LIST OF TABLES (CONTINUED)

ADD Insert A per RAI No. 67.

LIST OF FIGURES (CONTINUED)

ADD Insert B per RAI No. 67.

REPLACE with
"24.7 ft. NAVD
7.4 ft.
32.1 ft. NAVD"
per RAI No. 67.

REPLACE with
"Table 2.4.5-4
Table 2.4.5-4
Table 2.4.5-4"
per RAI No. 67.

INSERT with
"(including 10 percent
exceedance high
tide)"
per RAI No. 67.

REPLACE with
"runup"
per RAI No. 67.

Table 2.0-1 (Sheet 7 of 9)
PSEG Site Characteristics

Site Characteristic	PSEG Site Value	SSAR Section	Definition
Annual Average Undepleted/No Decay χ/Q Value @ Nearest Farm, northwest, 4.9 mile	1.10×10^{-7} s/m^3	Table 2.3-34	The maximum annual average farm undepleted/no decay atmospheric dispersion factor (χ/Q) value for use in determining gaseous pathway doses to the maximally exposed individual.
Annual Average Undepleted/2.26-day Decay χ/Q Value @ Nearest Farm, northwest, 4.9 mile	1.10×10^{-7} s/m^3	Table 2.3-34	The maximum annual average farm undepleted/2.26-day decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual.
Annual Average Depleted/8.00-day Decay χ/Q Value @ Nearest Farm, northwest, 4.9 mile	8.20×10^{-8} s/m^3	Table 2.3-34	The maximum annual average farm depleted/8.00-day decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual.
Annual Average D/Q Value @ Nearest Farm, northwest, 4.9 mile	3.50×10^{-10} 1/m^2	Table 2.3-34	The maximum annual average farm relative deposition factor (D/Q) value for use in determining gaseous pathway doses to the maximally exposed individual.
Hydrology			
Proposed Facility Boundaries	Figure 1.2-3 presents the proposed facility boundary.	2.1	PSEG Site boundary map.
Maximum Ground Water	10 ft. NAVD	2.4.12.5	The maximum elevation of groundwater at the PSEG Site.
Maximum Stillwater Flood Elevation	~~26.9 ft. NAVD~~	~~Table 2.4.5-1~~	The stillwater elevation, without accounting for wind induced waves that the water surface reaches during a flood event.
Wave ~~Run-up~~	~~7.9 ft.~~	~~Table 2.4.5-1~~	The height of water reached by wind-induced waves running up on the site.
Combined Effects Maximum Flood Elevation	~~35.9 ft. NAVD~~	~~Table 2.4.5-1~~	The water surface elevation at the point in time where the combination of the still water level and wave ~~run-up~~s at its maximum.

REPLACE with "Runup"
per RAI No. 67.

Salem Generating Station (SGS) and Hope Creek Generating Station (HCGS) are located in the western portion of the PSEG Site. SGS has two Westinghouse pressurized water reactors (PWRs) with once-through condenser cooling systems. Units 1 and 2 entered commercial service in June 1977 and October 1981, respectively. Each unit is licensed for 3459 megawatts thermal (MWt). The nuclear steam supply system for each unit includes a PWR, reactor coolant system, and associated auxiliary fluid systems. SGS is located in an area of engineered backfill at a grade elevation of 9.7 ft. NAVD (Reference 2.4.1-14).

HCGS is a single-unit plant utilizing a General Electric boiling water reactor (BWR) with a natural draft cooling tower; the unit is currently licensed for 3840 MWt. HCGS entered commercial service in December 1986. The nuclear steam supply system includes a BWR, reactor coolant system, and associated auxiliary fluid systems. The Hope Creek plant is located in an area of engineered backfill at an elevation of 11.7 ft. NAVD. The Turbine and Auxiliary Building ground floor levels are at a grade elevation of 12.2 ft. NAVD. (Reference 2.4.1-13)

The new plant location is to the north of the HCGS. Most of the area for the new plant lies within the current property boundary. However, PSEG is developing an agreement in principle with the U.S. Army Corps of Engineers (USACE) to acquire an additional 85 acres immediately to the north of the HCGS. A specific reactor technology has not been selected for construction at the PSEG Site. Designs under consideration are:

- Single Unit U.S. Evolutionary Power Reactor (U.S. EPR)
- Single Unit Advanced Boiling Water Reactor (ABWR)
- Single Unit U.S. Advanced Pressurized-Water Reactor (US-APWR)
- Dual Unit Advanced Passive 1000 (AP1000)

REPLACE with "32.1 ft." per RAI No. 67.

