Nuclear Development
244 Chestnut Street, Salem, NJ 08079

PSEG
Power LLC

ND-2012-0049
September 26, 2012

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-01, EIS – General RAIs

References: 1) PSEG Power, LLC Letter No. ND-2012-0031 to USNRC, Submittal of Revision 1 of the Early Site Permit Application for the PSEG Site, dated May 21, 2012

2) Env-01, Review Section: EIS – General RAIs, dated August 28, 2012 (eRAI 6728)

The purpose of this letter is to respond to the request for additional information (RAI) identified in Reference 2 above. This RAI addresses Question Nos. EIS General RAIs-1 through EIS General RAIs-4 for the Environmental Report (ER), as submitted in Part 3 of the PSEG Site Early Site Permit Application, Revision 1.

Enclosure 1 provides our response for RAI No. Env-01, Question Nos. EIS General RAIs-1 through EIS General RAIs-4 (rGEN-01, rGEN-04, rGEN-05, rGEN-08, and rGEN-09). Enclosure 2 includes the revisions to the ER resulting from our response to RAI No. Env-01, Question No. EIS General RAIs-1 (rGEN-01). Enclosure 3 provides a CD-ROM containing electronic files requested in RAI Env-01.

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

D079
NRO

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 26th day of September, 2012.

Sincerely,

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

Enclosure 1: Response to NRC Request for Additional Information, RAI No. Env-01, Question Nos. rGEN-01, rGEN-04, rGEN-05, rGEN-08, and rGEN-09, Review Section: EIS – General RAIs
Enclosure 2: Proposed Revisions, Part 3 – Environmental Report (ER), Subsection 1.1.1 – Purpose and Need
Enclosure 3: CD-ROM containing electronic files requested in RAI Env-01

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)
Oak Ridge National Laboratory, Team Lead

PSEG Letter ND-2012-0049, dated September 26 2012

ENCLOSURE 1

RESPONSE to RAI No. Env-01

QUESTION Nos.
EIS General RAIs-1 (rGEN-01)
EIS General RAIs-2 (rGEN-04 and rGEN-05)
EIS General RAIs-3 (rGEN-08)
EIS General RAIs-4 (rGEN-09)

Response to RAI No. Env-01, Question EIS General RAIs-1:

In Reference 2, the NRC staff asked PSEG for information regarding the Purpose and Need for the project in Introduction, as described in Subsection 1.1.1 of the Environmental Report. The specific request was:

> *rGEN-01: Provide a concise statement of the purpose and need for the proposed action based on current power supply and demand data for the relevant service area.*
>
> *Supporting Information: Under 10 CFR 51, Appendix A (4), an environmental impact statement (EIS) must "briefly describe and specify the need for the proposed action." The text in ER Section 1.1.1 (Purpose and Need) should be updated (existing text refers to 2009 data) to reflect the purpose and need for the proposed action based on current information on the power supply and demand in the relevant service area.*

PSEG Response to NRC RAI:

The Purpose and Need for the proposed project, as described in the current Environmental Report (ER) for the PSEG site, is based on an analysis that determined the need for additional baseload capacity within the Relevant Service Area (RSA) of New Jersey (NJ) was 7900 megawatts electric (MWe) by the year 2021 – the expected commercial operating date for the new plant. This analysis was based on load forecast data developed in 2009 by the regional transmission operator, PJM.

In the time since the original analysis was performed, the economy and subsequent load growth within NJ has been suppressed due to the 2008-2009 economic recession and its associated prolonged recovery. Despite this suppression of load growth, the 2021 need for additional baseload capacity in NJ, based on the most recent 2012 PJM load forecast, is projected to be in excess of 7300 MWe. Given that the expected need for baseload power in NJ is still substantial despite the effects of the recession on load growth, the conclusions reached by the initial need for power analysis that serve as the documented basis for the purpose and need of this project are still valid and applicable to NJ's energy landscape.

