

## **PSEGESPEnveRAIPEm Resource**

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**From:** Fetter, Allen  
**Sent:** Friday, July 20, 2012 4:51 PM  
**To:** PSEGRAIResponses@pseg.com  
**Cc:** PSEGESPEnveRAIPEm Resource; Mallon, James; Robillard, David L; Goetz, Sujata; Mullins, Alicia; Hsia, Anthony  
**Subject:** PSEG ESP Draft RAI table for review  
**Attachments:** PSEG ESP Draft RAI Table\_07-20-12\_submitted.pdf

Please find attached the draft RAI table for the environmental review of the PSEG Site ESP application.

Please note that the draft RAIs in the attached file have been assigned identification numbers that will allow them to be tracked back to the Site Audit Information Needs Table. For example, item "rGEN-08" in the attached table can be tracked to "GEN-08" in the Information Needs Table. In cases where RAIs are based on new items that were added to the Information Needs Table during the Site Audit, or include RAIs that cannot be directly tracked to the Information Needs Table, those items are numbered sequentially beginning with the last numbered item for that topic in the Information Needs Table. For example, the last numbered item for Socioeconomics in the Information Needs Table is "SOC-27", but the attached table contains "rSOC-28", which is a new item that was added after the Site Audit. When the RAIs are issued as final, they will be also be assigned unique sequential RAI numbers (1E, 2E, 3E, etc.) as well as e-RAI identifying numbers.

You have ten working days to review this table and to decide whether you need a conference call to clarify any of the RAIs in the table. Please notify me of your decision in this regard. After the call, or after ten days, NRC will process the RAIs through the eRAI system and issue them to you as final RAIs. Subsequent their receipt, you will then have 30 calendar days to respond. These durations are factored into your review schedule. If additional time is required to respond, please inform me of your proposed schedule to respond at your earliest opportunity.

If you have any questions, please contact me.

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Division of New Reactor Licensing  
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**Draft Requests for Additional Information (RAIs)  
PSEG Early Site Permit (ESP) Application  
July 20, 2012**

<i>Item Number</i>	<i>ESRP/ER Section</i>	<i>RAI</i>	<i>Full Text (Supporting Information)</i>
<b>General (GEN)</b>			
<b>rGEN-01</b>	10 CFR 51, Appendix A(4)  ER 1.1.1	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.	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.
<b>rGEN-04 and rGEN-05</b>	10 CFR 51.45(c)  Reg Guide 4.2 – Chapter 2  COL/ESP-ISG-4	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.	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>i.e.</i> , 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 . . .”

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			<p>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 <a href="http://www.nrc.gov/reading-rm/doc-collections/isg/col-esp-isg-4.pdf">http://www.nrc.gov/reading-rm/doc-collections/isg/col-esp-isg-4.pdf</a></p>
<b>rGEN-08</b>	<p>ESRP 3.1 10 CFR 51.45</p>	<p>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</p>	<p>Under ESRP 3.1, the following data or information should be obtained:</p> <p>“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</p>

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		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.	<p>(from the ER):</p> <ol style="list-style-type: none"> <li>1. residential</li> <li>2. commercial</li> <li>3. industrial</li> <li>4. educational</li> <li>5. transportation corridors (air, auto, rail, pedestrian)</li> <li>6. cultural (recreational, historic, archaeological).</li> </ol> <p>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.</p>
<b>rGEN-09</b>	ESRP 3.1  10 CFR 51.45	Provide a map of the proposed site and vicinity showing existing (SGS and HCGS) and proposed (ESP) facility and station layouts, exclusion areas, site boundaries, 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. The map should be provided as an electronic PDF file suitable for inclusion in the EIS on an 8.5” x 11” page, and should meet all the grayscale reproducibility requirements for NRC publications.	<p>Under ESRP 3.1, the following data or information should be obtained:</p> <p>“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</p>

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		.	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 on an 8.5” X 11” page.
<b>Land Use (LU)</b>			
<b>rLU-02a</b>	ESRP 2.2.1 ER 2.2.1 10 CFR 51.71 (d)  10 CFR 51 Appendix A (7)  Reg Guide 4.2, Chapter 2.1	Provide current New Jersey Department of Environmental Protection Land Use/Land Cover data for the 85-acre parcel on Artificial Island that would be acquired in the proposed land exchange with the Corps.	Under ESRP 2.2.1, the following data or information should be obtained:  “land areas (hectares) devoted to major uses within the site boundary (from the ER).”  ER Section 2.2.1 does not contain Land Use/Land Cover data for the 85-acre parcel on Artificial Island that would be acquired in the proposed land exchange with the Corps.
<b>rLU-02b</b>	ESRP 2.2.1  10 CFR 51.71 (d)  CZMA 1972 16 USC § 1451	Provide a description of the State of New Jersey’s ongoing revision to the Coastal Area Facility Review Act (CAFRA) node designation (to “utility”) for a section of the Artificial Island CDF. In particular, describe the current status of the revision, provide a map of the areas affected, and provide the acreages affected. Also, describe how this revision to a “utility” designation would facilitate the construction of a new nuclear power plant on Artificial Island.	Under ESRP 2.2.1, the following data or information should be obtained:  “land-use plans that include the site and vicinity within their scope (from applicable Federal, State, regional, local, and affected Native American tribal planning agencies).”  The ER does not contain any

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			information about the State of New Jersey’s ongoing revision of the CAFRA node designation for part of Artificial Island, but the applicant discussed this topic during the Environmental Site Audit.
<b>rLU-03</b>	ESRP 4.4.2 ESRP 2.5.2  10 CFR 51.71 (d)	Provide a copy of the following report on the project docket:  <i>Traffic Impact Analysis at the PSEG Site: Preliminary Findings Report</i> . TR-441, Rev. 4. KLD Engineering, P.C. August 28, 2009.	Under ESRP 4.4.2, the following data or information should be obtained:  “information about highways and transportation that covers  - regional and local highway systems, including carrying capacity and condition of roads and highways (from ESRP 2.5.2)  - modifications that might affect traffic flow to and from the station site (from ESRP 2.5.2).”  The ER does not contain sufficient information about potential land use impacts from additional traffic on the proposed causeway. Staff discussed this topic with the applicant during the Environmental Site Audit, and the applicant referred staff to this document (TR-441) for additional information.

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rLU-05a	ESRP 2.2.2 and 9.3  Reg. Guide 4.2, Section 9.2.1	<p>Provide a description of the Deeds of Conservation Restriction that exist for land along the proposed causeway route, for land within the boundaries of Alternative Site 7-3, and for any other lands that would be affected by project construction at the proposed site or the alternative sites. In particular, provide: (1) a map of the lands under a Deed of Conservation restriction at each site; (2) the total acreage of lands under a Deed of Conservation restriction at each site, and; (3) the total acreage of lands that would be removed from a Deed of Conservation Restriction at each site to allow causeway or project construction.</p> <p>Also, provide an explanation of how Alternative Site 7-3 is a realistic siting option, potentially licensable, and capable of being developed given that lands within the site are protected under a Deed of Conservation Restriction. As part of the explanation, describe the process for removing the Deeds of Conservation Restriction to allow for causeway construction or project construction at Site 7-3. If required by the State of New Jersey, has the applicant identified “replacement” land that it could obtain and provide to the State under a Deed of Conservation?</p>	<p>Under ESRP 2.2.2, the following data or information should be obtained:</p> <p>“special land uses (e.g., recreation) other than major land uses in the site and vicinity that could be significantly affected by construction of the proposed project (from the ER and consultation with local agencies).”</p> <p>Under Reg. Guide 4.2, Section 9.2.1, “candidate sites must be realistic siting options, potentially licensable, and capable of being developed.”</p> <p>The ER does not contain information about the Deed of Conservation Restriction that exists for land along the proposed causeway route. The ER mentions, but does not contain specific information about, the Deed of Conservation Restriction that exists for land within the boundaries of Alternative Site 7-3.</p> <p>Staff discussed this topic with the applicant during the Environmental Site Audit, but needs additional information to: (1) determine if Site 7-3 is a realistic siting option, potentially licensable, and capable of being developed and (2) assess land</p>

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			use impacts along the proposed causeway and at Alternative Site 7-3.
<b>rLU-05b</b>	ESRP 2.2.2 and 9.3  Reg. Guide 4.2, Section 9.2.1	<p>Provide a description of the County Preserved Farmland that has been designated within the boundaries of Alternative Site 4-1 and any of the other alternative sites. In particular, provide: (1) a map of the lands designated as County Preserved Farmland at each site; (2) the total acreage of lands under the County Preserved Farmland designation at each site, and; (3) the total acreage of lands that would be removed from the County Preserved Farmland designation at each site to allow project development.</p> <p>Also, provide an explanation of how Alternative Sites 4-1, 7-1, 7-2, and 7-3 are realistic siting options, potentially licensable, and capable of being developed given that lands within each site are designated as County Preserved Farmlands. As part of the explanation, describe the process for removing the County Preserved Farmland designation to allow for project construction. If required by the State of New Jersey, has the applicant identified “replacement” land that it could obtain and designate as County Preserved Farmland?</p>	<p>Under ESRP 2.2.2, the following data or information should be obtained:</p> <p>“special land uses (e.g., recreation) other than major land uses in the site and vicinity that could be significantly affected by construction of the proposed project (from the ER and consultation with local agencies).”</p> <p>Under Reg. Guide 4.2, Section 9.2.1, “candidate sites must be realistic siting options, potentially licensable, and capable of being developed.”</p> <p>The ER contains almost no information about the County Preserved Farmland at Site 4-1, and no information about County Preserved Farmland at any of the other alternative sites. According to the applicant’s <i>Field Verification Report</i> for the alternative sites, Sites 7-1, 7-2, and 7-3 also contain County Preserved Farmland.</p> <p>Staff discussed this topic with the applicant during the Environmental Site Audit, but needs additional</p>

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			information to: (1) determine if Sites 4-1, 7-1, 7-2, and 7-3 are realistic siting options, potentially licensable, and capable of being developed; and (2) assess land use impacts at the alternative sites.
rLU-09	ESRP 4.1.1 ER Section 4.4.1.1.1.2.3	Provide an estimate of the volume of fill material that would be needed for preconstruction and construction at the proposed site and each of the alternative sites. Also, identify the location(s) of any off-site borrow pits that would be used as sources for the fill material needed at the proposed site and each of the alternative sites. Provide a copy of the following report on the project docket:  <i>Nuclear Development Project Soil Management Study, Project No: 12310-020. SL-010093. Sargent &amp; Lundy. 2010.</i>	Under ESRP 4.1.1, the following data or information should be obtained:  “area and location of land in the site and vicinity that will be disturbed by construction on either a long-term or short-term basis (from ESRP 3.1).”  ER Section 4.4.1.1.1.2.3 states:  “Fill material is required to elevate the new plant facilities and structures to final grade. To the extent possible, this fill material comes from within the PSEG Site boundaries. If additional offsite fill material is required, it is expected to come from existing permitted borrow areas such as those used in the construction of HCGS.”  The ER provides no specific information on the volume of fill material that would be needed or the location of potential borrow pits. During the Environmental Site Audit,

