

April 30, 2010

MEMORANDUM TO: Gregory Hatchett, Branch Chief  
Environmental Projects Branch 1  
Division of Site and Environmental Reviews  
Office of New Reactors

FROM: Brent Clayton, Branch Chief **/RA Harriet Nash for/**  
Environmental Technical Support Branch  
Division of Site and Environmental Reviews  
Office of New Reactors

SUBJECT: TRIP REPORT – APRIL 12-15, 2010, READINESS  
ASSESSMENT (C-3) VISIT FOR A FUTURE EARLY SITE  
PERMIT APPLICATION AT THE PUBLIC SERVICE  
ENTERPRISE GROUP NUCLEAR SITE

Public Service Enterprise Group (PSEG) has indicated its intent to submit an early site permit (ESP) application on or before May 28, 2010. This report summarizes the pre-application readiness assessment (C-3) activity by the U.S. Nuclear Regulatory Commission (NRC) staff on April 12-15, 2010, related to the environmental portion of a future ESP application for the PSEG nuclear site (formerly called the Salem/Hope Creek site) near Salem, New Jersey. The purposes of this visit were to assess the applicant's readiness and to familiarize the NRC staff with the applicant's environmental report (ER).

PSEG delivered an overview presentation providing a status update since the C-2 activity in October 2009. PSEG still does not plan to submit a request for a limited work authorization with the ESP application. A decision of whether or not to build a new plant has not yet been made. Likewise, the reactor technology has not been determined yet, and therefore, the application will be prepared with a plant parameter envelope (PPE). The PPE will be described in the safety portion of the application and may not be duplicated in the ER so all members of the environmental review team should be directed appropriately to find necessary PPE details for inclusion in their review. For each alternative site, the applicant has considered the actual locations of onsite buildings as well as potential routes for pipelines and transmission lines (including grid stability lines that may or may not be needed at the proposed and alternative sites, dependent on future PJM Interconnection grid congestion analyses).

Enclosure 1 provides a list of attendees. Enclosure 2 is the agenda used during the visit. Enclosure 3 is a summary of the more significant issues that were discussed. Note that this assessment was conducted only six weeks prior to the applicant's planned ESP application date as a result of NRC workload shifts; therefore, the staff does not expect the applicant to be able to address all issues by the time the application is submitted.

CONTACT: Harriet Nash, NRO /DSER  
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The staff emphasized potential acceptance issues and also communicated to the applicant that remaining issues identified could likely be resolved with requests for additional information during the review process if the application is accepted. Based on data collection and discussions to date, PSEG appears to be on track to submit a complete ESP application on May 28, 2010.

The public outreach meeting (C-4) will occur on May 6, 2010.

Project No. 777

Enclosures:  
As Stated

G. Hatchett

-2-

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Project No. 777

Enclosures:  
As Stated

DISTRIBUTION:

PUBLIC

RidsNroDserRap2

RidsNroDserRenv

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**ADAMS ACCESSION NUMBER:** ML101180344

**NRO-002**

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NAME	HNash/RA/	A Redden/RA/	BClayton/RA Harriet Nash for/
DATE	04 / 29 /10	04 / 29 /10	4/ 30 /10

**OFFICAL RECORD COPY**

**LIST OF ATTENDEES: PSEG Readiness Assessment C3**

<b>Name</b>	<b>Organization</b>
Janosko, Gary	PSEG
Mallon, Jamie	PSEG
Pantazes, Jeff	PSEG
Robillard, Dave	PSEG
Ruf, Gary	PSEG
Strait, Ken	PSEG
Wiwel, Mike	PSEG
Krause, Tim	Sargent & Lundy
Shervin, Mike	Sargent & Lundy
Elzinga, Bill	MACTEC
Criscenzo, Steve	MACTEC
Derickson, Ken	MACTEC
McCord, Sam	MACTEC
Stumne, Steve	MACTEC
Ingram, Wayne	MACTEC
Bretton, Nelson	MACTEC
Barnhurst, Dan	NRC
Cushing, Jack	NRC
Nash, Harriet	NRC
Mussatti, Dan	NRC
Masnik, Mike	NRC
Caverly, Jill	NRC
Emch, Rich	NRC
Dozier, Tami	NRC
Fetter, Allen	NRC
Anderson, Tom	PNNL
Fayer, Mike	PNNL
Hickey, Eva Eckert	PNNL
Ward, Jeff	PNNL
Klaus, Keith	BNL
Hauptmann, Mike	BNL