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The circulating water system (CWS) for the new plant includes cooling tower(s). The Delaware River is used for makeup water for the CWS and the turbine plant cooling systems. In addition to the circulating water cooling tower, service water cooling tower(s) are included in the new plant design.

The design basis flood (DBF) is ~~35.9 ft.~~ NAVD as calculated in Subsection 2.4.5. ~~Floor elevations for safety-related structures, systems and components (SSC) for the new plant, other than the intake structure, will be established to maintain one foot of clearance above the DBF, as required by Tier 1 of the design control document (DCD) for the technology selected.~~ The area surrounding the safety-related SSC will be graded such that the runoff from probable maximum precipitation (PMP) on the site drains away from the SSC into a system of swales and pipes that carry runoff to the Delaware River.

The design basis low water level at the ultimate heat sink (UHS) makeup water intake is -15.9 ft. NAVD as discussed in Subsection 2.4.11 and shown on Figure 2.4.2-7.

Elevations reported in Section 2.4 are in NAVD. Some components of hydrologic events, such as storm surge and wave height, are customarily expressed in feet, which are not tied to a datum.

(References 2.4.2-13 and 2.4.2-17). This is approximately 30 times greater than the mean freshwater discharge of the Delaware River near the site. Tides within the Delaware Estuary are semidiurnal (Reference 2.4.2-10). The nearest tidal gage station to the PSEG Site is NOAA's Reedy Point, DE, tidal station, located upstream at RM 59. Mean tidal range at the Reedy Point tidal station is 5.34 ft. (Reference 2.4.2-11). Seasonal variations in the tidal cycle at Reedy Point (Reference 2.4.2-11) show higher msl elevations from April through October, as compared to November through March (Table 2.4.2-3).

Mean sea level trends at Reedy Point are evaluated by NOAA. The upper 95 percent confidence interval for sea level rise, based on monthly msl data, is estimated to be 1.35 feet/century (Reference 2.4.2-12). Flood elevations at the PSEG Site are affected by the regional tidal influences. Tidal variations are addressed in applicable modeling scenarios for determination of the design basis flood (DBF).

The DBF for the PSEG Site is determined by selecting the maximum flood elevation on the Delaware River adjacent to the site. This determination is obtained by considering possible flooding scenarios, singular and in combination, as applicable to the site. Flooding scenarios investigated for the site include:

- Flooding due to PMP on the site (Subsection 2.4.2)
- PMF on rivers and streams (Subsection 2.4.3)
- Potential dam failures (Subsection 2.4.4)
- Maximum surge and seiche flooding (Subsection 2.4.5)
- Probable maximum tsunami (PMT) (Subsection 2.4.6)
- Ice effect flooding (Subsection 2.4.7)
- Channel diversions (Subsection 2.4.9)

Flooding due to underwater landslides is evaluated with the PMT and detailed in Subsection 2.4.6. Each of these flooding scenarios is evaluated in conjunction with other flooding and meteorological events, such as wind-generated waves and/or 10 percent exceedance high tide, in accordance with guidelines provided in Regulatory Guide (RG) 1.59, *Design Basis Floods for Nuclear Power Plants*, 1977 and American National Standards Institute/American Nuclear Society (ANSI/ANS)-2.8-1992, *Determining Design Basis Flooding at Power Reactor Sites* (Reference 2.4.2-1), as detailed in Subsections 2.4.2 through 2.4.7.