Therefore, the purpose and need for the proposed action is to preserve the option of constructing a nuclear power plant at the PSEG site to provide up to 2200 MWe of baseload power to the RSA of New Jersey. This additional baseload capacity is intended to help meet NJ's projected 2021 shortfall in baseload capacity of greater than 7300 MWe.

Associated PSEG Site ESP Application Revisions:

ER Subsection 1.1.1 will be updated as specified in Enclosure 2 of this document.

Response to RAI No. Env-01, Question EIS General RAIs-2:

In Reference 2, the NRC staff asked PSEG for information regarding general information to support EIS development. The specific request was:

> *rGEN-04 and rGEN-05: Provide a description of the preconstruction and construction activities that would occur at the proposed site. Include the types, sequence, and durations of activities that would occur during preconstruction and construction. In particular, describe the activities associated with site preparation, power block construction, transmission line construction, causeway construction, and all other preconstruction and construction activities.*
>
> *Supporting Information: Under 10 CFR 51.45(c), an "environmental report prepared at the early site permit stage under § 51.50(b) . . . must include a description of impacts of the preconstruction activities performed by the applicant at the proposed site (i.e., those activities listed in paragraph (1)(ii) in the definition of "construction" contained in § 51.4), necessary to support the construction and operation of the facility which is the subject of the early site permit . ."*
>
> *Only some of the activities associated with building a nuclear power plant are part of the NRC action to license the plant. Activities for which an NRC license is required are defined as "construction" in 10 CFR 50.10(a) and 10 CFR 51.4. Activities associated with building a plant that are not licensed by the NRC as part of the proposed action are grouped under the term "preconstruction." The ER should distinguish between the two categories of activities and should provide details to differentiate the environmental impacts between the two, as well as their cumulative impacts. Interim NRC staff guidance concerning this evaluation is available on the NRC public web site in COL/ESP-ISG-4, at http://www.nrc.gov/reading-rm/doc-collections/isg/col-esp-isg-4.pdf*

PSEG Response to NRC RAI:

For the purpose of analysis, PSEG assumed a construction schedule based on the two unit AP1000 reactor technology with a targeted commercial operating date of 2021 for the first unit and 2022 for the subsequent unit. The description of site preparation and construction activities in this section assumes that construction on the PSEG Site would begin following the site preparation for the first unit and that construction of the second unit would begin 12 months later.

Given that a reactor technology or constructor have yet to be selected by PSEG, the following response characterizes the major activities to support construction of the principal structures of the plant and to provide the requisite background for the assessment of environmental impacts. The response does not, however, represent a discussion of every potential construction activity or a detailed engineering plan for the project.

PSEG has not yet selected a specific reactor technology for the site, therefore; technical information from the four reactor designs covered by the ESP's plant parameter

envelope (PPE) is used to develop bounding parameters on which the assessment is based. These bounding parameters envelope the characteristics of the proposed facility in order to evaluate the suitability of the site for future construction and operation of a nuclear power plant. Therefore, the construction details provided and the areas depicted on the site utilization drawing (ER Figure 3.1-2) are bounding to ensure the entirety of impacts are considered.

Site preparation includes installation of temporary facilities (e.g., storage warehouses, concrete batch plant), relocation of facilities within the PSEG site, staging equipment, and preparation activities to support power plant construction. ER Figure 3.1-2 depicts the site utilization plan, along with plant access roads, heavy haul road, and other construction planning features.