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			<p>the applicant stated that about 7.5 million cubic yards of fill material would be needed at the proposed ESP site. The amount of fill material needed at the alternative sites would vary [the <i>Alternative Site Evaluation Study</i> (S&amp;L 2010) contains rough estimates of the fill needed to grade each of the alternative sites]. The applicant also stated that it had prepared an internal report (<i>Nuclear Development Project Soil Management Study, Project No: 12310-020. SL-010093. Sargent &amp; Lundy. 2010</i>) that identifies over 20 potential borrow sites along the Delaware River and in Maryland near Chesapeake Bay.</p>
<b>rLU-11</b>	<p>ESRP 4.1.2 10 CFR 51.71 (d)</p>	<p>Provide a detailed description of causeway construction techniques and associated impacts on land use.</p>	<p>Under ESRP 4.1.2, the following data or information should be obtained:</p> <p>“a description of construction techniques and the associated impact on land use (from the ER).”</p> <p>During the Environmental Site Audit, the applicant stated that the information specified in ESRP Section 4.1.2 cannot be provided at the ESP stage. The Review Team cannot assess the environmental impacts of causeway construction</p>

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			without this information.
<b>rLU-14</b>	ESRP 3.1, 3.7 and 4.4.1  10 CFR 51.45 (d)  10 CFR 51.71	Provide a detailed discussion of the potential visual impacts of constructing and operating the off-site transmission line, as well as any plans to address the visual impacts of the transmission line.	Under ESRP 3.7, the reviewer “should obtain input from and provide input to the reviewers for the following ESRPs, as indicated:  ESRP 4.4.1 - Provide a detailed description of any power transmission system construction associated with the proposed plant that physically impacts the region, including visual aesthetics.  During the Environmental Site Audit, the applicant stated that the information specified in ESRP Section 3.7 cannot be provided until a reactor type is selected and the need for an off-site transmission line is confirmed. The Review Team cannot assess the environmental impacts of an off-site transmission line without this information.
<b>rLU-17</b>	ESRP 2.8  ER 2.1.1, 2.2.1.1, 2.2.3.5 and 2.8  SSAR 1.2.2  40 CFR 1508.25	Provide a description of the existing and planned land uses and zoning at the land parcel most likely to be acquired by the Corps in the proposed land exchange (“Site 15G”), as well as any potential alternative parcels that could be acquired by the Corps if the acquisition of Site 15G cannot be completed. Include current New Jersey Department of Environmental Protection Land Use/Land Cover	Under ESRP 2.8, “The Council on Environmental Quality’s (CEQ’s) definition of the term “scope” at 40 CFR 1508.25 calls for Federal agencies to consider the cumulative impacts of related actions that are connected, cumulative, or similar when determining the appropriate

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		<p>data for Site 15G and any potential alternative parcels. Also, describe the potential land use or zoning impacts of developing and using Site 15G or any alternative parcels as a Corps CDF.</p>	<p>scope for an EIS . . . NRC has indicated that it will follow CEQ’s definition of scope (10 CFR 51.14[b]).”</p> <p>The ER and the SSAR state that PSEG is “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 HCGS. Therefore, with the land acquisition, the entire 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.”</p> <p>The ER does not provide any information about land use or zoning at Site 15G (or alternative CDF sites) or about the potential land use or zoning impacts of developing Site 15G (or alternative CDF sites) as a CDF.</p>
<b>Transmission Lines (TL)</b>			
<b>rTL-03</b>	<p>ESRP 2.2.2</p> <p>ER 9.4.3</p>	<p>Provide a copy of the following report on the project docket:</p> <p><i>GIS Analysis of Potential Off-Site Transmission Macro-Corridors</i>. Revision 1. Prepared for PSEG Power, LLC. Submitted to Sargent &amp; Lundy, LLC.</p>	<p>ESRP 2.2.2 – Obtain information proposed routes for corridors that will be used for construction of transmission lines from the station site to an interconnecting point or points. ER Section 9.4.3 states that</p>

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		Prepared by MACTEC Engineering and Consulting, Inc. (MACTEC Project No. 325DD85298). January 26, 2010.	“A limited GIS study of two potential transmission macro-corridors was performed to provide a preliminary evaluation of the transmission routing alternatives that may be considered when the need for additional off-site transmission has been established.” This study is not on the project docket. The Review Team needs to cite this report to assess the environmental impacts of the proposed off-site transmission line corridors.
<b>rTL-07</b>	ESRP 3.7 10 CFR 51.45 (d) 10 CFR 51.71	For the potential off-site transmission line, provide a description of predicted noise levels resulting from transmission-system operation.	Under ESRP 3.7, the following data or information should be obtained:  “predicted noise levels resulting from transmission-system operation (from the ER).”  During the Environmental Site Audit, the applicant stated that the information specified in ESRP Section 3.7 cannot be provided until a reactor type is selected and the need for an off-site transmission line is confirmed. The Review Team cannot assess the environmental impacts of an off-site transmission line without this information.

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<b>Hydrology (HYD)</b>			
<b>rHYD- 02</b>	ESRP 2.3.1 and 4.2  ER 4.2.2.2.1	Provide information that clarifies the rate at which the MODFLOW model stabilized in the dewatering simulation.	Under ESRP 4.2 the identification of hydrologic alterations expected to result from the project related construction activities requires adequate data and information.  The rate of model stabilization for the dewatering predictions is needed for evaluating the model calibration.  ER Section 4.2.2.2.1 contains no information about the rate at which the MODFLOW model stabilized in the dewatering simulation.
<b>rHYD-03</b>	ER 2.3, 3.1, 3.4, 4.2 and 6.3  10 CFR 51.41  10 CFR 51.71	Provide the digital files corresponding to all map layers used in the following ER figures:  2.3-1 2.3-2 2.3-6 2.3-29 2.3-30 2.3-31 2.3-32 2.3-39 2.3-40 2.3-41 2.3-42 3.1-2 3.4-2 3.4-3	Under 10 CFR 51.41, information that may be useful in aiding the NRC in complying with section 102(2) of NEPA may be requested of the applicant.  To complete an impact assessment that involves the use of spatial datasets such as maps and GIS layers, and to prepare figures for the EIS, the staff needs the digital files that were used to create the ER figures listed.

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		3.4-4 4.2-1 4.2-2 4.2-3 4.2-4 6.3-1	
<b>rHYD-06</b>	ESRP 2.3.1, 4.2.1, and 4.2.2  ER 4.2.1.1.5	Provide details of (1) how the 152-acre existing floodplain area would be affected by the placement of fill and (2) what State of New Jersey requirements regarding the placement of such fill must be met. In particular, provide the rationale for the ER conclusion that the placement of fill would result in a minor reduction in available flood storage. Provide a description of the State of New Jersey requirements that are applicable to the placement of fill in floodplains.	ER Section 4.2.1.1.5 states that 152 acres of onsite and offsite floodplains would be affected by the placement of fill. The ER further states that the placement of fill would result in a minor reduction in available flood storage. No additional details are provided in the ER that would support the finding stated above.
<b>rHYD-09</b>	ESRP 3.4.1  ER 3.4.2.1	Provide details of how the effects of any frazil ice formation were accounted for in the calculation of through-screen velocities for the cooling water intake for the proposed plant.	Regarding Clean Water Act, Section 316(b) requirements for the proposed plant's intake, the applicant has stated in the ER that the through-screen velocities did not consider potential blockage from frazil ice formation.
<b>rHYD-14a</b>	ESRP 5.3.2.1  ER 5.2.3.1.2	Provide the input files and supporting data (such as the river cross section and ambient discharge) used for CORMIX simulations in digital form.	To evaluate the appropriateness of the applicant's thermal plume analyses and to independently assess the impacts for the EIS, the staff requires sufficient information and supporting data used in CORMIX simulations.  ESRP 5.3.2.1 "Obtain information

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			about physical impacts and thermal plumes in enough detail to determine potential impacts...”
<b>rHYD-14b</b>	ESRP 5.3.2.1 ER 5.2.3.1.2	Provide justification for use of the CORMIX model for estimation of the thermal plume. In particular, explain how using CORMIX for the Delaware River near the PSEG site is appropriate and conservative.	ESRP 5.3.2.1 “Obtain information about physical impacts and thermal plumes in enough detail to determine potential impacts...”  The CORMIX model uses a simplified representation of the stream cross-section in plume analysis. The Delaware River near the PSEG site has a complex cross section due to the presence of the dredged navigation channel. The river is also expected to be affected by tidal processes and salinity variances and wind-induced circulation that affect the dynamics of the Delaware Estuary.
<b>rHYD-14c</b>	ESRP 5.3.2.1 10 CFR 51.41 ER 5.2.3.1.2	Provide a description of how the effects of climate change were addressed in thermal plume analyses.	Under 10 CFR 51.41, information that may be useful in aiding the NRC in complying with section 102(2) of NEPA may be requested of the applicant.  Climate change can result in warmer air temperatures, alterations in Delaware River discharge, and sea-level rise. Provide a description of how these and other climate change-

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			<p>related effects were addressed in thermal plume analyses.</p> <p>National Oceanographic and Atmospheric Administration (NOAA) National Climatic Data Center meteorological data for the nearest National Weather Service (NWS) station (from ESRP 2.7)</p>
<b>rHYD-14d</b>	<p>ESRP 5.3.2.1</p> <p>ER 5.2.3.1.2</p> <p>10 CFR 51.45 (d)</p> <p>10 CFR 51.71</p>	<p>Provide a description of how the Chesapeake and Delaware Canal affects the dynamics of the Delaware River near the PSEG site and the Delaware Estuary, and describe how these effects influence thermal plume analyses.</p>	<p>ESRP 5.3.2.1 “Obtain information about physical impacts and thermal plumes in enough detail to determine potential impacts...”</p>
<b>rHYD-15</b>	<p>ESRP 3.3.2, 3.6.1 and ER 5.2.3.1.1</p>	<p>Provide a description of the chemical treatment that would be used in the cooling water system for biological control and to prevent impacts to surface water quality. Provide a list of the chemicals that would be processed through each system (e.g., corrosion inhibitors, antifouling agents) and total amounts used per year, frequency of use, and concentrations of these chemicals or their products in each waste stream. Identify activities of other agencies and projects that could contribute to a cumulative impact on the water-related impacts of the proposed waste discharge systems.</p>	<p>ESRP 3.3.2 - identification, quantities, and points of addition of chemicals and additives to be used by each system (from the ER)</p> <p>ER Section 5.2.3.1.1 contains no detail on the chemical treatment that would be used in the cooling water system.</p>
<b>rHYD-16</b>	<p>ESRP 6.6</p>	<p>Provide information about ongoing water quality monitoring and calibration procedures for field</p>	<p>ESRP 6.6 - Verify that the following features are described for each of the</p>