## **ER Page-Turner Pre-Application Visit Agenda**

### **Tuesday, April 13, 2010**

8:00 a.m. to 5:00 p.m. – Briefing and status update from PSEG; NRC teams read ER

### **Wednesday, April 14, 2010**

8:00 a.m. to 5:00 p.m. – Continue reading as necessary; discuss with applicant teams

### **Thursday, April 15, 2010**

8:00 a.m. to 12:00 noon – Finish team discussions; close-out meeting

**Meeting location:** Morgan Lewis office; 1111 Pennsylvania Ave., NW; 10-minute walk from Metro Center stop on red line (bring photo ID for entry). Directions:

<http://www.morganlewis.com/index.cfm/nodeID/92d168e1-7332-486a-8f61-9b5cafb344e7/officeID/E1F8EC17-8B71-4A23-833E-10B4881EFAB9/fuseaction/office.directions>

### **Monday, April 12, 2010**

**9:00 a.m. to 6:00 p.m.**

Tami Dozier and Allen Fetter meet with applicant  
Rich Emch only: read ER sections  
PNNL travel day

### **Tuesday, April 13, 2010 (Lunch provided; bring money)**

**8:00 a.m. to 9:00 a.m.**

**Meet at Morgan Lewis for overview presentation on status of application**

- Welcome and Introductions
- Opening Remarks – NRC Team Lead and PSEG Nuclear Development Executive Director
- Overview on application status

**9:00 a.m. to 5:00 p.m. – NRC/PNNL teams read ER sections  
(start discussions with applicant if time permits)**

**1:00 p.m. to 5:00 p.m. – Rich Emch discussion with PSEG counterpart**

### **Wednesday, April 14, 2010 (Lunch provided; bring money)**

**8:00 a.m. to 5:00 p.m. – NRC/PNNL teams continue reading as necessary; team discussions with applicant**

### **Thursday, April 15, 2010**

**8:00 a.m. to 11:00 a.m. – Wrap up team discussions with applicant; brief Harriet or Eva as teams conclude discussions**

**11:00 a.m. to 12:00 noon – Close-out discussion/meeting with applicant**

## **Summary of Issues and Concerns**

The team's primary concern was related to the alignment of the need for power with the region of interest for the site-selection process as discussed below. Some information, such as the plant parameter envelope (PPE) details, ecological data, and meteorological data, is provided in the site safety analysis report (SSAR) but not in the environmental report (ER); suggestions were made to include such information in the ER or at least a notation in the ER referring the reader to the specific location in the SSAR of the information. The staff's preference is for the ER to be a stand-alone document.

### **Land Use**

The land use discussion in the ER was generally complete. Discussions verified that the information on the wetland mitigation plan and the locations of land to be swapped would be provided by the applicant as they become available. Discussions were held regarding the potential for additional transmission lines for grid stability. It was not clear that the information provided for the longer transmission line macro corridor was bounding for the shorter transmission line macro corridor. An additional explanation in the ER is recommended for the additional transmission lines.

### **Hydrology**

PSEG owns 6,695 acre-feet of stored water in Merrill Creek Reservoir. This is enough water to satisfy the requirements for the existing plant and the requirement for the new plant if it is any reactor but the AP1000. If the AP1000 is chosen, the applicant wants to build two units, and the consumptive use of the two plants would exceed PSEG's allocation (from the Delaware River Basin Commission). The applicant stated that it has several options – it could run the AP1000 units at less than full power, reduce power production at another plant (e.g., an upstream coal plant), or buy additional water storage. Regarding presentation of the issue in the Early Site Permit application, it was discussed that the applicant could explicitly state that it would remain within their allocation (and explain how) or identify the need to increase storage to accommodate two AP1000s.

Groundwater data analysis needs an explanation to address the high frequency changes in groundwater levels resulting from the tidal changes, which can alter gradients and flow directions. An explanation about tritium leaks at existing units and sampling was discussed for inclusion in the radiological section with a mention of it also in the water quality section.

### **Ecology**

Information was not available regarding the concentrations of blowdown constituents, the dredging plan, spoils disposal location, dredging impacts, appropriate descriptions of intake and discharge (including fish-return system, if applicable), thermal recirculation with existing units, detailed ecological impacts from causeway construction and operation, and ecological descriptions (species, ponds, streams, and intake/discharge locations) at alternative sites. Most of the available information is sufficient for the acceptance review and could likely be resolved with requests for additional information.

