determined. The nearest edge of the six low-level MTRs, are located within five statute miles of the PSEG site (See Table RAI-40-2-1).

Table RAI-40-2-1
Distance from Nearest Edge of Low-Level Military Training Routes to the PSEG Site

Low-Level Military Training Routes	Distance from Plant Edge to Nearest Edge of Low-Level Military Training Route (mi.)
SR800	4.10
SR805	2.25
SR844	1.82
SR845	0.04
SR846	1.82
SR847	0.00

Since all of these low-level MTRs are within five statute miles of the PSEG site, they must be included in the aircraft crash probability evaluation.

All of these low-level MTRs are controlled for training by the Delaware Air National Guard (DANG). The DANG flies only large military aircraft on these MTRs. Table RAI-40-2-2 provides the total number of flights per year on each of these routes. This flight traffic information was provided by the DANG.

Table RAI-40-2-2
Flight Traffic per Year on the Low-Level Military Training Routes near the PSEG Site

Low-Level Military Training Routes	Flights per Year
SR800	48
SR805[(a)]	48
SR844[(b)]	0
SR845[(b)]	0
SR846[(a)]	48
SR847	144

Notes:

a) The traffic on MTRs SR805 and SR846 is eight flights per month. The DANG alternates the use of these routes. During the six months including the summer, MTR SR805 is used and during the six months including the winter, MTR SR846 is used. For the aircraft crash probability evaluation it was assumed that all 96 flights per year are on MTR SR846 since this MTR is closer to the PSEG site than MTR SR805.

b) This MTR is not used.

Since MTRs SR844 and SR845 are not used, these MTRs are excluded from the aircraft crash probability evaluation. As stated in footnote a) of Table RAI-40-2-2, all flights on MTRs SR805 and SR846 are conservatively considered to be on MTR SR846. Thus, the aircraft crash probability evaluation is limited to MTRs SR800, SR846, and SR847.

The results of adding these MTRs to the aircraft crash probability evaluation are provided in Table RAI-40-2-3. Since only large military aircraft are flown on these MTRs, the addition of these MTRs only affects the large aircraft crash probability provided in SSAR Table 3.5-5. The large aircraft crash probability remains below the 1E-07 per year acceptance criteria.

Table RAI-40-2-3
Probability per Year of a Large Aircraft Crash for Each Reactor Technology

Reactor Technology	Aircraft Crash Probability per Year
AP1000	3.12E-08
ABWR	5.85E-08
US-APWR	6.65E-08
U.S. EPR	9.36E-08

Associated PSEG Site ESP Application Revisions:

SSAR Subsections 2.2.2.7.2 and 3.5.1.6.2 and Table 3.5-5 and Figure 2.2-2 will be updated and new Tables 3.5-6 and 3.5-7 will be added as specified in Enclosure 2 of this document. Revised SSAR Figure 2.2-2 is provided in Enclosure 3

PSEG Letter ND-2012-0017, dated March 13, 2012

ENCLOSURE 2

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

Subsection 2.2.2.7.2 Airways
Subsection 3.5.1.6.2 Military Airports and Routes

Marked Up Pages
2.2-6
3.5-1
3.5-9
New Table 3.5-7
New Table 3.5-8

The helipad is owned by PSEG and is located on the PSEG Site, 3848 feet southeast of the new plant power block area. Helipad operations are sporadic and are limited primarily to medical emergencies and corporate management use. Permission from PSEG is required to land at the helipad.

Table 2.2-11 shows the number of operations at several private airports, helipads, and heliports within the vicinity of the PSEG Site. All facilities within 10 mi. are included, and public airports with operations greater than 25,000 per year are included within 35 mi. The nearest public airport is the Summit Airport, which is located 10.4 mi. from the new plant power block area. The airport has a 4488 ft. north-south oriented asphalt runway, and a 3601 ft. turf runway. Operations involve primarily single-engine light aircraft (Reference 2.2-26).

There are no airports within 10 mi. of the PSEG Site that have active plans for expansion. The Summit Airport, which is 10.4 mi. away, plans to add a 39,000 square foot hangar and 80,000 square feet of warehouse space.

An evaluation of hazards associated with identified airports is presented in Subsection 3.5.1.6.

2.2.2.7.2 Airways

There are four federal airways within 10 mi. of the PSEG Site: V123-312, V29, V157, and V213 (Reference 2.2-12). There are also two high altitude routes J42-150 and J191 (Reference 2.2-14). ~~The closest military training route is VR1709, located 36.7 mi. east of the PSEG Site.~~

The centerline of Airway V123-312 is located 0.5 mi. northwest of the site. Additionally, Airway V29 is 1.1 mi. west of the site, Airway V157 is 7.1 mi. east of the site, and Airway V213 is 9.4 mi. southeast of the site. The centerline of jet way J42-150 is 0.8 mi. east of the site, with an additional jet way J191, located 9.7 mi. east of the site. The width of a federal airway is typically 8 nautical mi., 4 nautical mi. on each side of the centerline. When airway width is considered, airways passing closer than 2 statute mi. to the nearest edge of the PSEG site are evaluated along with air traffic hazards in Subsection 3.5.1.6.

