



ND-2011-0002  
February 2, 2011

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Subject: **PSEG Early Site Permit Application**  
**Docket No. 52-043**  
**Response to Request for Additional Information, RAI No. 2, Emergency Plan**  
**Evacuation Time Estimate**

References: 1) PSEG Power, LLC letter to USNRC, Application for Early Site Permit for the PSEG Site, dated May 25, 2010  
2) RAI No. 2, Emergency Plan Evacuation Time Estimate, dated January 4, 2011 (eRAI 5207)

The purpose of this letter is to respond to the request for additional information (RAI) identified in Reference 2 above. This RAI addresses the Emergency Plan Evacuation Time Estimate, as submitted in Part 5 of the PSEG Site Early Site Permit Application (ESPA), Revision 0.

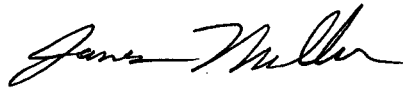
Enclosure 1 provides our response for RAI No. 2, Questions No. 13.03-2 through 13.03-8. Our responses to RAI No. 2, Question No. 13.03-2 through 13.03-8, include revised ESPA content with Enclosure 2 providing the proposed revisions of the submitted Emergency Plan Evacuation Time Estimate Report.

Regulatory commitments established in this submittal are identified in Enclosure 3. If any additional information is needed, please contact David Robillard, PSEG Nuclear Development Licensing Engineer, at (856) 339-7914.

AX45  
D079  
MRO

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 2nd day of February, 2011.

Sincerely,



James Mallon  
Nuclear Development ESP Project Manager  
PSEG Power, LLC

- Enclosure 1: Response to NRC Request for Additional Information, RAI No. 2, Questions No. 13.03-2 through 13.03-8, Emergency Plan Evacuation Time Estimate
- Enclosure 2: Marked-up pages from Emergency Plan Evacuation Time Estimate
- Enclosure 3: Summary of Regulatory Commitments

- cc: US NRC Project Manager, Division of New Reactor Licensing, PSEG Site  
(w/enclosures)
- US NRC, Environmental Project Manager, Division of Site and Environmental Reviews  
(w/enclosures)
- US NRC Region I, Regional Administrator (w/enclosures)

**PSEG Letter to USNRC, ND-2011-0002**

**ENCLOSURE 1**

**RESPONSE to RAI No. 2**

**QUESTIONS 13.03-2 through 13.03-8**

Response to RAI No. 2:

In Reference 2, the NRC staff asked PSEG for clarification regarding the Emergency Plan Evacuation Time Estimate. The specific requests were:

**Question 13.03-2:**

*Permanent resident population values were provided for the year 2010, and transient population values were provided for the year 2009 as shown in Table 3-4, "Summary of Transients and Transient Vehicles," and Table 3-5, "Summary of Non-EPZ Employees and Employee Vehicles." Explain in the ETE Report why 2009 population data was used for transients and non-EPZ employees.*

**PSEG Response to NRC RAI:**

As noted on page ES-1 in the Executive Summary of the ETE report, the ETE study was conducted in 2009. As noted in Section 3.1 of the ETE report, permanent resident population data was derived from the 2000 Census data. In 2009, the latest Census projections available were 2007. As noted in Section 3.1 and Table 3-2 of the ETE report, the 2007 projections were compared to the 2000 Census data to compute a municipality specific annual growth rate. This growth rate was then used to extrapolate permanent resident population to year 2010, which was when the Early Site Permit Application was submitted.

Transient and employment data are not available through the Census; thus, an approach similar to what was done for the permanent resident population was not feasible. As discussed on page 3-10 of the ETE report, transient data were gathered in the year 2009 through telephone conversations with the transient facilities and major employers, through discussions with the New Jersey State Police and the Delaware Emergency Management Agency, and through the use of overhead imagery. Employment data were gathered in a similar fashion for the major employers in the EPZ. However, this was not noted in the ETE report; text will be added to Section 3.3 in a future revision of the ETE report to clarify this.

Being that the transient and employment data were gathered in 2009 and growth rates are not available through the Census as they are for permanent resident population, 2009 was used as the base year for these data.

Footnotes will be added to Tables 3-4 and 3-5 in a future revision of the ETE report to explain why year 2009 data was used for transient and employment data.

**Associated PSEG Site ESP Application Revisions:**

1. The following footnote will be added to Table 3-4 "Summary of Transients and Transient Vehicles" on page 3-11 of the ETE report:

Transient data were gathered in 2009 through telephone conversations with the transient facilities and through discussions with the New Jersey State Police and the Delaware Emergency Management Agency. Growth rates are not available for transient population as they are for permanent resident population through the Census. Therefore, 2009 was used as the base year for transient data.