Schedule for Construction for PSEG site

Pre-Construction Work			
	START	FINISH	DURATION
Clearing, Grubbing, Grading	2Q 2015	3Q 2015	3 months
Access Road / Causeway Construction	2Q 2015	2Q 2017	24 months
Implement Environmental Management System	2Q 2015	2Q 2017	24 months
Construct Interposing Switchyard (Evaluate for construction power)	2Q 2015	3Q 2016	13 months
Upgrade area roads and bridges	2Q 2015	4Q 2016	18 months
Install Construction Security Infrastructure	2Q 2015	3Q 2015	3 months
Install Temporary Utilities	2Q 2015	2Q 2017	24 months
Install Temporary Construction Facilities	2Q 2015	4Q 2016	18 months
Construct New Barge Facility	2Q 2015	3Q 2016	13 months
Install Cofferdam for New Intake	2Q 2015	4Q 2015	5 months
Construct Heavy Haul Road	1Q 2017	2Q 2017	4 months
Excavate to Kirkwood Formation (both units)	3Q 2015	4Q 2016	15 months
PSEG Site Unit 1 Construction			
Excavate to Vincentown Formation (both units)	4Q 2016	1Q 2017	4 months
Backfill/First concrete	1Q 2017	2Q 2017	4 months
Site construction	2Q 2017	2Q 2021	48 months
Fuel load	2Q 2021	4Q 2021	6 months
Commercial operation	4Q 2021		
PSEG Site Unit 2 Construction			
Backfill/First concrete	1Q 2018	2Q 2018	4 months
Site construction	2Q 2018	2 Q 2022	48 months
Fuel load	2Q 2022	4Q 2022	6 months
Commercial operation	4Q 2022		

Clearing, Grubbing, and Grading

Clearing and grubbing of the site would begin with the removal of vegetation. The site grade would be made uniform to ensure access to all areas of the construction site. The cross-hatched areas depicted on the site utilization plan (ER Figure 3.1-2) illustrate the areas to be cleared, grubbed and graded. No vegetation would be disposed of by burning.

Erosion Control Measures

Erosion control measures, such as silt fences, would be installed around the various work areas to prevent surface water and sediment runoff. Best management practices, including establishment of a stormwater management plan, would be implemented to control and contain surface runoff.

Road Construction

To support PSEG site construction, access to the construction area of the PSEG site will be via a proposed causeway from Money Island Road to the site. This new access road is conceptually designed as a three-lane causeway to be constructed on elevated structures for its entire length. Causeway construction would start 24 months prior to plant construction to support access to the construction site. Causeway construction would primarily consist of driving piles from a top down or parallel temporary structure with pre-fabricated roadway spans set in place between pile clusters. A majority of the causeway structure would be comprised of pre-fabricated elevated sections set in place from an elevated crane to minimize impacts along the causeway route.

A heavy haul road would be built on site to support the transport of heavy modules and components from the existing Hope Creek barge facility as well as a new parallel barge facility along the length of the river front west of the site. Temporary construction parking lots would be created on PSEG property in areas near the construction site. Construction laydown and fabrication areas would be cleared, grubbed, graded, and graveled or paved with a road system to accommodate the site construction traffic.

Excavation

The power block consists of an area encompassing the nuclear island and turbine island areas, which include the following buildings for each unit:

- reactor building, including concrete containment vessel;
- power source buildings;
- Ultimate Heat Sink (UHS) - related structures;
- auxiliary building;
- access building; and
- turbine building.

The PPE defines bounding parameters for the four reactor technologies under consideration for the PSEG Site (SSAR Section 1.3, Table 1.3-1). A general layout for the limits of the excavation for the new plant location was developed (SSAR Figure

2.5.4.5-1). The general layout identifies a power block area within which all Seismic Category I structures for any of the four technologies are located, excluding the outlying Category-1 river intake structure (if required by the specific technology). As shown in SSAR Figure 2.5.4.5-2, structural support for excavation will be installed at the lateral limits of the excavation for the entire power block. Structural support for excavation may consist of cellular cofferdams, sheet pile/tie-back walls or other methods that will be specified in the COLA. This excavation will be to a depth of approximately 50 feet below site grade to the Kirkwood formation layer and will be performed as part of pre-construction activities. Subsequent excavation under safety related (Seismic Category 1) structures, to the Vincentown formation foundation level (approx. 70 feet below site grade), will implement a second set of structural supports. This excavation for safety related structures will be formally considered "construction" from a regulatory perspective. Approximately 5 million cu yds of soil will be excavated during both pre-construction and construction of the two unit plant. Material that cannot be reused in the excavation will be retained on site. Efforts will be taken to achieve beneficial reuse of the excavated material.