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	ER 5.2.3.1.1	<p>sampling. Also provide a list of analytical laboratories so staff can check certification. In the information provided, include the following:</p> <ul style="list-style-type: none"> <li>-discuss the documentation of data quality objectives (if any);</li> <li>-describe reference or calibration standards used to verify accuracy of data and statistical methods used to interpret results;</li> <li>-describe the automated monitoring systems used;</li> <li>-discuss the monitoring equipment, data analysis procedures and documentation of data quality objectives for all stations monitoring groundwater; and</li> <li>-discuss how the effluent and ambient monitoring systems and procedures would be designed to enable permitting and compliance with the New Jersey Pollutant Discharge Elimination System (NJPDES).</li> </ul>	<p>programs:... “The intensity of sampling required for each water-quality parameter should be commensurate with the degree of impact expected. Sampling equipment, pattern, frequency, duration, and number of samples should be adequate to measure water-quality parameters....”</p> <p>ER Section 5.2.3.1.1 contains no detail on which analytical methods/laboratories would be used for water quality monitoring.</p>
<b>rHYD-21</b>	ER 5.2.3.2 SSAR 2.4.12.5 ESRP 4.2.1	Provide post-construction grading plans and the planned placement of engineered fill, and describe the impact this would have on infiltration and surface runoff characteristics, groundwater gradients, and flow paths.	<p>ESRP 4.2.1 – obtain data and information on the identification and description of project related construction activities expected to result in hydrologic alterations at the site</p> <p>ER Section 5.2.3.2 does not address the impacts of potential groundwater mounding after construction.</p> <p>Because this is an ESP application, the applicant has not completed a</p>

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			<p>surface water drainage design and grading plan. However, the applicant has committed to following all requirements and obtaining all necessary permits. No fill source has been determined yet, so properties are not known. Applicant would follow BMPs and would be permitted by NJPDES. New Jersey permit requires minimization of impervious cover, so the potential for mounding exists. Dewatering model evaluated post-construction environment and resultant water levels. Also see SSAR 2.4.12.5--states that final groundwater level would be 6 – 10 ft higher than current conditions (final plant grade would be 36.9 ft NAVD88). The applicant is not sure if sheetpiles around the nuclear island would be removed.</p> <p>Consider both the points of entry of site drainage into surface-water bodies and the areal extent of impact by suspended materials and siltation.</p>
<b>rHYD-27</b>	ER 5.2.3.2 ESRP 5.4 10 CFR 50 Appendix I	Provide a characterization, with supporting data and rationale, to discuss tritium deposition from aerial releases near the containment dome at SGS Unit 1 and the potential for a similar issue at the proposed plant. If this potential exists, please discuss cumulative impacts to water resources and users	ER Section 5.2.3.2 contains no information about tritium deposition from aerial releases near the containment dome at SGS Unit 1.  At SGS Units 1 and 2, fuel pool water

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		<p>from aerial deposition of releases from both the existing and proposed plants.</p>	<p>evaporates and is vented to the atmosphere. Total liquid and vapor release has been 1000-2100 Ci/yr (tritium). Samples are taken of the air venting resulting in approximately 300 Ci/yr (tritium) release. PSEG first discovered this in a storm drain at SGS Unit 2 that collected the condensate containing the tritium.</p> <p>In 2010, PSEG agreed with the State of New Jersey to install 10 monitoring wells, and in 2011 found 3000-20000 pCi/L outside the tritium plume. The wells were installed in a complete areal coverage. A buried piping evaluation program was also implemented to check for leaks, but no patterns of high concentration were found and no change in areal distribution of high values was found.</p> <p>During the Environmental Site Audit, PSEG committed to placing the remedial investigation work plan addendum and the original work plan in the electronic reading room. Sampling on the roof of SGS Unit 1 found 60,000 pCi/L; however, furthest from the containment dome only 100s to 1000s pCi/L were measured. PSEG plans to collect additional samples closer to the</p>

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			<p>dome, and to examine the wind rose to see if there is a pattern to the release.</p> <p>For the proposed plant, all pipes would be double-walled or in an accessible chase. PSEG would monitor for tritium and respond according to requirement at the time.</p>
<b>rHYD-28</b>	ER 5.2.2 and 5.2.3 ESRP 4.2.1	Provide a description of the hydraulic changes that would occur if Site 15G is again used by the Corps for dredge spoils deposition.	<p>ER Sections 5.2.2 and 5.2.3 contain no description of the hydraulic changes that would occur if Site 15G is again used by the Corps for dredge spoils deposition. This issue needs to be addressed in the EIS.</p> <p>“piezometric contour maps and hydraulic gradients (historical, if available, and current) (from the ER and the general literature)”.</p>
<b>rHYD-29</b>	ER 2.2.3.4 and 4.1.1.2.1 ESRP 4.2.1	Provide a realistic case evaluation of the effects of the proposed causeway on tides and marshland.	During the Environmental Site Audit, the applicant agreed to review the causeway description in the ER and to consider eliminating the need to deal with the change in flooding due to the continuous berm worst case assumption.

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<b>Terrestrial Ecology (TE)</b>			
<b>rTE-01</b>	10 CFR 51.71(d) Fish and Wildlife Coordination Act, of 1958. Reg. Guide 4.11 ESRP 2.4.1 and 4.3.1	<p>Provide an update to the threatened and endangered (T&amp;E) species list in the ER based on the latest New Jersey list update, and provide life histories on any additional species not included in the ER.</p> <p>Provide a separate list of New Jersey “special concern” species. Life histories on these “special concern” species are not needed.</p> <p>Provide narratives on T&amp;E wading bird species based on the updated New Jersey T&amp;E list, along with a table listing New Jersey “special concern” species.</p>	<p>The New Jersey Department of Environmental Protection adopted updates to threatened and endangered species list on February 23, 2012. As a result, the updated T&amp;E species list is needed to depict currently listed species for the proposed site and the alternative sites.</p> <p>The request for life history information for any additional species is consistent with what is already provided in the ER for listed wildlife species. A list of “special concern” species is needed to accurately assess important species for the proposed site and the alternative sites.</p> <p>List and description of “important” species, including life histories (ESRP 2.4.1).</p> <p>Additional background information on terrestrial ecology in vicinity necessary for review of impacts of construction on terrestrial resources (ESRP 4.3.1).</p>
<b>rTE-02</b>	10 CFR 51.71(d) Reg. Guide 4.11 ESRP 2.4.1	Provide a USGS Land Use/Land Cover-based cover type map for the proposed site.	The color scheme used for the Land Use/Land Cover maps in ER Chapter 2 makes it difficult to distinguish different cover types. A more simplified version of these maps

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			would help solve this problem. A description and map of area occupied by each natural and man-made habitat type (ESRP 2.4.1).
<b>rTE-03</b>	10 CFR 51.41 Reg. Guide 4.11 ESRP 2.4.1 and 4.3.1	Provide on the project docket copies of U.S. Fish and Wildlife Service response letters and other agency correspondence.  Provide on the project docket copies of all letters pertaining to wetlands jurisdiction and interpretations to and from the New Jersey Department of Environmental Protection and the Corps. In particular, provide on the project docket the following letter:  <i>Letter to Mr. Brian Bellacima (Corps) from Mr. Jeffrey J. Pantazes (PSEG) dated May 5, 2011, Subject: Jurisdictional Determination Request, U.S., Army Corps of Engineers Confined Disposal Facility, Lower Alloways Creek Township, Salem County, N.J.</i>	During the Environmental Site Audit, the staff discussed with the applicant the availability of agency letters relating to wildlife potentially present in the site vicinity and any agency interpretations on wetlands jurisdiction. These letters are needed to document correspondence with governmental agencies and to allow for an accurate assessment of potential impacts to wildlife and other sensitive terrestrial resources.  Documentation that the applicant has consulted with appropriate Federal, State, regional and local agencies (ESRP 2.4.1 and 4.3.1).
<b>rTE-09</b>	10 CFR 51.71(d) Reg. Guide 4.11 ESRP 4.3.1	Provide information on avian protection measures that would be implemented for the proposed off-site transmission lines.	Although the exact routing and potential impacts from the building and operating off-site transmission lines are not known, a description of potential avian protective measures that may be employed would be useful in the assessment of potential impacts to avian populations from

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			transmission lines. Potential for bird collisions with transmission towers and lines (ESRP 4.3.1).
<b>rTE-11</b>	10 CFR 51.41 Reg. Guide 4.11 ESRP 2.4.1 and 9.3	Provide data from additional green frog surveys planned for the spring/summer 2012.	During the site audit, the applicant mentioned that additional green frog surveys are planned for the spring/summer 2012. The information for the green frog may help to better characterize the distribution of this species on the proposed site, and allow a better assessment of potential impacts to this species.  List and description of “important” species and their spatial and temporal distributions, including life histories (ESRP 2.4.1).  Factors considered at each level of alternative site selection process (ESRP 9.3).  Criteria used to screen potential alternative sites (ESRP 9.3).
<b>rTE-13</b>	10 CFR 51.41 Reg. Guide 4.11 ESRP 2.4.1, 4.3.1, and 5.6.1	Provide the following documents on the project docket:  <i>Biological Inventory and Habitat Characterization Report for Alloway Creek Site</i> (January 1996)  <i>Alloway Creek Watershed Phragmites-</i>	<i>Biological Inventory and Habitat Characterization Report for Alloway Creek Site</i> provides important baseline ecological information of significant value for the environmental review.

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		<p><i>Dominated Wetland Restoration Management Plan, Elsinboro and Lower Alloway Creek Townships, Salem County, NJ</i> (February 18, 2004).</p> <p>Provide the following document (which outlines maintenance conducted along transmission line corridors) in the electronic reading room:</p> <p><i>PSEG Environmental Compliance Matrix</i> (January 2011).</p>	<p><i>Alloway Creek Watershed Phragmites-Dominated Wetland Restoration Management Plan, Elsinboro and Lower Alloway Creek Townships, Salem County, NJ</i> provides valuable baseline information directly related to mitigation methods and measures that may be undertaken for the proposed action.</p> <p><i>PSEG Environmental Compliance Matrix</i> provides valuable information on current PSEG transmission line corridor maintenance procedures that take into consideration sensitive natural resources. This information provides a good indication of mitigation and maintenance measures that may be undertaken for the proposed off-site transmission lines.</p> <p>A qualitative estimate of importance of habitat of threatened, endangered and other “important” species on and in the vicinity of the site relative to habitat of such species throughout entire range (ESRP 2.4.1).</p> <p>A description and location of any ecological or biological studies of the site or its environs that are recently or currently in progress (ESRP 2.4.1).</p> <p>Additional background information about the terrestrial ecology of the</p>

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			<p>site and vicinity necessary for review of impacts on terrestrial resources (ESRP 4.3.1).</p> <p>Maintenance practices along transmission system right-of-ways that are anticipated to affect terrestrial biota (ESRP 5.6.1).</p> <p>Special maintenance practices used in important habitats along transmission system right-of-ways (ESRP 5.6.1).</p>
<b>rTE-15</b>	10 CFR 51.41 ESRP 4.3.1 Reg. Guide 4.11	Provide existing data about terrestrial ecology at the 15G Site, as well as any additional data about terrestrial ecology at the 15G Site to be collected in spring/summer 2012.	<p>During the Environmental Site Audit, the applicant indicated that information was available for the 15G site. Also, the applicant indicated that additional surveys for the 15G site were planned for the spring/summer 2012. These data are needed for an assessment of the potential terrestrial ecology impacts of the proposed land exchange.</p> <p>Additional background data about terrestrial ecology of transmission corridors and offsite areas, necessary for review of impacts of construction on terrestrial resources (ESRP 4.3.1).</p>
<b>rTE-16</b>	10 CFR 51.75(b) ESRP 9.3	Provide additional information on the function of preserves and refuges in the vicinity of the alternative sites.	Specific information on the functions of preserves and refuges is necessary to compare the proposed and alternative sites. The information needed is limited to the names of the