2.2.2.8 Military

There are no military facilities within 10 mi. of the PSEG Site. New Castle County Airport is the closest facility with military operations (Air National Guard), and it is located 14.5 mi. northeast of the site. The closest dedicated military facility is Dover Air Force Base, which is located 23.8 mi. south of the site. The operations at Dover Air Force Base are 100 percent military, and the numbers are identified in Table 2.2-11 (Reference 2.2-11).

2.2.2.9 Projections of Industrial Growth

No industrial growth projections are available for Salem County. However, the Salem County Utiliti... nic
deve... busin... y. The
proje...

The closest military routes are 6 slow speed low-altitude military training routes as indicated on Figure 2.2-2 (SR800, SR805, SR844, SR845, SR846, and SR847). The nearest edges of these military training routes are located within five statute miles of the PSEG Site.

CHAPTER 3

DESIGN OF STRUCTURES, COMPONENTS, EQUIPMENT, AND SYSTEMS

3.5.1.6 Aircraft Hazards

Airports and airways near the PSEG Site are discussed in Subsection 2.2.2 and shown in Figure 2.2-2. Aircraft hazards related to these airports and airways are evaluated in this section in accordance with NUREG-0800, *Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plant: LWR Edition*, to show that the hazards do not meet the NUREG-0800 Section 3.5.1.6 criteria and are not incorporated into the plant design basis.

3.5.1.6.1 Airports

Plant-to-airport distance (D) is evaluated for each airport or helipad against its projected annual number of operations for distances between five and ten statute miles and distances greater than ten statute miles to determine whether the hazard probability requires further evaluation.

There are eight airports and helipads within five to ten miles of the new plant. Additionally, the Salem/Hope Creek helipad is located within five miles of the new plant and exists for corporate and emergency use. These facilities are listed in Table 2.2-11. The annual number of operations for each of these is described as sporadic. Due to the infrequent nature of these operations, these facilities do not present a safety hazard to the PSEG Site. There are no airports within five miles of the PSEG Site.

REPLACE WITH: "The closest military training routes (MTRs) are six slow speed low-altitude MTRs (SR800, SR805, SR844, SR845, SR846, and SR847). These MTRs are used by the Delaware Air National Guard (DANG). The nearest edge of these MTRs is located within approximately five statute miles of the PSEG Site (see Table 3.5-7). The annual traffic for these six MTRs is provided by the DANG and shown in Table 3.5-8. Military"

3.5.1.6.2 Military Airports and Routes

New Castle County Airport is the closest facility with military operations (Air National Guard), and it is located 14.5 mi. northeast of the site. The closest dedicated military facility is Dover Air Force Base, located 23.8 miles from the site. The method of calculating hazard probabilities of these facilities are discussed in Subsection 3.5.1.6.1.

ADD: "is"

~~The closest military~~ training route ~~is~~ VR1709 ~~is~~located 37 miles from the plant. The flight data for this route is not available from the Federal Aviation Administration (FAA) to verify that the number of flights does not exceed 1000 per year. However, the distance from the PSEG Site to the nearest edge of any military base and ~~route~~ significantly exceeds the five statute miles stated in the NUREG-0800, Section 3.5.1.6, acceptance criteria. Therefore military flight operations on VR1709 do not present a safety hazard to the PSEG Site.

REPLACE WITH: "MTR VR1709"

Table 3.5-5
Probability per Year of an Aircraft Crash for Each Reactor Technology

AP1000[a]		ABWR		US-APWR		U.S. EPR	
Small Aircraft	Large Aircraft	Small Aircraft	Large Aircraft	Small Aircraft	Large Aircraft	Small Aircraft	Large Aircraft
4.74E-06	3.09E-08	7.33E-06	5.82E-08	1.01E-05	6.60E-08	1.17E-05	8.35E-08

a) For AP1000, calculated probability is for a single unit. PSEG is considering construction of dual units for this reactor technology at the PSEG Site.

ADD the following table to the end of SSAR Subsection 3.5.1.6:

Table 3.5-7
Five-Mile Screening of Low-Level Military Training Routes from PSEG Site

Low-Level Military Training Route (MTR)	Distance from MTR Centerline to PSEG Site Center (mi.)	Distance from MTR Centerline to PSEG Site Edge (mi.)	Distance from MTR Edge to MTR Centerline (mi.)	Distance from Edge of MTR to Site Edge (mi.)
SR800	7.75	7.55	3.45	4.10
SR805	5.90	5.70	3.45	2.25
SR844	6.62	6.42	4.6	1.82
SR845	4.84	4.64	4.6	0.04
SR846	6.62	6.42	4.6	1.82
SR847	5.27	5.07	5.75	(a)

Notes:

a) PSEG site is within the airway width.