Reactor Building Basemat Foundation

After the subsurface preparations are completed and the subgrade geologically mapped, the foundations will be installed. The reactor building basemat will be the first to be installed since it is the deepest structure. The detailed steps include:

- placement of backfill
- installing the grounding grid;
- forming the mud-mat concrete work surface; and
- reinforcing steel and civil, electrical, mechanical/piping embedded items (basemat module) and forming, concrete placement and curing.

Backfill

Earthwork for the proposed construction involves the removal of unsuitable materials (soils), both in the overall power block area and below the Seismic Category I structures, and replacement with suitable backfill materials. Two categories of backfill are used – Category-1 and Category-2. Category-1 backfill materials will be placed below the basemat bearing grades of the Category I structures and adjacent to the below-grade walls of the Category I structures. Category 2 backfill will extend laterally beyond the Category 1 backfill areas out to the lateral limits of the power block area. The lateral and vertical extent of the excavation for the Category I structures within the approximately 70-acre power block area will depend on the plant technology chosen.

Construction Security Infrastructure

Structures and equipment needed to establish and maintain construction site security will include access control points, fencing, lighting, physical barriers, and guardhouses. Construction-level security features will be installed during the early part of site preparation activities.

Temporary Utilities

Temporary utilities will include aboveground and underground infrastructure for power, communications, potable water, wastewater and waste treatment facilities, fire protection, and construction gas and air systems. The temporary utilities will support the entire construction site and associated activities, including construction offices, warehouses, storage and laydown areas, fabrication and maintenance shops, the power block, the batch plant facility, measuring and testing equipment, and the intake and discharge areas. The materials brought on site for temporary utilities may include, but are not limited to, wood products for utility poles, concrete forms and crating, electrical cable to route temporary power, outdoor lighting fixtures (other than security), temporary piping for potable and sanitary water facilities and to the concrete batch plant, paint and spray cans for various construction and housekeeping services, plastics from containers and protective coverings.

Temporary Construction Facilities

Temporary construction facilities, including offices, warehouses for receiving and storage, temporary workshops, toilets, training facilities, and personnel access facilities, will be built. The site of the concrete batch plant will be prepared for aggregate unloading and storage, and the cement storage silos and concrete batch plant would be erected.

Laydown, Fabrication, and Shop Area Preparation

Activities to support preparation of the laydown, fabrication, and shop areas include:

- performing a construction survey to establish local coordinates and benchmarks for horizontal and vertical control;
- grading, stabilizing, and preparing the laydown areas;
- installing construction fencing;
- installing shop and fabrication areas, including the concrete slabs for formwork laydown, module assembly, equipment parking and maintenance, fuel and lubricant storage, and rigging loft; and
- installing concrete pads for cranes and crane assembly.

Intake/Discharge Installation

Installation of a raw water intake structure for the two unit plant is planned west of the new power block structures on the shoreline of the Delaware River. To minimize impingement mortality and entrainment of fish and shellfish, the intake structure bay sizes and intake screens will be designed such that the average intake flow velocity through the screens is less than 0.5 feet per second (fps), as required by the Clean Water Act, Section 316(b). A new blowdown pipeline will discharge wastewater to the Delaware River approximately 1000 ft north of the intake structure.

Power Block Construction

The power block consists of the reactor building, the turbine building, and smaller, but essential facilities. The reactor building, which includes the reactor vessel, is an integrated steel and concrete structure. The major activities associated with the reactor building construction following the basemat foundation placement include:

- erecting the reactor concrete containment vessel shell;
- placing walls, slabs, and reactor pedestal;
- installing the reactor vessel, pool modules, and primary loop components; and
- setting the upper reactor building roof structure.