Evaluation of the above-referenced flooding scenarios indicates that the DBF for the new plant is the probable maximum surge and seiche associated with the probable maximum hurricane (PMH). As described in Subsection 2.4.5, the DBF includes still water level, 10 percent exceedance high tide, wind setup, and wave runup. The DBF flood level derived from storm surge associated with the PMH, including sea level rise, is elevation ~~35.9 ft.~~ [REPLACE with "32.1 ft." per RAI No. 67.] NAVD. A summary of the types of floods considered and their associated flood levels is presented in Table 2.4.2-4. Results of select flooding events and other relevant elevations are shown on Figure 2.4.2-7. Sea level rise is only added to the worst case flooding scenario to develop a conservative design basis flood.

Floor elevations for safety-related SSC for the new plant will be established to maintain clearance above the DBF, as required by Tier 1 of the DCD for the technology selected. The area surrounding the safety-related SSCs will be graded such that the runoff from the PMP on the site drains away from the structures.

REPLACE with "32.1 ft." per RAI No. 67.

Table 2.4.2-4
PMF Determination in Accordance with ANSI/ANS-2.8-1992 "Determining Design Basis Flooding at Power Reactor Sites"

Type of Flooding	SSAR Subsection	Max. WSEL (ft. NAVD)
Local PMP	2.4.2	[a]
PMF on Streams and Rivers	2.4.3	21.0
Potential Dam Failures	2.4.4	9.4
PMS and Seiche Flooding	2.4.5	~~35.9~~
Probable Maximum Tsunami	2.4.6	5.7
Ice Effects	2.4.7	8.1
Channel Diversions	2.4.9	n.a.[b]

a) WSEL depends on the stormwater drainage system design for the new plant and cannot be evaluated until the reactor technology is selected and the site grading plan, which is dependent of the selected technology, is developed.
b) n.a. = not applicable

REPLACE with "2.4.3.1.2" per RAI No. 67.

maximum flood elevations, as presented in ANSI/ANS-2.8-1992, Section 9.2.1.2. Wave runup is determined using 2-year annual extreme wind speed of 50 mph, as shown in Section 9.1.4 of ANSI/ANS-2.8-1992 (Reference 2.4.4-1). Wind speeds are adjusted for duration in accordance with the Coastal Engineering Manual (Reference 2.4.4-7). Fetch directions are evaluated in 22.5 degree increments and the fetch direction that yields the highest wave runup is presented. Wave conditions are limited by fetch for the critical direction, which is wind blowing from the west across a flooded fetch of 4 miles. The flooded fetch is calculated at elevation 6.8 ft. NAVD, as discussed in Subsection 2.4.4.3, for a total length of 4 miles. The smaller of the maximum wave height or the maximum breaker height is used to determine runup, as described in Sections 7.4.3 and 7.4.4.5 of ANSI/ANS-2.8-1992 (Reference 2.4.4-1). The maximum wave height of 5.6 ft. is controlling. Subsection ~~2.4.5~~ provides a detailed discussion of the methods used to determine wave runup and wind setup.

The plant facilities are assumed to be constructed on fill at a 3 (horizontal):1 (vertical) or flatter slope with the slope protected by riprap.

Water Level at the New Plant Location

The inflow hydrographs from the 500-year flood calculations are incorporated into the HEC-RAS model along with discharge hydrographs from the selected tributaries for the four dam break scenarios. The maximum WSEL at the new plant location due to dam failure under any of the modeled scenarios is 9.4 ft. NAVD.

2.4.4.3 Water Level at the New Plant Location

HEC-HMS and HEC-RAS modeling show that maximum WSELs at the new plant location result from the simultaneous failure of the Pepacton and Cannonsville dams, excluding the influence of tides (Table 2.4.4-3). Conservative parameters used in this analysis include the combination of multiple dam failures timed to reach the new plant location simultaneously, the reservoirs being full at the time they are breached and the dam failures occurring instantaneously due to seismic activity. The maximum WSEL at the new plant location resulting from this scenario, including the influence of tides, is 6.8 ft. NAVD (Figure 2.4.4-3). Figure 2.4.4-4 illustrates the maximum flow rates for this scenario.