## **Socioeconomics/Environmental Justice/Cost-Benefit**

Discussions with the applicant indicated that the environmental justice (EJ) maps for the preferred site would benefit by the inclusion of major roads and highways to assist the reader's orientation to the data. For comparative purposes, EJ maps for all alternative sites are needed.

Discussions on the economic multipliers listed in Chapter 10 were suggested to also be in Chapters 4 & 5 to support the impact analyses included in those chapters. The ER could use more justification for conclusions. As noted elsewhere, all conclusion statements should be prefaced with a logical presentation of the data supporting the conclusion.

## **Cultural Resources**

The information provided in the ER was generally acceptable. The one area that was not adequately addressed is the reconnaissance-level information in Chapter 9 related to cultural resource information necessary to draw appropriate conclusions for alternative sites and cumulative impacts for alternative sites.

## **Need For Power**

Discussions were held between the staff and the applicant regarding the regional service area (RSA) being larger than the region of interest (ROI). ESRP 9.3 requires that the evaluation of the ROI determine “(3) *whether the ROI is consistent with the major load centers to be supplied by the proposed plant. As a general rule, the plant should be located at a site in the area of the load center or centers that the plant is to serve over its lifetime. The reviewer should determine if the selected ROI will permit such siting and that potentially desirable candidate areas have not been excluded on the basis of an arbitrarily defined ROI.*” The identification of the RSA with areas outside of New Jersey (e.g. PA, DE, and MD, parts of the traditional Eastern Mid- Atlantic Area Council in the Need for Power section conflicts with the ROI of only New Jersey utilized in the identification of alternative sites. Additional clarification in the ER is needed.

## **Radiological Environment**

The discussion focused on clarifying descriptions of the methods used to estimate the radiation doses to construction workers, the impact of the mid-2008 15-percent power uprate at Hope Creek Generating Station on estimates of construction worker doses, Table 4.5-11, methods used to estimate radiation doses from normal operations, direct radiation doses during operation (including that from the condensate storage tank), the use of the occupancy factor of 2.228, the bounding nature of population projections, dose to biota closer than the nearest human resident, maintenance of occupational exposures, the cow milk pathway, Table S-3 values used for fuel cycle impacts, locations and results of monitoring wells, radiological environmental monitoring program results, and dose discussion in Section 7.2.3.

The ER lacks information and assessment regarding cumulative impacts for the radiological impacts of normal operation, postulated accidents, fuel cycle, transportation, and decommissioning for the proposed site and for the alternative sites.

## **Alternatives**

Discussions were held with the applicant to resolve the transmission line grid stability issue related to site selection (possibly remove discussion). The possible need for one or more new transmission lines of 94 or 55 miles for the preferred site appears to conflict with the use of an exclusionary criterion of no greater than 20 miles from a point of interconnect with existing transmission lines. Clarification of this issue is needed.

Regarding the discussion of alternative energies, it is recommended that additional information is needed to justify conclusions and tell a more complete story. While the requisite alternative energy options were addressed, the basis for concluding that they are not viable would benefit by the inclusion of additional data/rationale supporting the conclusions.

Recommendations were made to include alternative site maps and cite the siting report. The summary of the alternative site screening process/methodology provided within the ER is not sufficient to meet the requirements of ESRP 9.3 without inclusion of references to a siting report and the submittal of such a report to the NRC for inclusion on the docket.

## **Plant Parameter Envelope**

It is recommended that the PPE be included in the ER (it is currently provided only in the SSAR).

The following questions were raised regarding the values in the PPE:

- 1) What is the finished grade of power block relative to site grade?
- 2) For each tower possibility (mechanical, natural draft, fan-assisted natural draft), what are the number of towers, cells, etc. (descriptions)?
- 3) What are the maximum makeup flow rate and maximum evaporative rate for three types of towers for the Cooling Water System (CWS) and for the Ultimate Heat Sink (UHS)?
- 4) What is the maximum groundwater level during operation?

## **Assessment of Readiness**

The team found that PSEG has a good understanding of the requirements for submitting a complete ER in support of an ESP. The PSEG team has been monitoring the progress of other site applications, reviewing requests for additional information submitted in conjunction with other combined license and ESP applications, and responding to potential issues identified during previous visits. NRC staff continues to emphasize the need to engage other agencies, in particular the U.S. Army Corps of Engineers, and PSEG is doing so already. PSEG appears to be on track for the planned submittal of May 28, 2010. However, it is possible that additional issues may be identified during the detailed acceptance review.