2. The following footnote will be added to Table 3-5 "Summary of Non-EPZ Employee and Employee Vehicles" on page 3-15 of the ETE report:

Employment data were gathered in 2009 through telephone conversations with major employers and through discussions with the New Jersey State Police and the Delaware Emergency Management Agency. Growth rates are not available for employees as they are for permanent resident population through the Census. Therefore, 2009 was used as the base year for employment data.

3. The fourth paragraph on page 3-14 of the ETE report will be revised as follows:

Table E-7 identifies the major employers within the EPZ. The names, locations, and the maximum number of employees per shift were identified through review of the local emergency plans, discussions with the New Jersey State Police and the Delaware Emergency Management Agency, and through Internet searches. In Table E-7, the Employees (Max Shift) column in Table E-7 is multiplied by the % Non-EPZ factor discussed above to determine the number of employees who are not residents of the EPZ. This removes any employee within the EPZ who would already be counted as a permanent resident.

**Attachments/Enclosures to Response to NRC:**

1. Enclosure 2 provides a markup of the proposed ETE revision.

**Question 13.03-3:**

*The annual Olde Tyme Peach Festival in Middletown, Delaware brings 27,000 people into the town for the one day event. Explain whether this festival should be added as a special event within the EPZ, and include the analysis in the ETE Report, if appropriate.*

**PSEG Response to NRC RAI:**

The Delaware Emergency Management Agency (DEMA) has an information booth at the Olde Tyme Peach Festival at which they disseminate Emergency Planning information. According to DEMA, the 27,000 figure for attendees at the festival is the attendance for the entire day. At any given time, there are at most 5,000 people attending the festival. DEMA estimates that half of those in attendance are EPZ residents, based upon discussions with festival attendees visiting the DEMA information booth. Therefore, this event attracts an additional 2,500 transient persons into the area at any given time.

It is assumed that those transients attending the festival do so as a family in a single vehicle with an occupancy of 2.92 people (average household size within the EPZ according to the telephone survey – see Figure F-1 of the ETE Report). This results in an additional 856 vehicles in the EPZ during the Olde Tyme Peach Festival.

The festival is held each year on a Saturday in August. According to the website for the Middletown Historical Society (<http://middletownde-hist.org/node/32>), there is a parade from 9:00am to 10:00am followed by the festival from 10:00am to 4:00pm. The parade starts at Meredith Middle School on Broad St, proceeds north on Broad St to Cochran Square for performances, then proceeds north to Main St, east on Main St to Catherine St, and then south on Catherine St to Silver Lake School, where the parade disbands. The roads along the parade route are closed for the duration of the parade. See Attachment 13.03-3-A for a map of the parade route and the location of the parade relative to the proposed PSEG site.

There is congestion expected in Middletown during evacuation, as discussed in Section 7.2 of the ETE report. The parade closes portions of the two major routes (Main St and Broad St) servicing evacuees from Middletown, making it prudent to consider a sensitivity study for the Olde Tyme Peach Festival.

The sensitivity study considers an evacuation of the entire EPZ (Region R03) during Scenario 3 conditions – summer, weekend, midday with good weather. Based on discussions with DEMA, all road closures for the parade could be removed in an emergency situation and traffic flow would be restored along Main St and Broad St within 30 minutes. Thus, the roads along the parade route are closed for the first 30 minutes of the evacuation in the sensitivity study. The additional 856 transient vehicles are loaded on roadways adjacent to the parade route, but not on the closed roads. It is assumed that these transients will begin their evacuation trips within one hour of the advisory to evacuate: 20% will be ready to evacuate within 15 minutes, 50% will be ready to evacuate in the subsequent 15 minutes, and the remaining 30% in the final 30 minutes.

As discussed in Section 3.6 and shown in Table 6-4 of the ETE report, the peak special events analyzed in the ETE study (Scenarios 13 and 14), a refueling outage at the plant in addition to peak construction activities in the year 2019, result in an additional 2,161 vehicles evacuating, which is significantly more than the 856 additional vehicles evacuating for the Olde Tyme Peach

Festival. Therefore, the special event considered in the ETE study is a peak event and need not be replaced by the Olde Tyme Peach Festival.

Table 1 presents the results of the sensitivity study. As Table 1 indicates, the ETE are not impacted by the additional transients and the brief road closure for the Olde Tyme Peach Festival.

<b>Case (Scenario 3, Region 3)</b>	<b>ETE (hr:min) for Indicated Percentile</b>			
	<b>50<sup>th</sup> Percentile</b>	<b>90<sup>th</sup> Percentile</b>	<b>95<sup>th</sup> Percentile</b>	<b>100<sup>th</sup> Percentile</b>
Base	1:05	2:00	2:15	6:00
Olde Tyme Peach Festival	1:05	2:00	2:15	6:00

**Associated PSEG Site ESP Application Revisions:**

1. Add the following text to Section 3.6 in a future revision of the ETE report.

The annual Olde Tyme Peach Festival in Middletown, Delaware attracts 2,500 additional transients into the EPZ during peak times. A sensitivity study was conducted, and it was found that the ETE are not affected by this event.