In accordance with ANSI/ANS-2.8-1992 standards (Reference 2.4.4-1), maximum wave height and wave runup are simulated coincident with dam failure flood levels through the Delaware River. The combined effect of dam failure with 10 percent exceedance high tide, the 500-year frequency flood, and the 2-year wind-wave runup, produces a maximum WSEL at the new plant location of 9.4 ft. NAVD (Figure 2.4.4-3 and Table 2.4.4-5).

2.4.4.4 Effects of Sediment Deposition and Erosion

The settling of particles carried downstream from the Marsh Creek and Hoopes Reservoir dam breaks are calculated to address the potential for suspended sediments from dam failures that may adversely affect the operation of the intake structure at the new plant. These two reservoirs are chosen because they are the closest reservoirs to the PSEG Site and represent the highest potential for sediment deposition at the PSEG Site due to dam failure. Both are located on the Christina River, a tributary entering the Delaware River at RM 71. The Hoopes Reservoir is located 37 RM upstream from the PSEG Site and Marsh Creek Reservoir is located 53 RM

REPLACE with Insert C per RAI No.67.

confluence of the Christina and Delaware rivers, with less deposition occurring at the intake structure. Therefore, dam breaks of the Marsh Creek and Hoopes reservoirs do not represent a significant buildup of sedimentation at the intake structure.

2.4.4.5 Dynamic Effects of Dam Failure-Induced Flood Waves on Structures, Systems and Components

The maximum WSEL caused by dam-failure induced flood waves is 9.4 ft. NAVD. This is lower than the DBF elevation caused by probable maximum storm surge, described in Subsection 2.4.5. ~~Floor elevations for safety-related structures, systems and components (SSC) for the new plant, other than the intake structure, will be established to maintain one foot of clearance above the DBF, as required by Tier 1 of the DCD for the technology selected.~~ With the exception of the intake structure, no safety-related SSC will be subject to dynamic forces associated with the flood wave caused by dam failures in the Delaware River Basin. The intake structure of the new plant will be designed to protect it from dynamic effects associated with dam-failure induced flood waves.

2.4.4.6 Conclusions

There are no dams in series to model a domino-type failure. Combinations of failure of large dams on tributaries to the Delaware River are modeled to determine worst case flooding elevations due to dam failures at the new plant location. Based on the settling velocity of soils and distance to the site, deposition of sediment due to dam breach is not significant at the intake structure. Low water as a result of dam breach is not considered because there are no dams on-site or downstream that affect the availability of safety-related water supply to the new plant.

Flood elevations determined by these dam failure analyses are developed using conservative assumptions through modeling procedures that include:

- Addition of the downstream stage boundary condition of 10 percent exceedance of the high tide
- Multiple dam failures peak flows reaching the site at high tide
- Dams are considered full at the time of the breach
- Failures occur instantaneously due to seismic activity

Of the four seismic dam breach scenarios modeled, the scenario producing the maximum WSEL at the new plant location is the combined failure of the Pepacton and Cannonsville dams. This breach scenario results in a flood elevation of 9.4 ft. NAVD at the PSEG Site (Table 2.4.4-5) and includes the following components: the 10 percent exceedance high tide at 4.5 ft. NAVD, coincident with the 500-year frequency storm event of 2.0 ft., the combined Pepacton and Cannonsville dam breaches of 0.3 ft., and the 2-year wind speed applied in the critical direction of 2.6 ft. However, the maximum WSEL resulting from potential dam failures is exceeded by the maximum storm surge associated with the PMH, as described in Subsection 2.4.5.

REPLACE with "2.4.3.1.2" per RAI No. 67.

Table 2.4.4-5
Resulting Maximum Water Surface Elevation at the PSEG Site (RM 52) From Dam Failure (Combined Events Alternative II of ANS)

10% Exceedance High Tide (ft. NAVD)	500-Year Flood (ft.)	Failure of Cannonsville and Pepacton Reservoirs (ft.)	Wave Runup from 2-Year Wind Speed in the Critical Direction (ft.)[a]	Maximum Water Surface Elevation (ft. NAVD)
4.5	2.0	0.3	2.6	9.4

a) Coincident wave runup is described in detail in Subsection ~~2.4.5~~

REPLACE with " of 36.9 ft." per RAI No. 67.