The mechanical, piping, heating, ventilation and air conditioning (HVAC) systems, and electrical installations will begin in the lower elevations and would continue to the upper elevations. The reactor building has the longest construction duration. The turbine building is a concrete and steel structure. The turbine building construction will begin with the pedestal basement and buried circulating water piping installation. Installation of the pedestal columns, condenser modules, and pedestal deck will follow. The building exterior to the turbine pedestal will be erected; the turbine building crane and the exterior walls and roof will then be installed. The mechanical, piping, HVAC, and electrical installations will begin in the lower elevations and continue to the upper elevations. The turbine and generator will be assembled inside the building. Support facilities to be constructed within the power block include:

- the circulating water intake and discharge structures;
- safety-related piping and electrical tunnels;
- the UHS structure;
- basin and pump houses;
- machine shop;
- fire protection pump house;
- makeup water treatment building;
- various yard tanks; and
- laboratories for radiological and chemical analyses to support plant operations.

Transmission Lines

PSEG has identified two off-site transmission corridor alternatives that may be considered in future transmission routing studies in the event a new transmission line is necessary to accommodate grid stability requirements (ER Subsection 9.4.3). A specific corridor has not yet been selected, as this is dependent on a variety of factors including the selection of a reactor technology, formal transmission impact studies, and regional transmission planning efforts. If new transmission is required, existing transmission right-of-ways (ROWs) will be used to the extent practical to accommodate the new transmission line. Transmission line towers would be spaced in accordance with accepted industry standards. Most of the ground disturbance will be associated with building the towers and constructing the access roads to reach the tower locations. Transmission tower construction techniques will consist of piling/excavation for foundations to support transmission towers, and utilizing appropriate backfill (if required) to achieve proper support. If a new transmission line is determined to be required and once transmission routing studies and designs are completed for the line, it is expected that land use impacts will be reduced based upon the lines final routing and spacing and sizing of transmission tower foundations.

The installation of electrical conductor wires will be performed using the tension method, as per Institute of Electrical and Electronics Engineers (IEEE) standards. The tension method of stringing transmission lines involves threading a light pilot pulling line through the travelers. The pilot line pulls a heavy pulling line through the travelers. Then, the pulling line is used to pull the conductor through the travelers. Once in place, the conductors are tensioned and fixed in place to achieve required ground clearance at the lowest portion of the span.

Associated PSEG Site ESP Application Revisions:

None.

Response to RAI No. Env-01, Question EIS General RAIs-3:

In Reference 2, the NRC staff asked PSEG for information regarding general information to support EIS development. The specific request was:

> *rGEN-08: Provide representative ground-level photographs of the site on which major proposed station features (including all power block structures, the off-site transmission lines, and the causeway) are superimposed. Because the final project design has not been selected, the proposed station features could be represented by appropriately altered photographs of facilities at SGS or HCGS. These photos should be taken from the typical vantage points listed in ESRP 3.1, as well as from the residential areas of Bay View Beach, Delaware, and Hancock's Bridge, New Jersey; the transportation corridors of Lower Alloways Creek Township Road and Money Island Road; and recreational areas of the Delaware River and Abbot Meadows. Any other sensitive vantage points identified by the applicant should also be included. The photos should be provided as electronic JPEG files suitable for inclusion in the EIS on 8.5" x 11" pages.*
>
> *Supporting Information: Under ESRP 3.1, the following data or information should be obtained:*
>
> *"representative ground-level photographs of the site on which major proposed station features are superimposed. These should be taken from among the following typical vantage points when a visual impact from that location can be expected (from the ER):*
>
> *1. residential*
> *2. commercial*
> *3. industrial*
> *4. educational*
> *5. transportation corridors (air, auto, rail, pedestrian)*
> *6. cultural (recreational, historic, archaeological).*
> *During the Environmental Site Audit, the applicant showed two photographs of the site on which (1) some power block structures and (2) the causeway had been superimposed. Neither of these photographs, nor any of the type specified in ESRP 3.1, was included in the ER.*

PSEG Response to NRC RAI:

The requested photographs are provided in Enclosure 3.

Note that the educational (Elsinboro School) and industrial (Delaware City Refinery) facilities, with local proximity to the PSEG Site provided no viable sightlines to proposed plant structures. Therefore, renderings from these vantage points are not feasible.

