Summary of Issues and Concerns

The NRC team identified no significant issues during the C-1 visit. PSEG is early in the process of developing its plans for the site and the environmental report (ER) to include in the ESP application. If PSEG continues to implement the plans presented at the meetings, it should have adequate data to support the ESP application. PSEG has not selected a reactor technology to implement at the site or the cooling tower and intake structure design so many specifics regarding potential impacts are not available. The applicant is proposing to base the application on a Plant Parameter Envelope (PPE) that will bound the parameters of all options. This approach should allow the NRC team to review the application and prepare an Environmental Impact Statement (EIS) that will bound PSEG's final design and, therefore, environmental impacts.

Background and Issues by Technical Discipline

Transmission Lines

It is likely that significant new transmission improvements, beyond those already in the PJM queue, would not be needed, but more detailed information on this subject would be reviewed later in the ESP process or during any subsequent COLA.

Land Use

PSEG is currently in discussions to acquire or utilize additional land adjacent to the existing site, and plans to finalize the land use or acquisition agreement before the ESP application is submitted.

Meteorology and Air Quality

PSEG and its contractors have identified most of the issues related to meteorology and air quality and are addressing them in an appropriate manner. However, justification for the representativeness of the meteorological data being collected on the primary tower due to cables and extra tower braces that may have blocked air flow through one side of the tower will be necessary to prepare the EIS. In addition, the tower is sitting on a crushed rock surface, which will require analysis / justification that any differing thermal characteristics than the surrounding surface are understood and do not negatively affect the data.

Hydrology

PSEG has a good understanding of the hydrology of the Delaware River and the proposed site due to the characterization, monitoring, and modeling it has done for the existing units. Several specific topics, including the use of NUREG 0800, were discussed, but overall, the applicant appears to be on track for both groundwater and surface water hydrology.

Terrestrial Ecology

Formal bird and other surveys do not include the two miles of access road nearest the site – although PSEG has done some informal surveys and will probably continue. The on-site transects are all laid out along existing access roads, which may limit the types and number of species observed. However, this approach is likely acceptable due to the surrounding

Phragmites density that greatly hinders data collection. Significant wetland impacts would be associated with site development, and both the U.S. Army Corps of Engineers and the State of New Jersey would have significant involvement in this portion of the review. Overall data collection for terrestrial ecology appears to be on track.

Aquatic Ecology

PSEG has relevant environmental monitoring data for the past three decades, mostly associated with the Salem intake, which could be applicable to the ESP application if properly justified in relation to the proposed intake location. Thermal modeling is planned, but it is not clear how this modeling will address the three operating reactors in the vicinity.

Socioeconomics/Environmental Justice/Benefit Cost

PSEG appears to be on track to acquire and analyze the appropriate information. No significant issues were identified.

Cultural Resources

PSEG is early in the process of addressing cultural resources impacts and may do additional work as it develops project details. PSEG plans further discussions with both Delaware and New Jersey State Historic Preservation Office (SHPO) as plans mature. The visual impact of cooling towers and cooling tower plumes will need to be addressed. Until PSEG identifies the cooling tower design it would use, it would need to prepare a bounding analysis for the most imposing tower type and plume. The visual impact to historic buildings is an important aspect for both states.

Underwater archaeology studies may be required once PSEG develops detailed plans for intake and discharge structures, modifications to the existing barge slip, and new barge tie-up facilities. The New Jersey SHPO also wants geomorphological studies for paleohorizon in wetland areas and at the interface between the artificial island fill and the original river bottom should excavations go that deep. PSEG does not currently have a cultural protection plan but is expected to have such procedures in place prior to excavation for the power block or access road.

PSEG will need to determine if surveys and cultural resource analysis for the site, any offsite construction / laydown, fill / borrow areas, and any access road(s) will be completed and included in the ESP application.

As to the potential to acquire / use additional property, PSEG will need to assure that cultural resource issues are clearly addressed in the ESP and that the interface with National Historic Preservation Act Section 106 be addressed.

Radiological Evaluations

Release estimates will be calculated for all four reactor technology designs and footprints under consideration to establish a PPE. The PPE will then be used with XOQDOQ, LADTAP, and GASPAR codes to

provide bounding maximum dose estimates for individuals, population groups, and biota. PSEG appears to be on track with these analyses.

Accidents

The planned approach to evaluate design-basis accidents follows the approach used in previous ESP applications. However, the planned approach to severe accident consequence assessment is not consistent with the approach used in the staff's severe accident assessments in the first three ESP EISs. PSEG's planned approach for severe accidents was not allowed in earlier ESP applications. The applicant understands the issue and now plans to use the MACCS2 approach for its severe accident analysis.

Need for Power

The proposed plant would be a merchant generator, subject to the Federal Energy Regulatory Commission Large Generator Interconnection procedures outlined in 18 CFR 35. There is no integrated resource planning function in the State of New Jersey. There is no independent validation of the PSEG energy forecasts. The applicant's case for the need for the project is based on PJM analyses and the New Jersey Energy Master Plan. The applicant has not yet performed an independent analysis using data sources from PJM.

Alternatives

PSEG appears to be following a systematic process to review alternative systems, alternative generation options, and alternative sites. The process to evaluate alternative sites appears to follow the Electric Power Research Institute guidance. There was some concern regarding the geographic boundaries of the region of interest, as it did not include Bucks County Pennsylvania and portions of Maryland and Delaware that were just across the Delaware River from New Jersey. PSEG designated the region of interest to include the entire state of New Jersey plus portions of Pennsylvania and Delaware that were within a certain distance from PSEG's "nuclear headquarters" in Salem, NJ. The selection criteria do not appear to have been applied consistently.

Assessment of Readiness

The team found that PSEG has a good understanding of the requirements for submitting an ER in support of an ESP. The PSEG team has been monitoring the progress of other site applications and reviewing requests for additional information submitted in conjunction with other combined license and ESP applications. NRC staff emphasized the need to engage other agencies, in particular the U.S. Army Corps of Engineers, early in the process. PSEG has a significant amount of work to complete before submitting an ER, but it appears to be making good progress and on track for the planned submittal of May 2010. The next readiness assessment visit (C-2) is planned for October 2009.