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			<p>facilities and a brief description of its function.</p> <p>Additional information for land specially designated for environmental, recreational, or other special purposes to compare the proposed and alternative sites (ESRP 9.3).</p>
<b>Aquatic Ecology (AE)</b>			
<b>rAE-38</b>	ESRP 2.4.2	<p>In its letter dated December 9, 2010 (ML103570197) the National Marine Fisheries Service lists 14 Federally managed fish species with designated Essential Fish Habitat (EFH) in the Delaware River Estuary in the vicinity of the proposed site. To support staff’s assessment of the potential effects of the proposed action on EFH, provide information on these species, including their life histories, habitat requirements, and prey species. Also describe the potential impacts of project construction and operation on the Federally managed species as well as on their prey species.</p>	<p>Under ESRP 2.4.2, the following data or information should be obtained:</p> <p>“the temporal and spatial (including depth) distribution and abundance of important aquatic species . . . Such critical life-support requirements as spawning areas, nursery grounds, food habits, feeding areas, wintering areas, and migration routes (to the extent that power plant construction or operation is expected to affect these parameters).”</p> <p>The staff needs the requested information to conduct an Essential Fish Habitat (EFH) assessment.</p>

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<b>Socioeconomics and Environmental Justice (SOC)</b>			
<b>rSOC-01</b>	10 CFR 51.50(b) 10 CFR 51.75(b)  ESRP 2.5.2 and 4.4.2  ER 2.5.2.1.1.2 and 4.4.2.1	For the most recent outage at SGS/HCGS, provide the number and type (construction crafts) of outage workers by county or zip code of their permanent residences from inside and outside the ROI.	ESRP Section 2.5.2 directs the staff to find information related to the area’s economic and employment characteristics. ESRP Section 4.4.2 directs the staff to predict “the number of workers originating from within the region and the number of in-migrants.” ESRP Section 4.4.2 also directs the staff to estimate the number of “construction force in-migrants, and predict their temporal and geographic distribution.”  The ER provides estimates for in-migrating workers based on the operations workforce at SGS and HCGS. However, discussions with the applicant at the Environmental Site Audit indicated that the residential distribution of the construction workforce for the new plant would likely be more accurately represented by the distribution of workers in recent outages at SGS/HCGS than by the distribution of operational workers at the stations.
<b>rSOC-03</b>	10 CFR 51.50(b) 10 CFR 51.75(b)  ESRP 2.5.2	Provide housing data from the 2010 Census and most recent <i>American Community Survey</i> estimates regarding the sales and rental market in the region, number and types of units, turnover and vacancy	ESRP Section 2.5.2 directs the staff to obtain “housing information, including the sales and rental market in the region, number and types of

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	ER 2.5.2.4	rates, and trends in addition to housing stock, and adequacy of structures. Provide updated housing data for ER Section 2.5.2.4.	units, turnover and vacancy rates, and trends...” The housing information in the ER describes the environment that existed before the major changes in the national housing market that began in 2007. An adequate assessment of the housing impacts of the proposed project requires more current data.
<b>rSOC-06</b>	10 CFR 51.50(b) 10 CFR 51.75(b) 69 FR 52040  Executive Order 12898  ESRP 2.5.4 NRR LIC-203 Rev. 2  ER 2.5.4	Provide updated Census Block Group population information for minority and low-income populations using the 2010 Census data, <i>American Community Survey</i> , and/or other current sources. Provide updated environmental justice minority population information for ER Section 2.5.4, including maps.	ESRP Section 2.5.4 directs the staff to obtain “a general description (with maps) of the location of all minority and low-income populations within the environmental impact area of each alternative site...” The data in the ER are from the 2000 Census and 2005-2007 <i>American Community Survey</i> estimates. An adequate assessment of environmental justice impacts of the proposed project requires more current data.
<b>rSOC-07</b>	10 CFR 51.50(b) 10 CFR 51.75(b)  ESRP 2.5.2 and 4.4.2  ER 2.5.2.1.1.4 and 4.4.2.1	Provide an estimate of the number and types (construction crafts) of workers expected to be employed during each quarter-year of the construction period associated with the new power plant and a separate estimate of the estimated quarterly employment associated with construction of the proposed causeway.	ESRP Section 2.5.2 directs the staff to find information related to the area’s economic and employment characteristics. ESRP Section 4.4.2 directs the staff to “estimate the annual construction labor force requirements...” and “...where necessary, determine these requirements for the major construction crafts, using standard

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			craft categories.” The ER does not clearly state when, in relation to potential plant construction, the proposed causeway would be built. Additional information regarding timing is needed to assess traffic and related impacts.
<b>rSOC-11</b>	10 CFR 51.50(b) 10 CFR 51.75(b)  ESRP 4.4.2  ER 4.4.1.5	Provide documentation describing how the applicant would participate in implementing potential roadway improvement mitigation measures identified in ER Section 4.4.1.5 to reduce construction traffic impacts.	ESRP Section 4.4.2 directs the staff to identify and assess potential mitigation measures. ESRP Section 4.4.2 also directs the staff to analyze where the applicant has some control or “...little to no control over alternatives to mitigate impacts that in the reviewer’s judgment are adverse...” The ER identifies mitigation measures, but does not clarify the extent to which the applicant has control regarding them. Roadway improvements are typically implemented and funded by state and local governments (with possible federal funding assistance). Additional rationale is needed to support the assertion in the ER that identified roadway improvements to alleviate impacts of construction traffic would be mitigation measures rather than fiscal impacts on local and state governments.
<b>rSOC-14</b>	10 CFR 51.50(b)	Provide estimates of the amounts of recyclable and	ESRP Sections 4.4.2 and 5.8.2 direct

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	10 CFR 51.75(b) ESRP 4.4.2, 5.8.2 ER 4.4.1.1.1.1	non-recyclable wastes that would be generated during project construction and operation and the current and projected unused capacities of recycling facilities and landfills that would likely accept these wastes.	the staff to estimate “the physical demands placed by plant construction [and operation] on local public facilities and services compared with available facilities and services.” The ER does not include such information regarding waste recycling and disposal impacts.
<b>rSOC-20</b>	10 CFR 51.50(b) 10 CFR 51.75(b) 69 FR 52040 Executive Order 12898  (a) ESRP 2.5.4, 4.4.3, and 5.8.3 NRR LIC-203 Rev. 2 ER 2.5.4, 4.4.3, 5.8.3  (b) ESRP 4.4.3, and 5.8.3 NRR LIC-203 Rev. 2 ER 4.4.3.3, 5.8.3.3	(a) Place in the docket the document:  <i>Subsistence Living in the Vicinity of Salem and Hope Creek Nuclear Generating Stations</i> , Tetra Tech NUS, Inc, February 18, 2010.  (b) Provide documentation of PSEG’s participation with Salem County under the Neighborhood Reinvestment Act and PSEG’s support for local/regional programs to train potential workers at existing and potential new power plants.	(a) ESRP Section 2.5.4 directs the staff to provide “a brief description of the overall results and adequacy of any surveys (archival or field) that were conducted by the applicant.” ESRP Sections 4.4.3 and 5.8.3 call on staff to evaluate the result of any additional outreach. The requested document provides evidence of outreach to identify subsistence and other environmental justice populations in the area affected by construction and operation of the potential new power plant and pertinent information about those populations. It is recognized that names and other personally identifying information may need to be redacted before the report is placed in the docket.  (b) ESRP Sections 4.4.3 and 5.8.3 direct the staff to assess the degree to which each minority and low-income

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			<p>population is disproportionately receiving either adverse impacts or benefits compared with the general population and, if necessary, “discuss any mitigative measures for which credit is being taken to reduce environmental justice concerns”. The requested information is needed to support the ER’s conclusions that economic benefits of the proposed project would be proportionately available to low income and minority populations. While these programs were verbally described during the Environmental Site Audit, documentation is needed so that the programs can be evaluated in the EIS.</p>
<b>rSOC-22</b>	<p>10 CFR 51.50(b) 10 CFR 51.75(b)</p> <p>ESRP 4.4.2 and 5.8.2</p> <p>ER 4.4.2.2.1, 4.4.2.2.2, 5.8.2.2.1, and 5.8.2.2.2</p>	<p>Place in the docket the table “Calculation of Multipliers for Section 10.4 Based on 2006 NEI Report” from VAL 10.4.1.3-001.</p>	<p>ESRP Sections 4.4.2 and 5.8.2 direct the staff to “identify and analyze components of the regional and community social, political, and economic systems that would be potentially impacted and “determine by jurisdiction the tax revenues derived from construction [and operation].” The ER discusses this qualitatively. The requested table provides estimates of construction and operations expenditures by county, which are needed to quantifiably assess the project’s fiscal and economic impacts.</p>

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<b>rSOC-25</b>	10 CFR 51.50(b) 10 CFR 51.75(b) 69 FR 52040  Executive Order 12898  ESRP 2.5.4, 4.4.3, and 5.8.3 NRR LIC-203 Rev. 2  ER 2.5.4, 4.4.3, and 5.8.3	Place in the docket the figure “Salem, NJ Environmental Justice Block Groups and Traffic Network” (Reading Room item PSEG_Fig02_05_007_SalemEJ_wStreet_8x11.pdf).	ESRP Section 2.5.4 directs staff to obtain “a general description (with maps) of the location of all minority and low-income populations within the environmental impact area of each alternative site...” ESRP Sections 4.4.3 and 5.8.3 direct the staff to assess the degree to which each minority and low-income population is disproportionately receiving either adverse impacts or benefits compared with the general population. The scale of the pertinent maps in the ER does not permit consideration of impacts on these populations in the primary impact area of the proposed project. The requested figure provides needed level of detail.
<b>rSOC-26</b>	10 CFR 51.50(b) 10 CFR 51.75(b) 69 FR 52040  Executive Order 12898  ESRP 2.5.4 and 9.3  NRR LIC-203 Rev. 2  ER 9.3.2.1.8	Provide updated Census Block Group population information for minority and low-income populations within a 50-mile radius of each alternative site, using the 2010 Census data, <i>American Community Survey</i> and/or other sources. Provide updated environmental justice population information (including maps) for ER sections 2.5.4 and 9.3.	ESRP Section 2.5.4 directs the staff to obtain “a general description (with maps) of the location of all minority and low-income populations within the environmental impact area of each alternative site...” ESRP Section 9.3 directs the staff to consider “socioeconomic factors, including aesthetics, archaeological and historic preservation, and environmental justice.” NRR LIC-203 Rev. 2 directs the staff to “for each alternative site, determine the percentage of each minority population category and

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			percentage of the households below the poverty level in the area (typically, a 50-mile radius) likely at the census block group level.” The ER relies on data from the 2000 Census and presents no maps of the environmental justice populations other than for the preferred site.
<b>rSOC-28</b>	10 CFR 51.50(b) 10 CFR 51.75(b)  ESRP 2.5.1  ER 2.5.1	For the demographics within the region, provide more recent population data and estimates using verifiable sources such as the 2010 Census and <i>American Community Survey</i> data. Provide updated population estimates for ER Section 2.5.1.	ESRP Section 2.5.1 requires the staff to prepare population data that “...should be based on the current decade census data and, where available, more recent data.” The ER relies on population data and estimates dating from before the 2010 census.
<b>Historic and Cultural Resources (CR)</b>			
<b>rCR-01</b>	ESRP 2.5.3  ER 2.5.3  36 CFR 800	Provide copies of all cultural resource surveys (without maps) completed for the environmental review for the ESP application.	Numerous studies were undertaken to identify historic properties in the Area of Potential Effect (APE) for the ESP application. Staff needs to review these studies to determine what, if any, impacts the issuance of the ESP would have on historic properties.  Review requires “a detailed description of any archaeological or historical surveys of the proposed