Associated PSEG Site ESP Application Revisions:

None.

Response to RAI No. Env-01, Question EIS General RAIs-4:

In Reference 2, the NRC staff asked PSEG for information regarding general information to support EIS development. The specific request was:

> *rGEN-09: Provide one or two new figures that represent a revised version(s) of ER Figure 3.1-2 "Site Utilization Plan." The new figure(s) should show more detail about the proposed (ESP) facilities layout and less detail about existing (SGS and HCGS) facilities. In particular, the revised figure(s) should contain all the features of the current Figure 3.1-2 with the deletions and additions listed below.*
>
> ***Deletions:***
> *-grid pattern*
> *-notes and "see note __" labels*
> *-label "The minimum distance from power block envelope to exclusion area boundary is 600 meters (1968 feet)" and associated line*
> *-label "construction boundary fence" and associated line*
> *-label "site services building to be relocated" and associated line*
> *-label "existing security checkpoint: and associated line*
> *-labels "existing plant parking"*
> *-label "learning and development center"*
> *-label "processing center"*
> *-label "operating plant access/egress" and associated line*
> *-label "proposed relocated vehicle barrier system"*
> *-label "Hope Creek cooling tower 48" blowdown line" and associated line*
> *-label "Hope Creek fuel oil storage tank" and associated line*
> *-label "waste water treatment" and associated line*
> *-label "C Unit 1 S0480" at Salem and associated line*
> *-label "C Unit 2 S0160" at Salem and associated line*
> *-label "N/S000" at Salem*
> *-label "E/W000" at Salem*
> *-label "low level rad waste building" and associated line*
> *-label "NOSF"*
> *-label "security center" and associated line*
> *-label "proposed material center vehicle screening area" and associated line*
> *-label "alternate material center access road" and associated line*
> *-label "material center"*
> *-label "C Unit 1 N1040" at Hope Creek and associated line*
> *-label "C Unit 1 W0500" at Hope Creek and associated line*
>
> ***Additions:***
> *-power block, pre-construction, and construction footprints for proposed project facilities, including land areas to be cleared for proposed project facilities*

The revised figure(s) should be provided as an electronic PDF file. The labels of all features on the revised figure(s) should be in large enough print as to be legible in an EIS figure(s) sized 5.75" x 8.0". The revised figure(s) should meet all the grayscale reproducibility requirements for NRC publications.

Supporting Information: Under ESRP 3.1, the following data or information should be obtained: "topographic maps of the site and vicinity (refer to ESRP 2.2) showing plant and station layout, the exclusion area, site boundary, liquid and gaseous release points (and their elevations), meteorological towers, the construction zone, land to be cleared, waste disposal areas, and other buildings and structures (both temporary and permanent) associated with the project (from the ER)."

ER Figure 3.1-2 (SSAR Figure 1.2-3) "Site Utilization Plan" shows many (but not all) of the items listed in ESRP 3.1, but it is illegible when printed to fit within the margins of an 8.5" X 11" page (i.e., 5.75" x 8.0"). The staff needs a revised figure(s) to accurately portray existing facilities, the footprints of proposed facilities, and affected areas in the EIS.

PSEG Response to NRC RAI:

ER Figure 3.1-2 was used as a starting point to develop a new figure based on the requested deletions and additions noted above. The new figure (EIS General RAIs-4-1) is provided in Enclosure 3.

The requested additions are provided to the level of detail available for a PPE ESPA. The footprint of a single generic nuclear and turbine island is provided within the power block area. Additionally, footprints associated with the intake structure, cooling towers and batch plant are provided. The hatching on the figure depicts the areas designated as temporary and permanent footprints. As discussed in response to RAI No. Env-01, Question No. EIS General RAIs-2, all of the areas identified with hatching on the drawing are impacted during the pre-construction time period. All of the land areas shown are considered to be impacted as part of the project and analyzed as such in ER Chapters 4 and 5.