ADD the following table to the end of SSAR Subsection 3.5.1.6 (after new Table 3.5-7):

Table 3.5-8
Flight Traffic per Year on the Low-Level Military Training Routes near the PSEG Site

Low-Level Military Training Routes	Flights per Year
SR800	48
SR805[a]	48
SR844[b]	0
SR845[b]	0
SR846[a]	48
SR847	144

Notes:

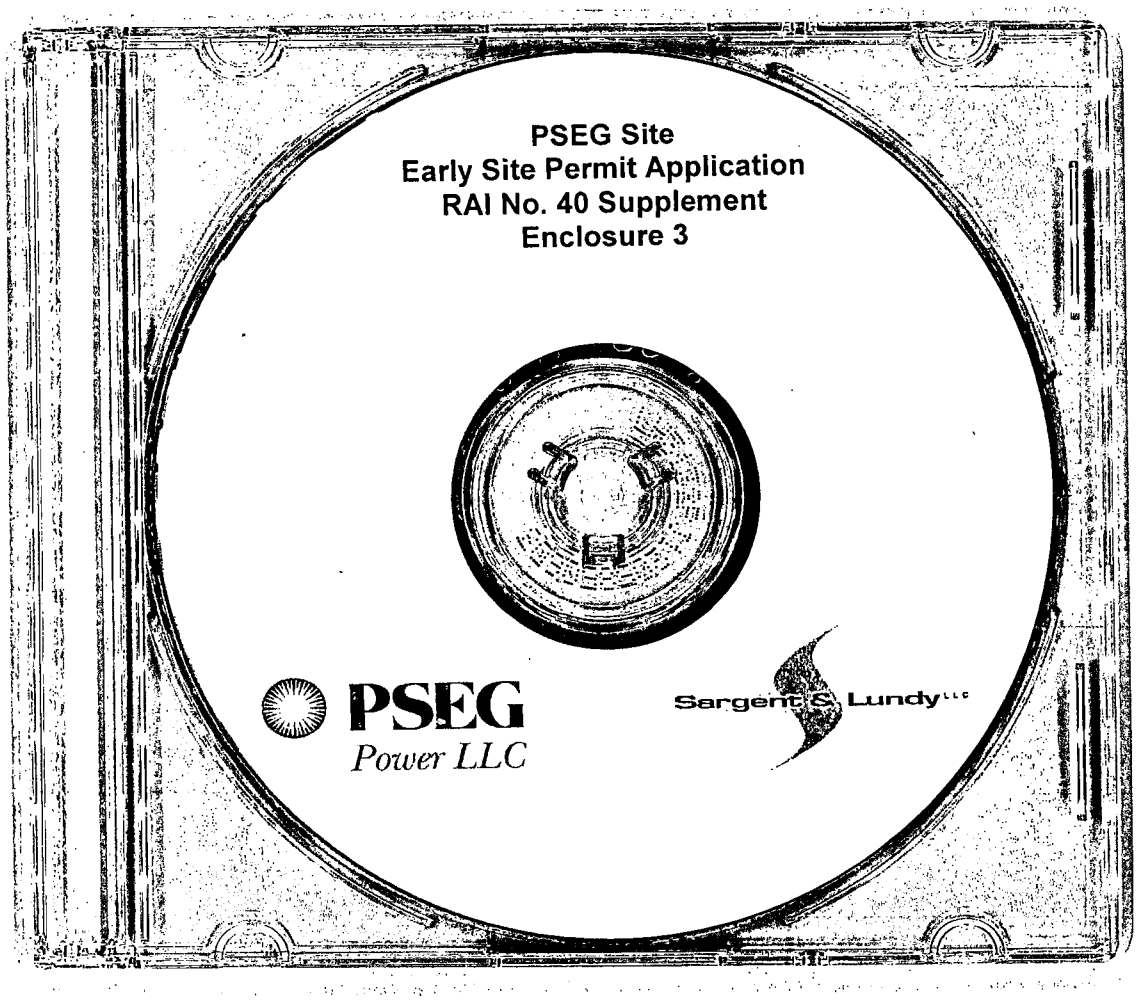
a) The traffic on MTRs SR805 and SR846 is 8 flights per month. The DANG alternates the use of these routes. During the six months including the summer, MTR SR805 is used and during the six months including the winter, MTR SR846 is used. For the aircraft crash probability evaluation it was assumed that all 96 flights per year are on MTR SR846 since this MTR is closer to the PSEG site than MTR SR805.

b) This MTR is not used.

PSEG Letter ND-2012-0017, dated March 13, 2012

ENCLOSURE 3

CD-ROM Containing Revised SSAR Figure 2.2-2


PSEG Site
Early Site Permit Application
RAI No. 40 Supplement
Enclosure 3
PSEG
Power LLC
Sargent & Lundy LLC

PSEG Letter ND-2012-0017, dated March 12, 2012

ENCLOSURE 4

Summary of Regulatory Commitments

ENCLOSURE 4

SUMMARY OF REGULATORY COMMITMENTS

The following table identifies the commitment 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 Subsections 2.2.2.7.2 and 3.5.1.6.2, Table 3.5-5 and Figure 2.2-2 and add new Tables 3.5-6 and 3.5-7 to incorporate the changes in Enclosures 2 and 3 in response to the supplement to the response to NRC RAI No. 40.	This revision will be included in the next update of the PSEG Site ESP application SSAR.	Yes	No