**Attachments/Enclosures to Response to NRC:**

1. Attachment 13.03-3-A: Figure 1 – Olde Tyme Peach Festival Parade Route Map.
2. Enclosure 2 provides a markup of the proposed ETE revision.

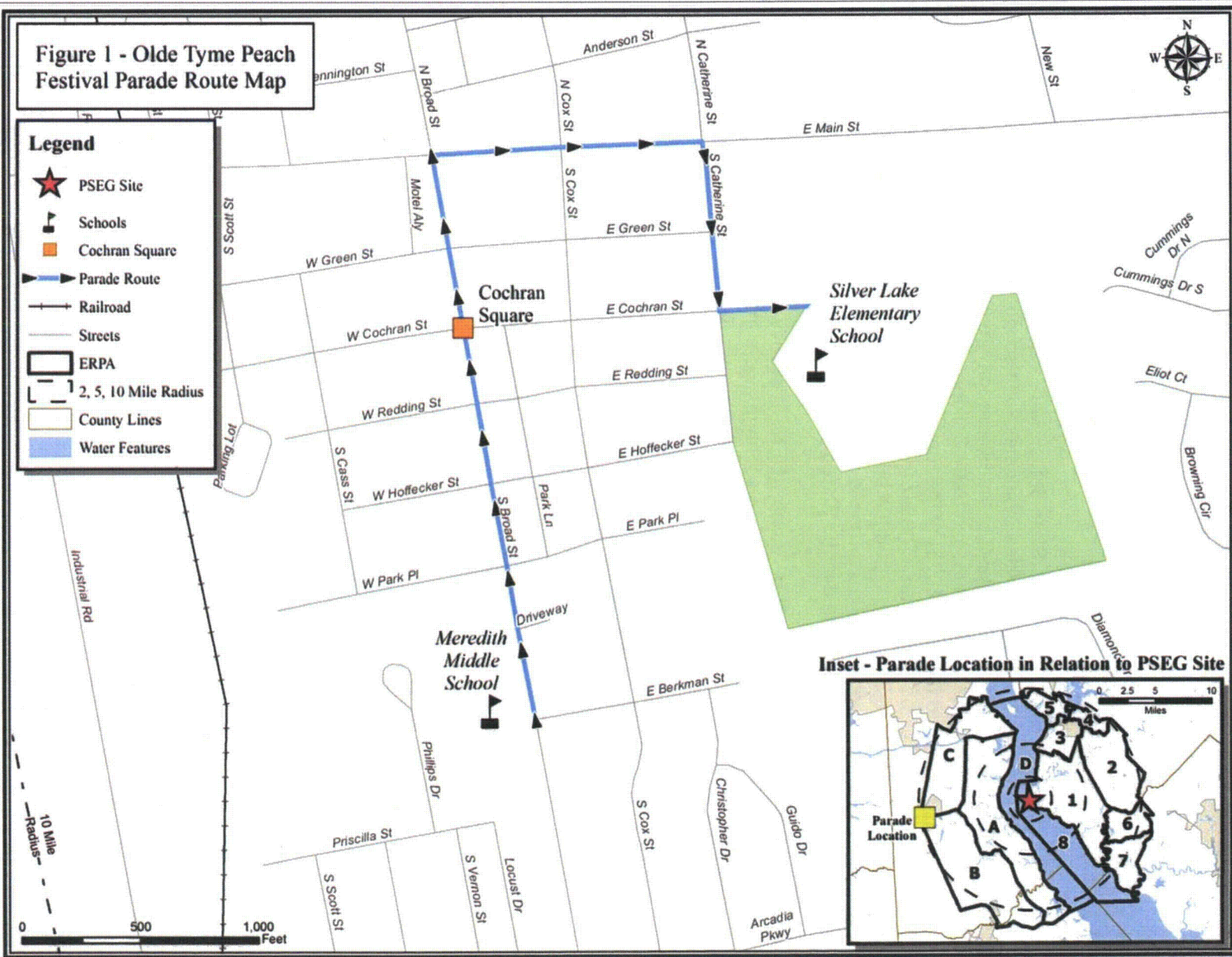
**Attachment 13.03-3-A**



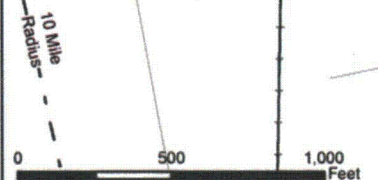
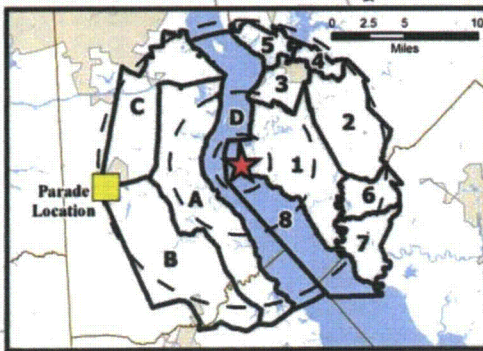
**Figure 1 - Olde Tyme Peach Festival Parade Route Map**