Associated PSEG Site ESP Application Revisions:

None.

PSEG Letter ND-2012-0049, dated September 26, 2012

ENCLOSURE 2

Proposed Revisions
Part 3 – Environmental Report (ER)
Subsection 1.1.1 – Purpose and Need

Marked-up Pages
1.1-1

1.1 PROPOSED ACTION

The proposed federal action is issuance of an ESP to PSEG for the PSEG Site for one or two additional nuclear power units, under the provisions of 10 CFR Part 52, that would be operated as a merchant plant to supply baseload electrical power to the State of New Jersey (NJ). A specific reactor technology has not yet been selected. However, the design characteristics of four reactor technologies under consideration were used to establish a plant parameter envelope (PPE) (Site Safety Analysis Report [SSAR] Section 1.3). While issuance of the ESP does not authorize construction and operation of any new nuclear power units, this ER analyzes the environmental impacts that could result from the construction and operation of one or two new nuclear power units at the PSEG Site. These impacts are analyzed to determine if the site is suitable for the addition of the new nuclear plant, and whether there is an alternative site that is environmentally preferable to the proposed site.

1.1.1 PURPOSE AND NEED

in 2009 identified

would be

An analysis of the need for power, based on annual PJM resource and load forecast data, is provided in Chapter 8. The relevant service area (RSA) for the new plant is the State of NJ which is part of the Eastern Mid Atlantic Zone of PJM, the Regional Transmission Organization (RTO) for the area. As the RTO, PJM is responsible for the reliable supply of bulk electricity within the region. Analysis of PJM data ~~indicates~~ that an additional 7900 MWe (Section 8.4) of baseload capacity ~~is~~ required to meet the energy needs forecasted for 2021 (Reference 1.1-1). ~~Based on this PJM projected electrical requirement, PSEG is considering additional generation capacity at the proposed site to partially meet this need. The HCGS and SGS units supplied 3365 MWe of baseload capacity to this area in 2008 (Reference 1.1-2). An additional nuclear plant of up to approximately 2200 MWe net capacity at the proposed site could meet up to 28 percent of the projected baseload need of 7900 MWe. PSEG is submitting this ESP application to preserve the option of constructing a new nuclear power plant at the PSEG Site for up to approximately 2200 MWe.~~

Insert A

The NRC established the licensing process used by PSEG in 10 CFR 52, Subpart C, *Combined Licenses*. This provision allows entities to apply for a COL that is, a combined construction permit and operating license for a nuclear power facility. A COL authorizes construction and operation of the facility. As described in 10 CFR 52, Subpart A, *Early Site Permits*, the NRC's issuance of an ESP allows an applicant to reserve a reactor site for up to 20 years (yr) prior to obtaining a COL.

The ESP process addresses and resolves site safety, environmental protection, and emergency preparedness issues. ESP licensing issues are resolved with finality during the ESP review process and are not reexamined in any subsequent licensing action involving the permitted site, absent any information meeting certain standards established by the NRC.