2.4.6.4.8 Summary of Tsunami Amplitudes at PSEG Site

Runup values calculated during simulations are relative to 10 percent exceedance high tide, which serves as the static initial water level in the simulations. Maximum runup values are reported in Table 2.4.6-6 relative to the 10 percent exceedance high tide elevation. Drawdown values are reported in Table 2.4.6-6 relative to the 90 percent exceedance low tide elevation. The 10 percent exceedance high tide is 4.5 ft. NAVD and 90 percent exceedance low tide is -5.08 ft. NAVD based on values from the NOAA tidal gage at Reedy Point (Reference 2.4.6-13). This provides an approximation for extreme water levels reached for wave runup events arriving coincident with high astronomical tide, or for drawdown events arriving coincident with low astronomical tide. The PMT at the PSEG Site is caused by the Currituck Landslide. In the most conservative model without bottom friction, maximum runup at the PSEG Site is 5.65 ft. NAVD and maximum drawdown is -6.16 ft. NAVD.

These results indicate that a landslide tsunami on the U.S. East Coast continental shelf margin represents the PMT case.

2.4.6.5 Effects of Runup on Safety-Related Facilities

The new plant grade will be established at an elevation ~~at least 1 ft. above the DBF of 35.9 ft.~~ NAVD. As indicated in Table 2.4.6-6, none of the maximum predicted runup elevations obtained in this study overtop this elevation. Therefore, PMT events do not constitute a limiting design basis for the new plant nor do hydrodynamic and hydrostatic forces impact any safety-related structures. The DBF caused by storm surge and associated wave runup caused by the PMH, described in Subsection 2.4.5, governs the design to protect safety-related structures from wave runup.

2.4.6.6 Consideration of Debris and Waterborne Projectiles

The grade elevation for the new plant will be established at a level providing for clearance above the DBF, as required by Tier 1 of the DCD for the selected technology. Therefore, debris and waterborne projectiles do not come into contact with safety-related structures. The intake structure at the new plant will be designed to protect it from impacts of waves and waterborne projectiles.

2.4.6.7 Effects of Sediment Erosion and Deposition

Strong water currents associated with tsunami wave activity can cause erosion and deposition, rapidly changing the morphology of an impacted area. In order to examine whether this mechanism is likely to have an impact at the new plant location, the speed of current at the site for the Currituck cases, both with and without friction, is considered. Figure 2.4.6-3 shows that water current speeds for the case without friction are significantly higher than for the case with friction, but each value falls within the range of normal tidal current activity in the bay (Reference 2.4.6-29). A rapid morphological response to tsunami activity at the site is not expected.

2.4.6.8 Consideration of Other Site-Related Evaluation Criteria

Three tsunami sources are selected to analyze the PMT at the new plant location. Two tsunami sources (Currituck and Canary Islands) are assumed to generate the tsunami due to submarine landslides, which are not necessarily tied to strong seismic activity. The Currituck landslide is

freezing temperature). Conditions that lead to supercooling include air temperatures of 21°F (-6 C) and below, open water, and clear nights (Reference 2.4.7-14).

As discussed in Subsection 2.4.7.1, surface ice has been observed on the Delaware River at the PSEG Site, primarily during the months of January and February (Reference 2.4.7-4). This is consistent with the U.S. Coast Guard (USCG) Ice Guide (Reference 2.4.7-22). Table 2.4.7-2 summarizes the thickness and concentration of ice reported near the PSEG Site during the period of record from the 1998/1999 winter to the 2004/2005 winter. The concentration of ice is defined as the fraction of an area that is covered by sea ice. The National Ice Center reports this concentration data in tenths (Reference 2.4.7-8). A review of the National Ice Center data shows the thickest ice in the vicinity of the new plant was reported as code 741 on January 31, 2000. Using the World Meteorology Organization's ice chart symbology, this translates to a thickness of 12 to 28 in. for the most mature portions of ice on the Delaware River, 4 to 6 in. for newer portions of formed ice, and 0 to 4 in. for the most recently formed ice. The highest concentration of ice reported during this period of record is 9-tenths to 10-tenths in the mid- to upper-Delaware Bay, occurring during the week of January 26, 2004 (Reference 2.4.7-4). This means that the ice formed in the mid and upper portions of Delaware Bay was concentrated enough to allow formation of a solid sheet of ice, but was not concentrated enough to be considered fast ice (ice anchored to the shoreline). The new plant is located at the transition from the Delaware Bay to the Delaware River. Table 2.4.7-2 summarizes the thickness and concentration of ice reported near the PSEG Site during this period of record.