**Legend**

- ★ PSEG Site
- 🏫 Schools
- 📍 Cochran Square
- ➡ Parade Route
- Railroad
- Streets
- ▭ ERPA
- ┌ 2, 5, 10 Mile Radius
- ▭ County Lines
- ▭ Water Features



**Inset - Parade Location in Relation to PSEG Site**



**Question 13.03-4:**

*Table 8-2, "School Population Demand Estimate," lists 15,059 students which includes all of the schools identified in Table E-1, "Schools within the PSEG Site EPZ," and some of the schools from Table E-2, "Day Care Facilities within the PSEG Site EPZ." Explain in the ETE Report why only some of the Table E-2 schools were included in the analysis.*

**PSEG Response to NRC RAI:**

Attachment 1100-A1 to SOP 1100 of the State of Delaware Radiological Emergency Plan, Rev 8, January 2008, includes day care facilities evacuating with schools. Six of the seven day care facilities in Delaware identified in Table E-2 of the ETE report are listed in Attachment 1100-A1. The only facility not listed is the Townsend Early Childhood Center. This facility opened in the fall of 2008, after Rev 8 (January 2008) of the State plan was issued, which is why the day care was not identified in the State plan. The six facilities identified in the State plan were included in Table 8-2 of the ETE report, and the buses needed to evacuate these facilities were considered when computing ETE. The Townsend Early Childhood Center was not included in Table 8-2 because it was not identified in the State plan.

The Delaware Emergency Management Agency (DEMA) recently updated SOP 1100 (Rev 10, December 2010) of the State Plan. The following changes were made in Rev 10:

- ABC1 Child Care Learning, Bethesda Child Development Center, Bright Beginnings Pre-School and Green Acres Pre-School were removed from Attachment 1100-A1 as these facilities are day care only and are not evacuated with schools.
- Townsend Early Childhood Center was added to Attachment 1100-A1. This facility, as well as Cedar Lane Early Childhood Center and Appoquinimink Early Childhood Center are kindergartens and are evacuated with schools.

The Townsend Early Childhood Center has a student enrollment of 202 students (see Table E-2 of the ETE report); assuming a bus capacity of 70 students (see Section 8.2 of the ETE report), 3 buses are needed to evacuate this facility. As noted in the second paragraph on page 8-1 of the ETE report, transit vehicles (buses) are treated as being equivalent to two passenger vehicles due to their longer size and more sluggish operating characteristics. Thus, the addition of 3 buses to evacuate this facility is equivalent to 6 vehicles.

There were 8 buses needed for ABC1 Child Care Learning, Bethesda Child Development Center, Bright Beginnings Pre-School and Green Acres Pre-School based on the information provided in Table 8-2 of the ETE report. The deletion of these facilities from the table results in a decrease of 16 vehicles. Therefore, the net change is a reduction of 10 vehicles in Table 8-2, when combined with the vehicles added for Townsend Early Childhood Center.

Table 6-4 of the ETE report indicates that there are 66,353 vehicles evacuating during a typical scenario (Scenarios 6, 7 and 8) when school is in session. The net change of 10 vehicles represents 0.15% of the evacuating traffic stream ( $10 \div 66,353 \times 100\% = 0.015\%$ ) and will not impact the ETE values reported in Table 7-1.

Attachment 22 – Evacuation Element – of the State of New Jersey Radiological Emergency Response Plan does not provide for evacuation of day care facilities. As such, the seven day care facilities identified in the New Jersey portion of the EPZ in Table E-2 of the ETE report were not included in Table 8-2 of the ETE report when computing the buses needed to evacuate

schools within the EPZ. As noted in the final sentence of page 8-1 of the ETE report, "it was assumed for the ETE study that children at day-care centers are picked up by parents or guardians and that the time to perform this activity is captured in the trip generation times discussed in Section 5." This assumption is applicable to the day care facilities within the New Jersey portion of the EPZ.