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			<p>site, transmission line routes, or access corridors, including the following:</p> <ul style="list-style-type: none"> <li>-the physical extent of the survey. If the entire site was not surveyed, the basis for selecting the area to be surveyed is needed.</li> <li>-a brief description of the survey techniques used and the reason for selecting the survey techniques used</li> <li>-the qualifications of the surveyors</li> <li>- the findings of the survey in sufficient detail to permit a subsequent independent assessment of the impact of the proposed project on archaeological and historic resources.” (ESRP 2.5.3)</li> </ul>
<b>rCR-02</b>	<p>ESRP 2.5.3 and 9.3</p> <p>36 CFR 800</p> <p>ER 2.5.3</p>	<p>Provide copies of the archaeological surveys and archaeological site forms (without maps) collected on cultural resources for the ESP application. This material should include survey reports in the general vicinity of the proposed site and each alternative site, and copies of the archaeological site forms for cultural resources in the general area of the proposed site and each alternative site.</p>	<p>The applicant conducted a review of surveys and known cultural resources for the ESP application. During the Environmental Site Audit, the applicant stated that it would make this material available to the NRC. The requested information is needed to understand what cultural resources could be affected if the ESP is granted. This information will also provide information on the level of</p>

<i>Item Number</i>	<i>ESRP/ER Section</i>	<i>RAI</i>	<i>Full Text (Supporting Information)</i>
			<p>past investigations for cultural resources.</p> <p>Applicant needs to supply “a description of properties within the proposed site or within proposed transmission line corridors, access corridors, and offsite areas that are in or eligible for inclusion in the <i>National Register</i> or are included in State or local registers or inventories of historic and archaeological resources. (ESRP 2.5.3)</p> <p>Applicant needs to supply “a description of historic properties within 16 km (10 mi) of the proposed site or within 2 km (1.2 mi) of proposed transmission line routes, access corridors, and offsite areas that are in or have been determined eligible for inclusion in the <i>National Register</i> or are included in State or local registers or inventories of historic and cultural resources.” (ESRP 2.5.3)</p>
<b>rCR-04</b>	ESRP 2.5.3 ER 2.5.3 36 CFR 800	Provide cultural resource information for Site 15G.	Information on cultural resources found at Site 15G is needed to conduct the analysis. The potential for impacts to cultural resources needs to be determined for all parts of the proposed project, and the ER does

<i>Item Number</i>	<i>ESRP/ER Section</i>	<i>RAI</i>	<i>Full Text (Supporting Information)</i>
			<p>not provide any information for Site 15G.</p> <p>Applicant needs to supply “a description of properties within the proposed site or within proposed transmission line corridors, access corridors, and offsite areas that are in or eligible for inclusion in the <i>National Register</i> or are included in State or local registers or inventories of historic and archaeological resources.” (ESRP 2.5.3)</p>
<b>rCR-08</b>	<p>ESRP 2.5.3 and 4.1.3</p> <p>36 CFR 800</p>	<p>Provide a list of interactions and copies of correspondence with the Delaware and New Jersey State Historic Preservation Offices (and any other interested parties consulted on the effects of the ESP on cultural resources) that have not been submitted previously.</p>	<p>The applicant has indicated that it has discussed the effects of the project with local organizations with an interest in historic preservation. The views of these organizations are necessary to complete the review under Section 106 of the National Historic Preservation Act.</p> <p>Applicant should provide “the comments of any organizations contacted by the applicant to locate and assess archaeological and historic resources located on or near the proposed station site” (ESRP 2.5.3)</p> <p>Applicant should provide “the State Historic Preservation Officer’s (SHPO’s) comments on the impact of</p>

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			<p>the proposed project on important historic properties (from consultation with State agencies and Native American tribes).” (ESRP 4.1.3)</p> <p>These letters are needed to document correspondence with governmental agencies and to allow for an accurate assessment of potential impacts to historic and cultural resources.</p>
<b>rCR-12</b>	<p>ESRP 4.1.3</p> <p>36 CFR 800</p> <p>43 CFR 10</p>	<p>Provide copies of any procedures currently followed by PSEG for considering cultural resources during operations at SGS/HCGS.</p>	<p>Not all historic properties would be destroyed during construction of the power plant. For example, there are several historic buildings on the SGS/HCGS site. The applicant has indicated that it has procedures for considering these resources during operation of the existing SGS/HCGS plants. Assuming that these or similar procedures would be followed for any new plants, this information is needed to understand how such resources would be protected during operation of a new plant.</p> <p>Applicant should supply “the applicant’s procedures for identifying the potential for human remains to occur in the project area, and for complying with provisions of the Native American Graves Protection and Repatriation Act (NAGPRA) (43</p>

<i>Item Number</i>	<i>ESRP/ER Section</i>	<i>RAI</i>	<i>Full Text (Supporting Information)</i>
			CFR 10) in the event of an inadvertent discovery.” (ESRP 4.1.3)
<b>rCR-19</b>	ESRP 2.5.3, 4.1.3, and 5.1.3  ER 2.5.3  36 CFR 800	Provide information on known or recorded cultural resources along the proposed transmission line corridors.	<p>The construction and operation of transmission lines has the potential to affect historic and cultural resources. Acknowledgement of any effects from the transmission lines needs to be disclosed as part of the review being conducted for the ESP.</p> <p>Applicant needs to supply “a description of properties within the proposed site or within proposed transmission line corridors, access corridors, and offsite areas that are in or eligible for inclusion in the <i>National Register</i> or are included in State or local registers or inventories of historic and archaeological resources. (ESRP 2.5.3, 5.1.3)</p> <p>Applicant needs to supply “a description of historic properties within 16 km (10 mi) of the proposed site or within 2 km (1.2 mi) of proposed transmission line routes, access corridors, and offsite areas that are in or have been determined eligible for inclusion in the <i>National Register</i> or are included in State or local registers or inventories of historic and cultural resources.”</p>

<i>Item Number</i>	<i>ESRP/ER Section</i>	<i>RAI</i>	<i>Full Text (Supporting Information)</i>
			(ESRP 2.5.3, 5.1.3)
<b>Meteorology and Air Quality (MET)</b>			
<b>rMET-09</b>	ESRP 5.8  ER Section 5.8.1.4	Provide information about emission factors of PM2.5.	Under ESRP 5.8, the following data or information should be obtained:  “predicted noise levels and nonradiological air pollutant levels at sensitive areas as identified above (from the ER).”  ER Section 5.8.1.4 describes AERMOD calculation results and provides the emission factor for PM10, but does not provide emissions data for PM2.5. Additional information is needed to clarify how the AERMOD calculation was performed for PM2.5.
<b>Non-Radiological Health (NRH)</b>			
<b>rNRH-01</b>	ESRP 4.4.1  ER 4.4.1.1.2	Provide details on construction worker health (i.e., injury rate) during activities associated with constructing the new reactors and supporting facilities. Provide references for PSEG construction worker injury rates and health and safety plans. Likewise, provide data on construction worker health (i.e., injury rate) during construction of the proposed causeway.	ESRP 4.4.1 - obtain information and data to assess impacts associated with plant construction.  ER Section 4.4.1.1.2 describes the construction activities, number of workers, and skill sets needed for construction of the new plant and the proposed causeway, but does not provide construction worker injury

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			rates. Additional information is needed with regard to PSEG construction worker injury rates and health and safety plans to aid in determining impacts to worker health during construction activities.
<b>rNRH-02</b>	ESRP 5.3.4 ER 4.4.1.1.2	Provide details on industrial hygiene maintenance procedures and monitoring of cooling towers and cooling tower waters for thermophilic microorganisms for potential exposure to on-site workers. Relevant information should include discussions of PPE and procedures for cooling tower maintenance/biocide treatments.	ESRP 5.3.4 – obtain information and data to evaluate human health impacts associated with the plant’s cooling system, including impacts from thermophilic microorganisms.  ER Section 4.4.1.1.2 describes the cooling towers and cooling tower water discharge but does not include PSEG-specific information on maintenance/sampling procedures for thermophilic microorganisms in cooling water towers and associated waters. The ER does not provide industrial hygiene procedures or data on monitoring of cooling water towers or associated water to aid in determining human health impacts. Additional information is needed with regard to monitoring of cooling water towers and associated water to aid in determining impacts to worker health.
<b>rNRH-07</b>	ESRP 5.8.1 and 5.10 ER 5.8.2	Provide data on the incidence rates of worker injuries associated with operation of HCGS and SGS. Provide references for PSEG occupational	ESRP 5.8.1 and 5.10 – obtain information and data to assess impacts associated with plant

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		injury rates and PSEG operational health and safety plans.	<p>operation and evaluate measures and controls to limit adverse impact during plant operation.</p> <p>ER Section 5.8.2 describes the workforce and skill sets needed for plant operation as well as measures and controls to limit adverse impacts, but does not provide PSEG occupational worker injury rates. Additional information on PSEG occupational worker injury rates and health and safety plans is needed to aid in determining impacts to worker health as the result of new plant operation.</p>
<b>rNRH-11</b>	ESRP 9.3 ER 9.3	Provide details on non-radiological health risks as part of the criteria used in identifying and selecting the proposed site and the alternative sites. Provide in detail the assessment of non-radiological health risks for each candidate site.	<p>ESRP 9.3 – obtain data and information needed to evaluate non-radiological health risks as one of the criteria in the site selection process for the new plant.</p> <p>The alternative site evaluation in ER Section 9.3 does not address non-radiological health risks as a criterion in the evaluation of the proposed and alternative sites as part of the site selection process. Information for the assessment of non-radiological health risks for each candidate site is needed.</p>

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<b>Radiological Health (RH)</b>			
<b>rRH-07</b>	ESRP 4.5 10 CFR 20 ER Section 4.5	Provide the list and location of direct radiation sources on the site and the calculation package for how the dose rates to construction workers from direct radiation sources were calculated.	ER Section 4.5 does not explicitly provide a list and location of the direct radiation sources and how the dose rates to construction workers from direct radiation sources were calculated. This information is needed to evaluate the dose to construction workers from direct sources as described in ESRP 4.5.
<b>rRH-08</b>	ESRP 4.5 10 CFR 20 ER Section 4.5	Provide the calculation package for the number and locations of construction worker who would be exposed to the radiation sources at the site and the amount of time per year that they would spend at those locations.	ER Section 4.5 does not explicitly provide the calculations performed to determine the dose to construction workers. This information is needed to evaluate the dose to construction workers as described in ESRP 4.5.
<b>rRH-10</b>	10 CFR 51.45 10 CFR 51.50(b) ESRP 9.3 ER Section 9.3.2	Provide a detailed description of how the radiological health risks were evaluated as a part of the criteria used in identifying and selecting the proposed site and alternative sites.	ER Section 9.3.2 does not explicitly evaluate the radiological health impacts of the alternative sites. An evaluation of the radiological health effects at alternatives sites is needed to compare the proposed and alternative sites on radiological health impacts as described in ESRP 9.3. In particular, explain how environmental and health impact information was used to predict site-specific impacts, and how the impacts were assembled for a site-to-site comparison.

