

## **PSEGESPEnveRAIPEm Resource**

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**From:** Fetter, Allen  
**Sent:** Friday, August 31, 2012 10:19 AM  
**To:** PSEGRAIResponses@pseg.com  
**Cc:** PSEGESPEnveRAIPEm Resource; Robillard, David L; Mallon, James; Hsia, Anthony; Silvia, Andrea; Saulsbury, James; Zimmerman, Gregory P.  
**Subject:** PSEG Site ESPA Final RAI Env-14 (eRAI\_6742)  
**Attachments:** PSEG Site ESPA Final RAI Env-14 (eRAI\_6742).pdf

Please find attached RAI Env-14 for the PSEG Site ESP Application. The Env-14 RAI is an aggregate of the rALT draft RAIs that were provided to you on July 20, 2012 as part of a complete table of draft RAIs. At your request, a clarification discussion of rALT-14, rALT-21, rALT-34, rALT-38 was held on August 14, 2012. A 45 day response time was requested for rALT-21, which was accepted. Minor edits were made to rALT-34 to make it technically correct. No other changes are necessary; hence we are issuing this RAI as final.

The schedule we have established to the review of your application assumes technically correct and complete responses within 30 calendar days of receipt of RAIs. For any RAIs that cannot be responded to within 30 calendar days (except for rALT-21), it is expected that a date for receipt of this information will be provided to the staff within the 30-day period so that the staff can assess how this information might impact the published schedule.

Please contact me if you have any questions.

Allen H. Fetter, Project Manager  
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**From:** Fetter, Allen

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**Request for Additional Information Env-14**

Issue Date: 8/31/2012

Application Title: PSEG Site ESP Environmental Review - Docket 52-043

Operating Company: PSEG Power LLC, PSEG Nuclear LLC

Docket No. 52-043

Review Section: ESP EIS 9.0 - Environmental Impacts of Alternatives

Application Section: ER

**QUESTIONS**

**ESP EIS 9.0-1**

rALT-02: 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.

Supporting Information: 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> and PM in ER Table 9.2-2 is requested.

**ESP EIS 9.0-2**

rALT-04: 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.

Supporting Information: 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.

**ESP EIS 9.0-3**

rALT-09: 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.

Supporting Information: 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 and validity of these numbers is requested. The explanation should include any assumptions that were made that are important to the derived values.

#### ESP EIS 9.0-4

rALT-12: 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.

Supporting Information: 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.

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.

#### ESP EIS 9.0-5

rALT-13: 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 in the evaluation of each alternative site in ER Section 9.3.2.

Supporting Information: 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 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.

#### ESP EIS 9.0-6

rALT-14: Provide a more detailed explanation than the one contained in ER Section 9.3.1.3 (and in the March 2010 *Alternative Site Evaluation Study*) 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.

Supporting Information: 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 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.

#### ESP EIS 9.0-7

rALT-21: For the proposed site evaluated in ER Chapters 4 and 5, as well as for each 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.

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 proposed 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.

For the proposed site and for each of the four alternative sites, and for each affected resource category, provide additional information on the potential cumulative impacts of these nearby existing/proposed projects and activities.

Supporting Information: 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 each of the four alternative sites that are evaluated in ER Section 9.3.

A detailed list and a map of such projects and activities are requested to serve as the basis for the evaluation of cumulative impacts.

#### ESP EIS 9.0-8

rALT-25: 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.

Supporting Information: Under ESRP 9.4.2, The ER contains no description of alternative water supplies for the proposed plant.

#### ESP EIS 9.0-9

rALT-30: 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.

Supporting Information: 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.

#### ESP EIS 9.0-10

rALT-33: Provide additional information and an explanation of how the various impact levels from ER Chapters 4 and 5 were aggregated and combined with other cumulative impacts to arrive at the impact levels as reported in ER Section 10.5.

Supporting Information: To assist the NRC staff in fulfilling its obligations under NEPA to 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.

#### ESP EIS 9.0-11

rALT-34: Provide additional information and details for the alternative intake designs (i.e., other than the intake flow velocity cap design) 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.

Supporting Information: 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).

#### ESP EIS 9.0-12

rALT-35: Regarding the report *GIS Analysis of Potential Off-Site Transmission Macro-Corridors* (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 transmission routing and corridor widening activities.

Supporting Information: 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 lines to the proposed site: *GIS Analysis of Potential Off-Site Transmission Macro-Corridors*. 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.

#### ESP EIS 9.0-13

rALT-36: 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.

Supporting Information: 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.

#### ESP EIS 9.0-14

rALT-38: 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.

Provide a discussion of the potential impacts and implications for Alternative Site 4-1 that would be associated with PSE&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.

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. 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.

Supporting Information: 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 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.