**Associated PSEG Site ESP Application Revisions:**

1. Table 8-2 will be revised in a future revision of the ETE report to add the Townsend Early Childhood Center to the New Castle County, DE Schools and to remove those day care facilities that are not evacuated with schools.
2. Table 8-3 will be revised in a future revision of the ETE report to add the Townsend Early Childhood Center to Schools, and remove Bright Beginnings Preschool, Green Acres Preschool, ABC1 Child Care Learning and Bethesda Child Development Center.
3. Table 8-5 will be revised in a future revision of the ETE report to add the Townsend Early Childhood Center to Bus Route 29 and remove Bright Beginnings Preschool from Bus Route 27, Bethesda Child Development Center from Bus Route 30, and ABC1 Child Care Learning Center from Bus Route 34, and delete Bus Route 36 for Green Acres Preschool.
4. Tables 8-6A and 8-6B will be revised in a future revision of the ETE report to add the Townsend Early Childhood Center and remove the Bright Beginnings Preschool, Bethesda Child Development Center, ABC1 Child Care Learning Center and Green Acres Preschool.
5. Table E-1 will be revised in a future revision of the ETE report to add Appoquinimink Early Childhood Center, Townsend Early Childhood Center and Cedar Lane Early Childhood Center to the New Castle, DE Schools.
6. Table E-2 will be revised in a future revision of the ETE report to remove Appoquinimink Early Childhood Center, Townsend Early Childhood Center and Cedar Lane Early Childhood Center from the New Castle, DE Schools.
7. Figure E-1 will be revised in a future revision of the ETE report to add Appoquinimink Early Childhood Center, Townsend Early Childhood Center and Cedar Lane Early Childhood Center.
8. Figure E-2 will be revised in a future revision of the ETE report to remove Appoquinimink Early Childhood Center, Townsend Early Childhood Center and Cedar Lane Early Childhood Center.
9. Appendix M will be revised in a future revision of the ETE report to remove bus routes for ABC1 Child Care Learning Center, Bright Beginnings Preschool, Bethesda Child Development Center, and Green Acres Preschool, and to add a bus route for Townsend Early Childhood Center.

**Attachments/Enclosures to Response to NRC:**

1. Enclosure 2 provides a markup of the proposed ETE revision.

**Question 13.03-5:**

*Table 8-2 lists 275 students at St. George's Technical High School, however upon review, the schools website lists 1,000 enrolled students were identified. The review also found additional schools, including St. Mary's School, Bacons Neck School and Union School, located within the EPZ.*

*A. Explain whether 1,000 students for St. George's Technical High School should be used in the analysis, and include this in the ETE Report, if appropriate.*

*B. Explain whether St. Mary's School, Bacons Neck School and Union School should be included in the ETE, and include them, if appropriate.*

**PSEG Response to NRC RAI:**

- A. The 275 students identified in Table 8-2 for St. George's Technical High School was obtained from SOP 1100 of the State of Delaware Radiological Emergency Plan, Rev 8, January 2008.

The ETE contractor contacted St. George's Technical School at 3:00pm on 12/20/2010 to confirm the enrollment for the school. The representative from the school indicated that the 2010 enrollment for the school is 1,035 students.

Tables 8-2 and E-1 will be revised in a future revision of the ETE report to reflect an enrollment of 1,035 students for St. George's Technical School.

The Delaware Emergency Management Agency was notified of this discrepancy and the State of Delaware Radiological Emergency Plan has been updated accordingly.

As noted in Section 8.2 of the ETE report, bus capacity for middle and high schools is 46 students. Therefore, 23 buses ( $1,035 \div 46$ ) are needed to evacuate St. George's Technical School versus 6 buses ( $275 \div 46$ ) shown in Table 8-2 of Rev. 0 of the ETE report, a difference of 17 buses. As noted in the second paragraph on page 8-1 of the ETE report, transit vehicles (buses) are treated as being equivalent to two passenger vehicles due to their longer size and more sluggish operating characteristics. Thus, the difference of 17 buses is equivalent to 34 vehicles.

Table 6-4 of the ETE report indicates that there are 66,353 vehicles evacuating during a typical scenario (Scenarios 6, 7 and 8) when school is in session. As noted in the response to RAI 13.03-04, there is a net reduction of 5 buses or 10 vehicles due to the changes in the day care facilities for Delaware. Those changes, combined with the difference of 34 vehicles due to the larger enrollment at St. George's Technical School represents a net increase of 24 vehicles, which is less than 0.1% of the evacuating traffic stream ( $24 \div 66,353 \times 100\% = 0.04\%$ ) and will not impact the ETE values reported in Table 7-1.

- B. Attachment 22, Table A-5 of the State of New Jersey Radiological Emergency Response Plan identifies all of the active schools in the New Jersey portion of the EPZ.

St. Mary's School was located at 31 Oak St in Salem, NJ. The New Jersey State Police have confirmed that this school is closed.

Bacons Neck School was located in Greenwich, NJ. The New Jersey State Police have confirmed that this school is closed.

Union School was located at 262 Fort Elfsborg-Hancocks Bridge Rd in Elsinboro, NJ. The building is now a residence.