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<b>Accidents (ACC)</b>			
<b>rACC-01</b>	ESRP 7.1 10 CFR 52.71(d) 10 CFR 51.41 ER 7.1.3 Reg. Guide 1.3 and 1.4	Provide the proper meteorological data for the 50th percentile ( $\chi/Q$ values) and revise the associated tables in the ER	As per ESRP 7.1, the NRC staff must ensure that the applicant used a 50th percentile $\chi/Q$ value that was based on onsite meteorological data, or 10% of the levels given in Regulatory Guide 1.3 or Regulatory Guide 1.4, to represent more realistic dispersion conditions than assumed in the safety evaluation.  During the Environmental Site Audit, it was found that some of the meteorological data used to determine the 50th percentile $\chi/Q$ values were incorrect. ER Tables 7.1-38, 7.1-40, 7.1-46, and 7.1-55 need to be revised.
<b>rACC-01a</b>	ESRP 7.1 10 CFR 52.71(d) ER 7.1.3	In ER Table 7.1-5, source term releases for the 2-hour period are not provided. Provide a revised version of ER Table 7.1-5 with an additional column with releases for the 2-hour period.	As per ESRP 7.1, the NRC staff must confirm the dose calculations for the worst 2-hour release; thus, the NRC staff needs to be provided the 2-hour source term releases.  The current siting regulations require an exclusion area of such a size that an individual located for any 2-hour period at the exclusion area boundary would receive a dose that would not be in excess of 0.25 sievert (25 rem) total effective dose equivalent (TEDE).

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<b>rACC-01b</b>	ESRP 7.1  ER 7.1.4	For ER Table 7.1-39, confirm that the DCD Dose calculated for the worst 2-hour release is correct. If it is not correct, provide dose calculations for the worst 2-hour release and provide justification for the calculations.	As per ERSP 7.1 the NRC staff needs to complete dose calculations for the worst 2-hour release; thus, staff needs the 2-hour source term releases. Particularly, the current siting regulations require an exclusion area of such a size that an individual located for any 2-hour period at the exclusion area boundary would receive a dose that would not be in excess of 0.25 sievert (25 rem) total effective dose equivalent (TEDE).
<b>rACC-01c</b>	ESRP 7.1  10 CFR 51.41  ER 7.1	Provide a cross-reference table that links the tables in the PSEG ER with the appropriate tables in the DCD.	Under 10 CFR 51.41, information that may be useful in aiding the NRC in complying with section 102(2) of NEPA may be requested of the applicant.  As discussed during the Environmental Site Audit, the requested table would assist the NRC staff to confirm the proper DCD tables were used to prepare the ER tables.
<b>rACC-02</b>	ESRP 7.2  ER 7.2.2.2  NUREG-0440 NUREG-1437	Revise the list of reservoirs to include two reservoirs in Salem County (Laurel and Elkinton Pan) that do not appear to be considered in the list.	As per ESRP 7.2 the NRC staff must confirm the potential consequences of a liquid-pathway release as presented in NUREG-0440 (NRC 1978) and NUREG-1437 (1996).  A significant portion (about 1/3) of

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			Salem County's drinking water is obtained from water reservoirs.
<b>rACC-03</b>	ESRP 7.2 ER 7.2.1.1	Provide the input and output MACCS2 files used for the severe accident calculations and the calculation package 2009-11222 that describes the input to the calculations.	As per ESRP 7.2 the NRC staff must check the MACCS calculations input and output results and the calculation package. The environmental consequences of severe accidents are estimated using acceptable methodology (such as the MACCS code package; Chanin et al. [1990]).
<b>Transportation (TR)</b>			
<b>rTR-01</b>	ER 5.7.2 10 CFR 51.52(c), Table S-4 ESRP 3.8	Provide an evaluation of the heat load for an irradiated fuel shipment.	Table S-4 of 10 CFR 51.52(c) contains a heat load criterion for irradiated fuel shipments (Heat (per irradiated fuel cask in transit), 250,000 BTU/hr.).
<b>rTR-05a</b>	ER 7.4.1.2 10 CFR 51.52	Provide transportation accident impacts that account for under-reporting in the state-level accident, fatality, and injury rates in ER Reference 7.4-1.	The reactors proposed do not meet all requirements of 10 CFR 51.52(a); therefore, this information is needed to determine compliance with 10 CFR 51.52(b), which requires that: "...the statement shall contain a full description and detailed analysis of the environmental effects of transportation of fuel and wastes to and from the reactor, including values for the environmental impact under

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			<p>normal conditions of transport and for the environmental risk from accidents in transport.”</p> <p>Note: Under-reporting of the state-level accident, injury, and fatality rates is discussed in the Comanche Peak EIS (NUREG-1943), Section 6.2.1.3, pp. 6-21.</p>
<b>rTR-05b</b>	ER 7.4  10 CFR 51.52	Provide a corrected version of ER Table 7.4-3. The crud release fraction for row 7 in ER Table 7.4-3 (page 7.4-9) should be 2.0E-3 (rather than 2.0E-2).	<p>This corrects an error in the ER. (See original reference NUREG/CR-6672, Table 7.31).</p> <p>The reactors proposed do not meet all requirements of 10 CFR 51.52(a); therefore this information is needed to determine compliance with 10 CFR 51.52(b), which requires that: “...the statement shall contain a full description and detailed analysis of the environmental effects of transportation of fuel and wastes to and from the reactor, including values for the environmental impact under normal conditions of transport and for the environmental risk from accidents in transport.”</p>
<b>rTR-06</b>	ER 3.8, 5.7.2, 7.4 and 9.3  ESRP 9.3	Provide a detailed transportation analysis for the four alternative sites identified in the ER: Site 4-1, Site 7-1, Site 7-2, and Site 7-3.	Transportation impacts for the alternative sites are not provided in ER Sections 3.8, 5.7.2, 7.4, or 9.3.

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	10 CFR 51.50(b)		10 CFR 51.50(b)(1) states that “The environmental report must include an evaluation of alternative sites to determine whether there is any obviously superior alternative to the site proposed.”
<b>rTR-08</b>	ER 5.7.2.1.11  10 CFR 51.52, 10 CFR 51.52(c), Table S-4	Provide the number of shipments of unirradiated fuel, irradiated fuel, and radioactive waste normalized to the 1100 MW(e) reference reactor with a capacity factor of 0.8. Also, state and justify the assumptions used in the calculations when determining the aforementioned number of shipments.	<p>The impacts in Table S-4 of 10 CFR 51.52(c) are based on an 1100 MW(e) reactor with a capacity factor of 0.8, and specific container capacities. Normalization of the shipments is needed to compare impacts on an equal basis.</p> <p>The reactors proposed do not meet all requirements of 10 CFR 51.52(a); therefore, this information is needed to determine compliance with 10 CFR 51.52(b), which requires that: “...the statement shall contain a full description and detailed analysis of the environmental effects of transportation of fuel and wastes to and from the reactor, including values for the environmental impact under normal conditions of transport and for the environmental risk from accidents in transport.”</p> <p>When normalizing the shipments, consider for the following:</p>

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			<p>1. Provide the number of unirradiated fuel shipments accounting for the initial core loading.</p> <p>2. Provide the number of irradiated fuel shipments using a shipping container capacity of 0.5 MTU/container.</p> <p>3. Provide the number of radioactive waste shipments using a capacity of 82.6 ft<sup>3</sup>/shipment (2.34 m<sup>3</sup>/shipment).</p>
<b>rTR-09a</b>	<p>ER 5.7.1.8</p> <p>10 CFR 51.52</p> <p>SSAR page 1.3-16</p>	<p>Provide a consistent value for the Plant Parameter Envelope (PPE) value for the capacity factor.</p>	<p>The PSEG Site Safety Analysis Report (SSAR) (page 1.3-16) states that the PPE value for the capacity factor is 0.963; however, ER Table 5.7-1 (page 5.7-17) states that the PPE value for the capacity factor is 0.95.</p> <p>The reactors proposed do not meet all requirements of 10 CFR 51.52(a); therefore, this information is needed to determine compliance with 10 CFR 51.52(b), which requires that: "...the statement shall contain a full description and detailed analysis of the environmental effects of transportation of fuel and wastes to and from the reactor, including values for the environmental impact under normal conditions of transport and for</p>

<i>Item Number</i>	<i>ESRP/ER Section</i>	<i>RAI</i>	<i>Full Text (Supporting Information)</i>
			the environmental risk from accidents in transport.”
<b>rTR-11</b>	ER 5.7.2  10 CFR 51.52	Provide capacity factors for the ABWR, AP1000, US EPR, and US-APWR.	<p>The NRC staff needs this information to determine that the PPE value for the capacity factor used in the transportation analysis is reasonable.</p> <p>10 CFR 51.50(b)(2) states that “The environmental report may address one or more of the environmental effects of construction and operation of a reactor, or reactors, which have design characteristics that fall within the site characteristics and design parameters for the early site permit application, <i>provided however</i>, that the environmental report must address all environmental effects of construction and operation necessary to determine whether there is any obviously superior alternative to the site proposed...”</p> <p>The reactors proposed do not meet all requirements of 10 CFR 51.52(a); therefore, this information is needed to determine compliance with 10 CFR 51.52(b), which requires that: “...the statement shall contain a full description and detailed analysis of the environmental effects of transportation of fuel and wastes to</p>

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			and from the reactor, including values for the environmental impact under normal conditions of transport and for the environmental risk from accidents in transport.”
<b>rTR-12</b>	ER 5.7.2.1.3 ESRP 3.8 10 CFR 51.52 NUREG-1437	Provide revised text in ER Section 5.7.2.1.3, Fuel Enrichment, to reflect NRC’s position that NUREG-1437 can only be used to justify enrichments greater than 4 weight percent for license renewals and cannot be used to justify enrichments greater than 4 weight percent for new reactors.	<p>The reactors proposed do not meet 10 CFR 51.52(a)(2); therefore, this information is needed to determine compliance with 10 CFR 51.52(b) requires that: “...the statement shall contain a full description and detailed analysis of the environmental effects of transportation of fuel and wastes to and from the reactor, including values for the environmental impact under normal conditions of transport and for the environmental risk from accidents in transport.”</p> <p>NUREG-1437 (NRC 1996; NRC 1999) cannot be used as the initial licensing basis for new reactors. See also ESRP 5.7.2, Revision 1, page 5.7.2-3.</p> <p>“...the NRC has generically considered the environmental impacts of spent nuclear fuel with U-235 enrichment levels up to 5% and irradiation levels up to 62,000 megawatt-days per metric ton and found that the environmental impacts</p>

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			<p>of spent nuclear fuel transport are bounded by the impacts listed in Table S-4 provided that more than 5 years has elapsed between removal of the fuel from the reactor and shipment of the fuel offsite (NRC 1996; NRC 1999). <b><u>However, these analyses cannot serve as the initial licensing basis for new reactors.</u></b>” (emphasis added)</p> <p>U.S. Nuclear Regulatory Commission (NRC). 1996. <i>Generic Environmental Impact Statement for License Renewal of Nuclear Plants</i>. NUREG-1437, Washington, D. C.</p> <p>U.S. Nuclear Regulatory Commission (NRC). 1999. <i>Generic Environmental Impact Statement for License Renewal of Nuclear Plants</i>, Main Report, Section 6.3—Transportation, Table 9.1 Summary of findings on NEPA issues for license renewal of nuclear power plants. NUREG-1437 Vol. 1, Addendum 1, Washington, D.C.</p>
<b>rTR-13</b>	ER 5.7.2.1.5 ESRP 3.8 10 CFR 51.52	Provide revised text in ER Section 5.7.2.1.5, Average Fuel Burnup, to reflect NRC’s position that NUREG-1437 can only be used to justify burnups greater than 33,000 MWd/MTU for license renewals and cannot be used to justify burnups	Full Text (Supporting Information) is identical to that for rTR-13 (immediately above).