REPLACE with "situated at least one foot" per RAI No. 67.

In accordance with ANS 2.8, Section 8.3, the ... ew plant location will be designed with protective measures to mitigat ... razil ice, surface ice, and other dynamic forces associated with ice effects.

2.4.7.5 Conclusions

The new plant design will ensure that all above-grade safety-related SSC are ~~situated one foot~~ higher than the DBF elevation, as required by Tier 1 of the DCD for the technology selected . Based on review of historical ice jam information and model simulation of a major historic ice jam event, the flooding potential resulting from historic ice jam discharge is elevation 8.1 ft. NAVD. This is significantly lower than the DBF elevation of ~~35.9 ft.~~ NAVD. The DBF is further discussed in Subsection 2.4.5. Surface ice has been observed at the site. Based on historic meteorological data, the potential for frazil ice exists at the PSEG Site (as discussed in Subsection 2.4.7.1). The new plant intake structure will be designed to address ice effects, including surface ice, frazil ice, and other dynamic forces and blockages associated with ice effects. The icing events presented in this subsection represent the worst case icing scenarios adjacent to and at the PSEG Site.

REPLACE with "32.1 ft. per RAI 67.

2.4.7.6 References

2.4.7-1 American National Standards Institute/American Nuclear Society, "Determining Design Basis Flooding at Power Reactor Sites," ANSI/ANS-2.8-1992, (historical), p. 1; 32, 1992.

2.4.7-2 Delaware River Basin Commission 2007b, "Stream River Mileage July 2007," Website, http://www.state.nj.us/drbc/StreamMileageJuly2007.pdf, p. 11, accessed February 16, 2009.

2.4.10 FLOODING PROTECTION REQUIREMENTS

Maximum WSEL, including wave runup, is evaluated for different flood-producing events in Subsections 2.4.3 through 2.4.7. The results are summarized in Subsection 2.4.2 (specifically Table 2.4.2-4). The combined events evaluation for probable maximum surge and seiche flooding, presented in Subsection 2.4.5, represents the maximum flood level and, therefore, becomes the DBF at the new plant. That alternative includes the effects of the probable maximum hurricane surge associated with the PMH.

Floor elevations for safety-related SSC for the new plant, with the exception of the intake structure, will be established to maintain clearance above the DBF, as required by Tier 1 of the DCD for the selected technology. The area surrounding the safety-related SSC will be graded such that runoff from the PMP on the site drains away from new and existing structures to the Delaware River. To create the worst case scenario, the model assumes that all drainage structures (e.g. culverts, storm drains, and bridges) are blocked during the PMP event. Drainage systems for the new plant location will be designed so that the peak discharge from the local PMP does not produce WSEL that cause flooding of any safety-related SSC at the site.

The storm surge associated with the PMH is discussed in Subsection 2.4.5. This surge is calculated coincident with the 10 percent exceedance high tide. Wave runup is added to the storm surge to give the maximum WSEL at the site. The maximum WSEL combined with the potential sea level rise produces a water level of ~~35.9 ft. NAVD (Table 2.4.5-1)~~. All safety-related SSC (with the exception of the intake structure) for the new plant will be constructed at least one foot higher than the DBF. The new plant site grade is established at 36.9 ft. NAVD. This meets the requirements of a dry site as defined in NRC RG 1.102. Riprap protection will be provided on the slopes of the site to provide protection from wave runup.