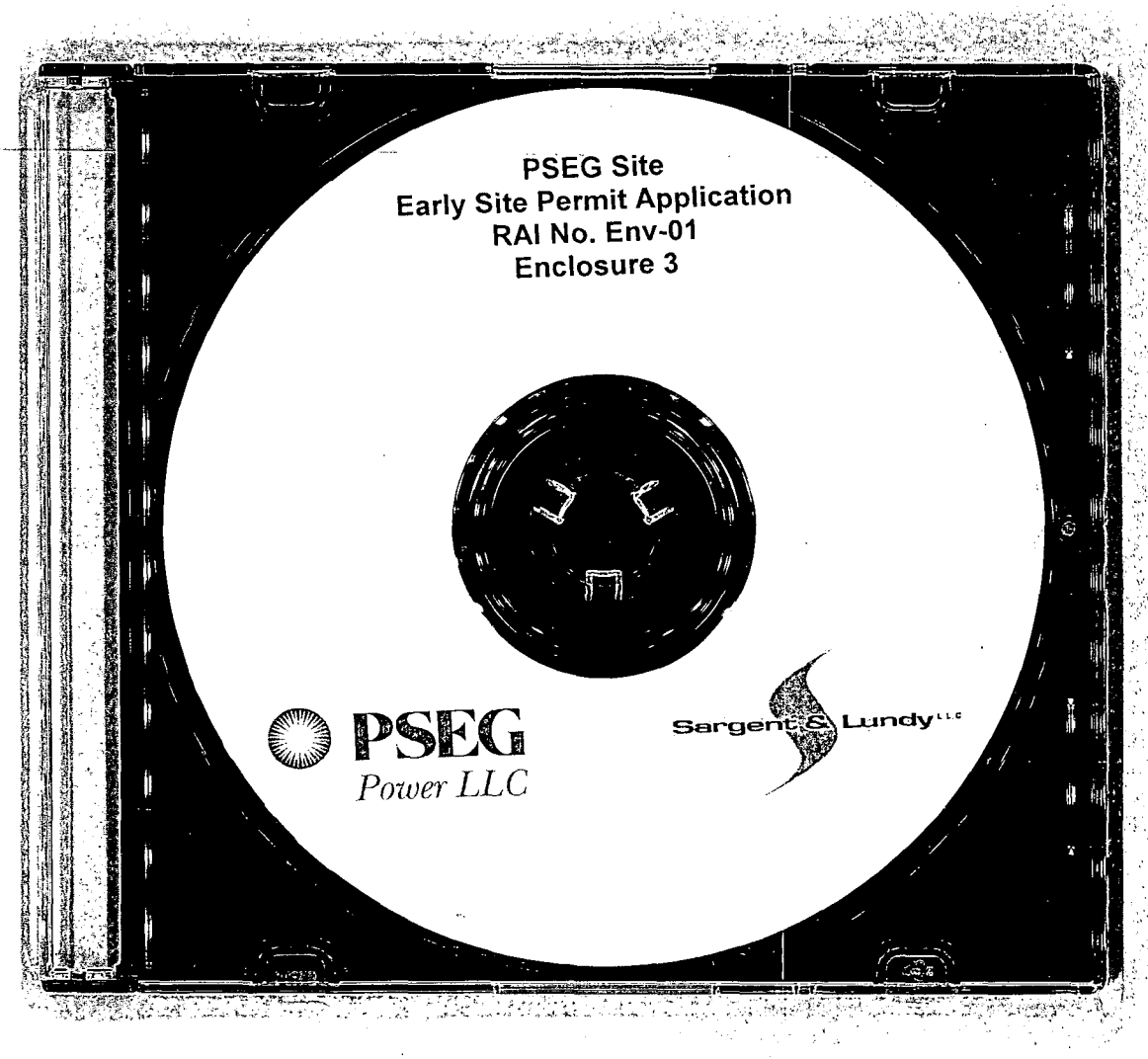
Insert A

The projected 2021 need for baseload generation in NJ, based on the most recent 2012 PJM load forecast, is projected to be in excess of 7300 MWe. This reduced need for baseload generation reflects the suppressed demand growth stemming from the 2008-2009 recession. Given that the expected need for baseload power in NJ is still substantial despite the effects of the recession, the conclusions reached by the initial 2009 need for power analysis that serve as the documented basis for the purpose and need of this project are still valid and applicable to NJ's energy landscape. Therefore, discussions regarding the results of the initial need for power analysis are maintained throughout the Environmental Report. Based on the above projected shortfall in baseload generation, PSEG is submitting this ESP application to preserve the option of constructing a new nuclear power plant at the PSEG Site for up to approximately 2200 MWe to help meet this shortfall.

PSEG Letter ND-2012-0049, dated September 26, 2012

ENCLOSURE 3

CD-ROM containing electronic files requested in RAI Env-01


PSEG Site
Early Site Permit Application
RAI No. Env-01
Enclosure 3
PSEG
Power LLC
Sargent & Lundy LLC