<i>Item Number</i>	<i>ESRP/ER Section</i>	<i>RAI</i>	<i>Full Text (Supporting Information)</i>
	NUREG-1437	greater than 33,000 MWd/MTU for new reactors.	
<b>rTR-14</b>	ER 7.4  10 CFR 51.50 and 51.52	Provide radionuclide inventories (Ci/MTU) for the ABWR, AP1000, and US EPR.	<p>The NRC staff needs additional information to determine that the PPE value for the radionuclide inventory, which is based on the US-APWR, used in the transportation analysis in ER Table 7.4-2 (page 7.4-8) is reasonable.</p> <p>10 CFR 51.50(b)(2) “The environmental report may address one or more of the environmental effects of construction and operation of a reactor, or reactors, which have design characteristics that fall within the site characteristics and design parameters for the early site permit application, <i>provided however</i>, that the environmental report must address all environmental effects of construction and operation necessary to determine whether there is any obviously superior alternative to the site proposed...”</p> <p>The reactors proposed do not meet all requirements of 10 CFR 51.52(a); therefore, 10 CFR 51.52(b) requires that: “...the statement shall contain a full description and detailed analysis of</p>

<i>Item Number</i>	<i>ESRP/ER Section</i>	<i>RAI</i>	<i>Full Text (Supporting Information)</i>
			the environmental effects of transportation of fuel and wastes to and from the reactor, including values for the environmental impact under normal conditions of transport and for the environmental risk from accidents in transport.”
<b>Need for Power (NP)</b>			
<b>rNP-01</b>	10 CFR 51.71(d)  ESRP 8.0	<p>Provide an expanded rationale for choosing the state of New Jersey as the relevant service area (RSA) and demonstrate that there are no planned capacity expansions near New Jersey that would invalidate this conclusion. Expand the discussion of stability needs and other needs to strengthen the rationale for choosing New Jersey as the RSA.</p> <p>Also, provide a detailed description of the following:</p> <p>(1) whether (and how) S-2381 is a factor in the need for power analysis;</p> <p>(2) whether New Jersey issues certificates of convenience and necessity for deregulated merchant power vendors. If so, describe the process; and</p> <p>(3) whether (and how) the potential decommissioning of Oyster Creek in 2019 would influence the need for power analysis.</p>	<p>10 CFR 51.71(d) charges the NRC staff with independently evaluating and being responsible for the reliability of information in the draft EIS. The staff needs to confirm the following information below in preparing the EIS.</p> <p>The key assumption behind the need for power analysis is that baseload power produced in New Jersey is inadequate to meet baseload demands in New Jersey. Traditionally, New Jersey has imported power to offset in-state shortfalls. The desirability of reducing import shares should be documented fully.</p>
<b>rNP-02</b>	10 CFR 51.71(d)	ER Section 8.1 suggests that the bulk of the power	Because the proposed generator

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	ESRP 8.1 ER Section 8.1	produced by the proposed facility would be sold into wholesale power markets serving New Jersey. Expand the appropriate ER sections to discuss the nature of the wholesale markets and to explain how the various power markets interact.	would sell power into the wholesale market, it is necessary to describe the market process and why the new facility would compete favorably in these markets
<b>rNP-03</b>	10 CFR 51.71(d) ESRP 8.2.2	Provide written validation that the load forecasts used in the ER are systematic, comprehensive, subject to confirmation, and responsive to uncertainty.	To meet the requirements of ESRP 8.2.2 that the need for power evaluation must “validate that load forecasts are systematic, comprehensive, subject to confirmation, and responsive to uncertainty.” This validation should be consolidated and focused on specific criteria, and should address each requirement explicitly.
<b>rNP-04</b>	10 CFR 51.71(d) ESRP 8.2.2 ER Chapter 8.0	The forecasting process used by PJM seems to be the basis of the forecasts developed for New Jersey, but this linkage is not stated explicitly in ER Chapter 8. Provide written validation.	To the extent that the PJM forecasting process is the basis of the forecasts, ESRP 8.2.2 criteria should be referenced to the PJM forecasting process. Providing the validation of load forecasts requested in Item rNP-03 would satisfy this request.
<b>rNP-05</b>	10 CFR 51.71(d) ESRP 8.2.2 ER Chapter 8.0	Provide revised text for ER Chapter 8 that discusses the various load reduction programs available as an alternative to new generation or explains why they are not considered in the ER. The revised text should describe these activities (including energy efficiency programs and various other programs intended to shape loads, such as the auctions used for this purpose) and the manner in which estimates	ER Chapter 8 recognizes the importance of energy efficiency programs and various other programs intended to shape loads. ER Chapter 8 also recognizes New Jersey’s <i>Energy Master Plan</i> and activities through New Jersey’s Clean Energy Program. However, the most recent

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		of reductions in loads due to these activities are captured in the forecasts. Also, the revised text should discuss the role of conservation and related activities in reducing loads and the influence of load reduction on the need for power. The revised text should draw together all relevant data; the current ER discussion addresses only current baseload capacity, forecasted baseload capacity, and forecasted baseload demand.	update to New Jersey's <i>Energy Master Plan</i> was completed after ER Chapter 8 was prepared.
<b>rNP-08</b>	10 CFR 51.71(d)  ESRP 8.2.1-2	Provide a revised version of the ER Chapter 8 Need for Power analysis using the most current data available.	The data used in the ER Chapter 8 Need for Power analysis are not current and should be updated to reflect new information.
<b>Alternatives (ALT)</b>			
<b>rALT-02</b>	ESRP 9.2.3  10 CFR 51.71(d) and 10 CFR 51, Appendix A to Subpart A  ER Section 9.2.3.2.2, ER Table 9.2-2	Provide additional information on the basis for the numerical entries in ER Table 9.2-2 regarding the emissions of SO <sub>2</sub> and PM from an NGCC Advanced F Class power generation facility. In particular, demonstrate how these numerical values were derived and provide the source of the data used to derive the values.	Under ESRP 9.2.3, NRC staff need to ensure that competitive alternative energy sources are described in sufficient detail to enable an effective analysis of the environmental and human health impacts.  The text in ER Section 9.2.3.2.2 indicates that the numerical entries in ER Table 9.2-2 were derived from those in NUREG-1437; however, the entries in NUREG-1437 show "negligible" for NGCC emissions of SO <sub>2</sub> and PM. Therefore, additional clarification as to the origin of the numerical values for NGCC for SO <sub>2</sub>

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			and PM in ER Table 9.2-2 is requested.
<b>rALT-04</b>	ESRP 9.2.3  10 CFR 51.71(d) and 10 CFR 51, Appendix A to Subpart A  ER Section 9.2.3	Provide clarification as to whether the evaluation of competitive energy alternatives in ER Section 9.2.3 (1) assumed the same transmission lines for the competitive alternatives as for the nuclear plant and (2) assumed the same cooling system for the competitive alternatives as for the nuclear plant. If such similar assumptions were not made, provide an updated analysis and an updated set of impact levels that include consideration of transmission lines and cooling water systems for each of the competitive energy alternatives.	Under ESRP 9.2.3, NRC staff need to ensure that competitive alternative energy sources are described in sufficient detail to enable an effective analysis of the environmental and human health impacts.  Clarification is requested as to whether the evaluation of competitive energy alternatives in ER Section 9.2.3 included similar sets of assumptions for each of the competitive energy alternatives as for the nuclear plant.
<b>rALT-09</b>	ESRPs 9.2.2 and 9.2.3  10 CFR 51.71(d) and 10 CFR 51, Appendix A to Subpart A  ER Section 9.2.2.6.2 and 9.2.2.6.3	Provide clarification as to the basis or source of the breakdown of the 240MW from biomass that is attributed to urban wood and secondary mill residues (150 MWe) as discussed in ER Section 9.2.2.6.2 and to methane from landfills and wastewater treatment (70 MWe) as discussed in ER Section 9.2.2.6.3.	Under ESRP 9.2.2 and 9.2.3, NRC staff need to ensure that competitive alternative energy sources are described in sufficient detail to enable an effective analysis of the environmental and human health impacts.  Numerical data are presented in ER Sections 9.2.2.6.2 and 9.2.2.6.3 for the amounts of energy available from biomass resources; however, no explanation or basis for these numerical data is presented. Additional discussion on the origin

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			and validity of these numbers is requested. The explanation should include any assumptions that were made that are important to the derived values.
<b>rALT-12</b>	<p>ESRPs 9.2.1, 9.2.2, and 9.2.3</p> <p>10 CFR 51.71(d) and 10 CFR 51, Appendix A to Subpart A</p> <p>Flanders Memo ML110380369</p> <p>ER Section 9.2.3.2</p>	For the combinations of energy alternatives described in ER Section 9.2.3.2, provide a numerical estimate of the atmospheric emissions, including carbon dioxide, generated by each of the combined energy alternatives.	<p>Under ESRP 9.2.1, 9.2.2, and 9.2.3, NRC staff need to ensure that competitive alternative energy sources are described in sufficient detail to enable an effective analysis of the environmental and human health impacts.</p> <p>The analysis must evaluate “competitive” and “feasible” alternatives, as well as combinations of alternatives. Provide an analysis that enables staff to evaluate the atmospheric emissions of each of the combinations of energy alternatives described in ER Section 9.2.3.3. Air emissions data similar to that in ER Table 9.2-2 is requested. Include the basis for the numerical data and the sources used to derive the values.</p>
<b>rALT-13</b>	<p>Reg. Guide 4.2, Section 9.3</p> <p>ESRP 9.3</p> <p>10 CFR 51.50(b)</p>	Provide an explanation of the origin and basis for the value 35,000 gpm as the water withdrawal requirement that was used in the alternative site selection process. The explanation should include a discussion of the implications of this value in light of the larger value (i.e., 78,196 gpm) that was used	Under Regulatory Guide 4.2, Section 9.3, the availability of adequate water supplies is a valid criterion for the identification of alternative sites. ER Section 9.3.1 specifies 35,000 gpm as the minimum make-up water