The maximum WSEL in the intake forebay is controlled by the PMH, as discussed in Subsection 2.4.5. Appropriate erosion control technology will be implemented, where applicable, to protect the intake structure from wind-induced waves, runup and associated erosion. Flood protection for the intake structure will be designed as part of the detailed design of the new plant. The intake structure will be designed to be protected from the effects of flooding and to withstand the applicable hydrodynamic forces, including wave forces, in accordance with RG 1.27, 1.59, and 1.102.

Procedures to address flooding protection requirements will be developed based on the detailed site design.

REPLACE with "32.1 ft. NAVD (see Subsection 2.4.5.6)" per RAI 67.

Following installation, the wells were developed using a submersible pump to remove fines from the well and filter pack, under the supervision of a NJ licensed well driller. During the development process, the pump was cycled on and off and/or lifted up and down to create a surge effect in the well. The wells were considered developed when the pumped water was relatively clear and visually free of suspended sediment, or after a maximum of two hours.

Following well development, field hydraulic conductivity tests (also referred to as "slug tests") were performed at each well using procedures described in Section 8 of ASTM D 4044 (Reference 2.5.4.3-1). A minimum of two rising head tests and two falling head tests were completed at each location. The results of the hydraulic conductivity tests are presented in Subsection 2.5.4.6.

REPLACE with "2.4.10" per RAI No.67.

2.5.4.3.2 Foundation Interfaces

Figures 2.5.4.3-3 and 2.5.4.3-4 show cross-sections along, and perpendicular to, the dip of the Coastal Plain deposits underlying the northern area at the PSEG Site. These cross-sections are constructed from the geotechnical boring logs and demonstrate the position of subsurface stratigraphy relative to the upper and lower bounds of embedment depths for safety-related structures within the plant parameter envelope (PPE) described in Subsection 1.3.3. Figure 2.5.4.3-2 shows the location of the cross-sections relative to the geotechnical borings performed during the course of the PSEG Site exploration.

As discussed in Subsection ~~2.4.5~~, the site grade of the new plant will be at elevation 36.9 ft. NAVD ~~to achieve a grade at least 1 ft. above the design basis flood elevation of 35.9 ft.~~ Between 25 and 30 ft. of fill will be required to achieve this site grade. The top of competent foundation materials, as evaluated in Subsection 2.5.4.5, occurs at approximate elevation -67 ft. NAVD at the new plant location. Table 1.3-1 lists the range of embedment depths for the four reactor technologies as 39 ft. to 84.3 ft. below the plant grade. Subtracting these depths from the site grade of elevation 36.9 ft, shows that the bottom of the foundations for the deepest base of the safety-related structures will lie at elevations -2.1 ft to -47.4 ft NAVD which corresponds to 20 to 65 ft. above the top of the competent foundation bearing material. Over-excavation of this unsuitable foundation support material and replacement with backfill material will be performed, as described in Subsections 2.5.4.5 and 2.5.4.10.

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2.5.4.3.3 References

2.5.4.3-1 ASTM, 2008, “Standard Test Method (Field Procedure) for Instantaneous Change in Head (Slug) Tests for Determining Hydraulic Properties of Aquifers,” ASTM D 4044-08, 2008.

2.5.4.3-2 ASTM, 2005, “Standard Test Method for Energy Measurement for Dynamic Penetrometers,” ASTM D 4633-05, 2005.

2.5.4.3-3 ASTM, 2006a, “Standard Guide for Use of Direct Rotary Drilling with Water-Based Drilling Fluid for Geoenvironmental Exploration and the Installation of Subsurface Water-Quality Monitoring Devices,” ASTM D 5783-06, 2006.

2.5.4.3-4 ASTM, 2006b, “Standard Practice for Description and Identification of Soils (Visual-Manual Procedure),” ASTM D 2488-06, 2006.

RAI No. 67 Response
SSAR Markups

INSERT A (Chapter 2 - List of Tables)

INSERT B (Chapter 2 - List of Figures)

INSERT C (Subsections 2.4.1.1 and 2.4.4.5)

Floor elevations for safety-related structures, systems and components (SSC) for the new plant, other than the intake structure, will be established to maintain at least one foot of clearance above the DBF, as required by Tier 1 of the design control document (DCD) for the technology selected.