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	ER Section 9.3.2	in the evaluation of each alternative site in ER Section 9.3.2.	requirement for a new nuclear plant, and this value was apparently used in PSEG’s site selection process. However, a larger numerical value (i.e., 78,196 gpm) is used in the subsequent evaluations of each of the four candidate sites in ER Section 9.3.2. A discussion is requested on the implications of this difference in numerical values and, in particular, how the site selection process would have been altered (if at all) by the use of a number significantly larger than the 35,000 gpm given in ER Section 9.3.1.
<b>rALT-14</b>	ESRPs 9.2.3 and 9.3  Reg. Guide 4.2, Section 9.2.1  10 CFR 51.71  ER Section 9.3.1.3	Provide a more detailed explanation than the one contained in ER Section 9.3.1.3 (and in the March 2010 <i>Alternative Site Evaluation Study</i> ) on how the list of “potential sites” was derived from within the identified candidate areas. Additional information is requested on the specific selection criteria that were used and how those criteria were applied in the site selection process.	Under ESRP 9.2.3 and 9.3, candidate sites should “be among the best that can reasonably be found for the siting of a nuclear power plant.”  Under Reg. Guide 4.2, Section 9.2.1, “candidate sites must be realistic siting options, potentially licensable, and capable of being developed.”  The alternative site selection process should follow a clear and defensible process to determine the final alternative sites and the proposed site. The analysis performed on the four alternative sites to determine the proposed PSEG site appears to be

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			<p>logical; however, it is not clear how the candidate areas were screened to provide the list of potential sites. A clear explanation of the site screening process is needed to allow the staff to reach a conclusion as to whether this part of the process was logical and would reasonably be expected to produce a list of the best potential sites within the candidate areas.</p>
<p><b>rALT-21</b></p>	<p>Reg. Guides 4.2 and 4.7  10 CFR 51.45  Flanders Memo ML110380369  ER Chapters 4, 5 Section 9.3</p>	<p>For the proposed site evaluated in ER Chapters 4 and 5, as well as for <u>each</u> of the four alternative sites evaluated in ER Section 9.3, provide a list and a map of nearby existing or proposed projects and activities that could potentially contribute to cumulative impacts if a new nuclear power plant were to be constructed at that site.</p> <p>The list should include: the type of project or activity, its distance from the proposed or alternative site, its status (e.g., if it is a <u>proposed</u> project or activity), the time frame during which it could create cumulative impacts, and the cited reference from which this information was obtained. The list should include such items as energy projects, transportation projects, parks and other recreational area developments, nearby sources of air emissions, future urbanization, planned residential or industrial developments, and industries that use radioactive materials.</p> <p>For the proposed site and for each of the four</p>	<p>To assist the NRC staff in fulfilling its obligations under the National Environmental Policy Act (NEPA) to consider the cumulative effects of the proposed action and alternatives, PSEG is requested to identify and describe the nearby existing or proposed projects and activities—including actions from any identified private enterprises, and federal, state, tribal, and municipal agencies—that were specifically included in its evaluation of cumulative impact levels for the proposed PSEG site. In addition, provide a discussion on the cumulative impacts of nearby projects and activities for <u>each</u> of the four alternative sites that are evaluated in ER Section 9.3.</p> <p>A detailed list and a map of such projects and activities are requested to</p>

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		alternative sites, and for each affected resource category, provide additional information on the potential cumulative impacts of these nearby existing/proposed projects and activities.	serve as the basis for the evaluation of cumulative impacts.
<b>rALT-25</b>	ESRP 9.4.2 ER 5.3.1	Provide a description of alternative water supplies for the proposed plant. Provide documentation of the evaluation of Salem City water as a source for cooling water.	Under ESRP 9.4.2, The ER contains no description of alternative water supplies for the proposed plant.
<b>rALT-30</b>	ESRPs 9.2.1, 9.2.2, and 9.2.3  10 CFR 51.71(d) and 10 CFR 51, Appendix A to Subpart A  ER Sections 9.2.1.3 and 9.2.1.4	Provide additional clarification and details on the basis for the statement in ER Sections 9.2.1.3 and 9.2.1.4 that the alternative of importing power from outside New Jersey is “undesirable.” If this alternative is not feasible, provide an explanation as to the basis for such a conclusion. If this alternative is feasible, provide additional details on the associated environmental impacts of such imported power.  Also, provide a discussion of PSE&G’s proposed Susquehanna-Roseland Power Line Project, which would connect Berwick, Pennsylvania, to Roseland, New Jersey, and the extent to which any such new transmission lines would affect the analyses in ER Sections 9.2.1.3 and 9.2.1.4 regarding the alternative of importing power into New Jersey. Include a discussion of the potential impacts and implications of the proposed Susquehanna-Roseland Power Line Project.	Under ESRP 9.2.1, 9.2.2, and 9.2.3, NRC staff need to consider whether any alternatives identified in the application are both feasible and competitive for supplying the electrical generating capacity proposed in the application.  ER Section 9.2.1.3 identifies power that is available from outside the state of New Jersey; however, the ER dismisses this alternative as “undesirable” without further elaboration as to whether this alternative is feasible and/or competitive.
<b>rALT-33</b>	Reg. Guides 4.2 and 4.7	Provide additional information and an explanation of how the various impact levels from ER Chapters	To assist the NRC staff in fulfilling its obligations under NEPA to

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	ESRPs 4.7 and 5.7  10 CFR 51.45  ER Chapters 4, 5, and Section 10.5	4 and 5 were aggregated and combined with other cumulative impacts to arrive at the impact levels as reported in ER Section 10.5.	consider the cumulative effects of the proposed action and the alternatives, PSEG is requested to submit a discussion on how the ER included the cumulative effects of construction and operation of a new nuclear plant at the PSEG site, including actions from any identified private enterprises, and federal, state, tribal, and municipal agencies.
<b>rALT-34</b>	ESRP 9.4.2  10 CFR 51.71  ER Section 9.4.2.1.1	Provide additional information and details for the alternative intake designs (i.e., other than the proposed intake flow velocity cap) that are discussed in ER Section 9.4.2.1.1. Specifically, provide (1) a description of all alternatives for the intake system considered, and (2) a description of the bases used to reject alternatives other than the proposed intake system.	ER Section 9.4.2.1 describes the alternative intake systems for a new nuclear plant at the PSEG site. The NRC staff needs the requested information to have a complete understanding of all alternatives that were considered and the bases for why some alternatives were rejected (as per ESRP 9.4.2).
<b>rALT-35</b>	Reg. Guide 4.2  ESRPs 3.7 and 9.4.3  ER Chapters 4, 5 and 10	Regarding the report <i>GIS Analysis of Potential Off-Site Transmission Macro-Corridors</i> (see rTL-03) that was developed and used to evaluate the potential impacts of the two proposed off-site transmission lines, provide an explanation on how the impacts described in the report were incorporated into the analyses in ER Chapters 4, 5, and 10. The response should explain, among other things, whether the impacts reported in the ER represent the Southern route, the Western route, or some combination of the two transmission line routes. Also, describe the extent of any planned	Under ESRP 3.7 and 9.4.3, NRC staff need to evaluate whether the data on the power transmission system are sufficient to describe the system and provide qualitative and quantitative information necessary to assess potential impacts to land use, terrestrial and aquatic ecosystems, and man.  The applicant has conducted a study of alternate routings for transmission

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		transmission routing and corridor widening activities.	lines to the proposed site: <i>GIS Analysis of Potential Off-Site Transmission Macro-Corridors</i> . The staff needs the requested information to evaluate the potential impacts identified in Reg. Guide 4.2 and ESRPs 3.7 and 9.4.3.
<b>rALT-36</b>	Reg. Guide 4.7, A.7.2  10 CFR 51.70 (b)	Provide information about the ability to obtain the necessary permit(s) to withdraw water in the amounts required at Alternative Site 4-1. That is, explain the basis for the assumption that permits and the associated water rights can be obtained. Explain the relationship of water impounded in Merrill Creek Reservoir to the availability and obtainability of water for use at Site 4-1.	Under Reg. Guide 4.7, A.7.2:  “To evaluate the suitability of a site, there must a reasonable assurance that permits for water use and for water consumption in the quantities needed for a nuclear power plant of the stated approximate capacity and type of cooling system can be obtained by the applicant from the appropriate State, local, or regional agency.”  The requested information is needed to assist the staff in determining whether reasonable assurance exists in regard to adequate water supplies at Site 4-1.
<b>rALT-38</b>	Reg. Guides 4.2 and 4.7  ESRP 3.7, 9.3, and 9.4.3  10 CFR 51.45  ER Section 9.3.2.1	Provide an analysis to describe how, if at all, PSE&G’s North Central Reliability Project and the proposed Susquehanna-Roseland Power Line Project would change the potential environmental impacts described in ER Section 9.3.2.1 for Alternative Site 4-1 in Hunterdon County, New Jersey.	Under ESRP 3.7 and 9.4.3, NRC staff need to evaluate whether the data on the power transmission system are sufficient to describe the system and provide qualitative and quantitative information necessary to assess potential impacts to land use,

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		<p>Provide a discussion of the potential impacts and implications for Alternative Site 4-1 that would be associated with PSE&amp;G’s North Central Reliability Project to be constructed in New Jersey through West Orange, Livingston, Roseland, Florham Park, Chatam Borough, Chatam Township, New Providence, Berkeley Heights, Watchung, Scotch Plains, Fanwood, Clark, Edison, Metuchen and Woodbridge.</p> <p>Also, provide a discussion of the potential impacts and implications for Alternative Site 4-1 of the proposed Susquehanna-Roseland Power Line Project, which would connect Berwick, Pennsylvania, to Roseland, New Jersey.</p> <p>The discussion should address how (if at all) the existence of these new transmission lines would affect: (1) the feasibility, suitability and/or desirability of Site 4-1; (2) the potential environmental impacts for Site 4-1 as described in ER Section 9.3.2.1 et seq., and; (3) the cumulative effects of construction and operation of the proposed nearby transmission lines on Site 4-1.</p>	<p>terrestrial and aquatic ecosystems, and man.</p> <p>The staff needs the requested information to evaluate the potential impacts identified in Reg. Guide 4.2 and ESRPs 3.7, 9.3, and 9.4.3, and to fulfill its obligations under NEPA to consider the effects of the proposed action and alternatives, including cumulative effects.</p>
<b>Non-Radiological Waste (NRW)</b>			
<b>rNRW-01</b>	ESRP 5.5.1  ER 4.0	Provide a detailed description of the generation, handling, and disposal of non-radioactive waste generated during building activities for the proposed new plant and causeway, including the waste types, waste destinations (on- and offsite disposition), and	ESRP 5.5.1 – NRC staff need to assess environmental impacts of non-radiological waste including disposal/disposition of wastes.

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		waste management/mitigation measures.	ER Chapter 4.0 discusses the types and volumes of non-rad waste generated during construction of the proposed new plant and proposed causeway. However, additional information is needed on the disposition of non-radiological waste types, whether recycled or disposed off-site, to assess cumulative impacts of construction activities of the proposed new plant and causeway in the region of interest.
<b>rNRW-02</b>	ESRP 5.5.1 ER 5.5	Provide a detailed description of the generation, handling, and disposal of non-radioactive waste generated during operation of the proposed new plant, including the waste types, waste destinations (on- and offsite disposition), and waste management/mitigation measures. Provide existing PSEG non-radiological waste handling, minimization, and disposition procedures.	ESRP 5.5.1 – NRC staff need to assess environmental impacts of non-radiological waste including disposal/disposition of wastes.  ER Section 5.5 discusses the types and volumes of non-radiological waste generated during operation of the proposed new plant. Additional information is needed on the disposition of non-rad waste types, whether recycled or disposed off-site, to assess cumulative impacts of operation of the proposed new plant in the region of interest.