The St. Mary's, Bacons Neck and Union Schools should not be included in the ETE as they are no longer operational schools.

**Associated PSEG Site ESP Application Revisions:**

1. Table 8-2 will be revised in a future version of the ETE report to show the correct enrollment of 1,035 students, 135 staff and 23 bus runs for St. George's Technical High School.
2. Table E-1 will be revised to show 1,035 students and 135 staff for St. George's Technical High School.

**Attachments/Enclosures to Response to NRC:**

1. Enclosure 2 provides a markup of the proposed ETE revision.

**Question 13.03-6:**

*The State of New Jersey Radiological Response Plan, Table B-2, "Non-Institutionalized Special Needs Population within the Emergency Planning Zone by Zip Codes," identifies 140 special needs residents that may need assistance evacuating from New Jersey ERPAs. Explain in the ETE Report the reason for the difference between the 34 individuals identified in New Jersey in Section 8.5, "Special Needs Population," of the ETE Report and the 140 identified in the state plan.*

**PSEG Response to NRC RAI:**

As noted on page 11 of Attachment 22, Element B of the State of New Jersey Radiological Emergency Response Plan (Rev. 8, March 2008), "The licensee, in cooperation with State OEM, maintains a computer tracking of this information provided by annual mail back surveys." The database of registered special needs persons within the EPZ is continuously maintained; however, the State plan is updated annually. Based on the March 2008 date of the State plan, the 140 data is most likely from the year 2007.

The New Jersey State Police (NJSP) Office of Emergency Management was contacted in 2009 to obtain the most recent number of registered special needs persons within the EPZ. The number at the time was 34 and is documented in Section 8.5 of the ETE report. Based on recent discussions with the NJSP, there are now 45 registered special needs persons within the EPZ for the 2010 Year, further illustrating how the data varies over time.

The data needed for the ETE study was gathered in 2009 and the ETE study was conducted in 2009. As such, the value of 34 registered special needs persons for 2009 used in the ETE study is valid.

**Associated PSEG Site ESP Application Revisions:**

None.

**Attachments/Enclosures to Response to NRC:**

None.

**Question 13.03-7:**

*Table 7-1C, "Time to Clear the Indicated Area of 95 Percent of the Affected Population," shows that the time to evacuate the 5 mile area is less than the time to evacuate the 2 mile area. Explain in the ETE Report why the time to evacuate the 5 mile area is less than the time to evacuate the 2 mile area.*

**PSEG Response to NRC RAI:**

Page 7-4 of the ETE report explains why the evacuation time for the 5 mile area is less than that of the 2 mile area in Table 7-1C "Time to Clear the Indicated Area of 95 Percent of the Affected Population":

*Comparison of ETE for Regions R01, R02 and R03 present anomalies at the 50<sup>th</sup>, 90<sup>th</sup> and 95<sup>th</sup> percentiles wherein ETE for Regions R02 and R03 are less than those for Region R01, contrary to what one may expect. These anomalies are a result of the differing number of evacuating vehicles for each Region. As shown in Table 7-2, the 5-mile region includes ERPAs 1, 8, A and D, while the 2-mile region includes ERPAs 1, 8 and D. According to the output files for Scenario 6, there are 18,783 vehicles evacuating for Region R02 and 2,002 vehicles evacuating for Region R01. Suppose that 100 vehicles are delayed due to congestion along the access road within the 2-mile region. These 100 vehicles constitute 5% ( $100 \div 2,002$ ) of the evacuating vehicles for Region R01, while they only constitute 0.5% ( $100 \div 18,783$ ) of the evacuating vehicles for Region R02. Thus, these 100 vehicles could impact the 95<sup>th</sup> percentile ETE for Region R01, whereas they would have no effect on Region R02. This anomaly explains why ETE for Region R02 and R03 are less than those for Region R01 for certain scenarios and percentiles. Note, however, that this anomaly does not exist at the 100<sup>th</sup> percentile.*

**Associated PSEG Site ESP Application Revisions:**

None.

**Attachments/Enclosures to Response to NRC:**

None.

**Question 13.03-8:**

*Section 1.1, "Overview of the ETE Process," states that local and state police should review all traffic control plans. Was the ETE Report reviewed by local stakeholders, and how have their comments have been addressed?*

**PSEG Response to NRC RAI:**

The local stakeholders, New Jersey State Police, Delaware Emergency Management Agency, Cumberland County Office of Emergency Management, Salem County Office of Emergency Management, New Jersey Bureau of Nuclear Engineering, New Castle County Office of Emergency Management and the Kent County Emergency Management Agency were actively involved in the ETE process and in review of the ETE report. The following timeline summarizes the interaction with the local stakeholders:

- March 27, 2009: At a meeting of local stakeholders from Delaware (DE) and New Jersey (NJ) the need for a new ETE is discussed.
- April 8, 2009: Further discussions about the ETE are held with NJ stakeholders
- April 16, 2009: PSEG meets with DE stakeholders to discuss the telephone survey being done as part of the ETE study
- April 30, 2009: A formal project kickoff meeting with representatives from DE and NJ is held
- May 4, 2009: Key assumptions for the ETE study are sent in a letter to emergency planning representatives from DE and NJ
- July 8, 2009: ETE results are presented to local stakeholders from DE and NJ
- September 30, 2009: PSEG meets with the offsite agencies and summarizes the ETE report
- November 5, 2009: PSEG provides ETE report to the offsite agencies for review
- December 22, 2009: New Jersey State Police participate in a teleconference to resolve the remainder of the comments from the offsite agencies

The local stakeholders did review the ETE report, including the traffic control plans. Any comments provided by the stakeholders were resolved and incorporated into the final ETE report as necessary. The signed certification letters provided by the New Jersey State Police and the Delaware Emergency Management Agency and included in the Early Site Permit Application (ESPA) - see Part 5, Emergency Plan, Attachment 2 - indicate their acceptance of the ESPA, which includes the ETE report.

**Associated PSEG Site ESP Application Revisions:**

1. Item 4 in Section 1.1 will be revised in a future revision to the ETE report as follows:

Defined a traffic management strategy. Traffic control is applied at specified Traffic Control Points (TCP) located within the Emergency Planning Zone (EPZ). Local and state police personnel ~~should review~~have reviewed all traffic control plans.



2. Item 3 on Page 9-2 will be revised in a future revision to the ETE report as follows:

Consultation with emergency management and enforcement personnel.

Trained personnel who are experienced in controlling traffic and are aware of the likely evacuation traffic patterns ~~should review~~ have reviewed these control tactics.

3. Item 4 on Page 9-2 will be revised in a future revision to the ETE report as follows:

Prioritization of TCPs.

Application of traffic control at some TCPs will have a more pronounced influence on expediting traffic movements than at other TCPs. For example, TCPs controlling traffic originating from areas in close proximity to the power plant could have a more beneficial effect on minimizing potential exposure to radioactivity than those TCPs located far from the power plant. Thus, during the mobilization of personnel to respond to the emergency situation, those TCPs which are assigned a higher priority should be manned earlier. These priorities ~~should behave been~~ reviewed by state/county emergency management representatives and by law enforcement personnel.

4. The second paragraph on Page 9-2 will be revised in a future revision to the ETE report as follows:

The control tactic at each TCP is presented in each schematic that appears in Appendix G. ~~It is suggested that the~~ The traffic management plan ~~behaves been~~ has been reviewed by the state and county emergency planners with local and state police. Specifically the number and locations of the suggested TCP and ACP ~~should behave been~~ been reviewed in detail, and the indicated resource requirements ~~should be have been~~ have been reconciled with current assets.

5. Item 1 in Section 13 will be revised in a future revision to the ETE report as follows:

The traffic management plan ~~should behaves been~~ has been reviewed by state and county emergency planners with local and state police (See Section 9 and Appendix G). Specifically...

- The number and locations of suggested Traffic Control Points (TCP) and Access Control Points (ACP) ~~should behave been~~ been reviewed in detail.
- The indicated resource requirements (personnel, cones, barriers, etc.) ~~should behave been~~ have been reconciled with current assets.

6. The second paragraph on Page G-2 will be revised in a future revision to the ETE report as follows:

Detailed information about the existing TCP and ACP can be found in the Delaware State Plan, SOP700, "Traffic and Access Control", and in Appendix 5 of Attachment 22 to the State of New Jersey Salem/Hope Creek Nuclear Generating Stations Radiological Emergency Response Plan. Table G-4 compares the suggested TCP and ACP with the existing TCP and ACP. Those TCP and ACP which are not currently identified in the state plans should be considered in future revisions to the state plans. ~~Consideration should be given that the~~ The traffic

management plan detailed in this appendix has been reviewed by state and county emergency planners with local and state police.

**Attachments/Enclosures to Response to NRC:**

1. Enclosure 2 provides a markup of the proposed ETE revision.

**PSEG Letter to USNRC, ND-2011-0002**

**ENCLOSURE 2**

**PROPOSED REVISIONS**

**PART 5 – EMERGENCY PLAN**

**ATTACHMENT 11 – DEVELOPMENT OF EVACUATION TIME ESTIMATES**

**MARKEDUP PAGES**

1-1  
3-11  
3-14  
3-15  
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9-2  
13-1  
E-2  
E-3  
E-4  
E-7  
G-2  
M-1  
M-28  
M-29  
M-30  
M-34  
M-36

## 1.1 Overview of the ETE Process

The following outline presents a brief description of the work effort in chronological sequence:

1. Information Gathering:
  - Defined the scope of work in discussions with representatives from Sargent & Lundy and from PSEG.
  - Attended meetings with emergency planners from DEMA and NJSP to identify issues to be addressed and resources available.
  - Conducted a detailed field survey of the Emergency Planning Zone (EPZ) highway system and of area traffic conditions.
  - Obtained demographic data from census and state agencies.
  - Conducted a random sample telephone survey of EPZ residents.
  - Conducted a data collection effort to identify and describe schools, special facilities, major employers, transportation providers, and other important sources of information.
2. Estimated distributions of Trip Generation times representing the time required by various population groups (permanent residents, employees, and transients) to prepare (mobilize) for the evacuation trip. These estimates are primarily based upon the random sample telephone survey.
3. Defined Evacuation Scenarios. These scenarios reflect the variation in demand, in trip generation distribution and in highway capacities, associated with different seasons, day of week, time of day and weather conditions.
4. Defined a traffic management strategy. Traffic control is applied at specified Traffic Control Points (TCP) located within the Emergency Planning Zone (EPZ). Local and state police personnel ~~should~~ review have reviewed all traffic control plans.

<b>Table 3-4. Summary of Transients and Transient Vehicles</b>		
<b>ERPA</b>	<b>2009 Transients*</b>	<b>Transient Vehicles</b>
<b>New Jersey</b>		
1	55	19
2	340	164
3	151	79
4	<b>No Transients</b>	
5	355	121
6	10	6
7	120	42
8	<b>No Transients</b>	
<b>NJ Total</b>	<b>1,031</b>	<b>431</b>
<b>Delaware</b>		
A	1,128	592
B	330	118
C	834	382
D	<b>No Transients</b>	
<b>DE Total</b>	<b>2,292</b>	<b>1,092</b>
<b>TOTAL</b>	<b>3,323</b>	<b>1,523</b>

\* Transient data were gathered in 2009 through telephone conversations with the transient facilities and through discussions with the New Jersey State Police and the Delaware Emergency Management Agency. Growth rates are not available for transient population as they are for permanent resident population through the Census. Therefore, 2009 was used as the base year for transient data.

### 3.3 Employees

Employees who work within the EPZ fall into two categories:

- Those who live and work in the EPZ
- Those who live outside of the EPZ and commute to jobs within the EPZ.

Those of the first category are already counted as part of the permanent resident population. To avoid double counting, we focus only on those employees commuting from outside the EPZ who will evacuate along with the permanent resident population.

Year 2000 Census journey to work data for New Jersey and Delaware was used to estimate the number of employees commuting into the EPZ. For New Jersey, this data defines the number of persons working in a specified municipality by their place of residence (origin-municipality). GIS software was used to estimate the percentage of population in each municipality that resides within the EPZ – these percentages are then applied to the journey to work data to estimate the number of people commuting to work in the New Jersey portion of the EPZ from areas outside of the EPZ. The resulting data indicates that, on average, 76% of workers in New Jersey commute to work from outside the EPZ. The municipality specific percentages are shown in Table E-7. PSEG provided the zip codes their employees commute from; a GIS analysis was done to estimate the percentage of PSEG employees commuting into the EPZ based on the zip code data provided.

The journey to work data available for Delaware is limited to origin and destination by county, not municipality. The State of Delaware only has three counties; therefore this data was not entirely useful. The majority of the population and employment in New Castle County is in Wilmington and Newark, neither of which is located within the EPZ. It is assumed that 75% of employees in the Delaware portion of the EPZ commute to work from outside the EPZ.

Table E-7 identifies the major employers within the EPZ. The names, locations, and the maximum number of employees per shift were identified through review of the local emergency plans, discussions with the New Jersey State Police and the Delaware Emergency Management Agency, and through Internet searches. In Table E-7, the Employees (Max Shift) column in Table E-7 is multiplied by the % Non-EPZ factor discussed above to determine the number of employees who are not residents of the EPZ. This removes any employee within the EPZ who would already be counted as a permanent resident.

A vehicle occupancy of 1.03 employees per vehicle obtained from the telephone survey was used to determine the number of evacuating employee vehicles for all major employers, except PSEG, which is discussed in Section 3.6.

Table 3-5 presents non-EPZ Resident employee and vehicle estimates by ERPA. Figures 3-6 and 3-7 present these data by sector.

<b>Table 3-5. Summary of Non-EPZ Employees and Employee Vehicles</b>		
<b>ERPA</b>	<b>2009 Employees*</b>	<b>Employee Vehicles</b>
<b>New Jersey</b>		
1	1,757	1,415
2	44	43
3	702	681
4	530	514
5	<b>No Employment</b>	
6		
7		
8		
<b>NJ Total</b>	<b>3,033</b>	<b>2,653</b>
<b>Delaware</b>		
A	<b>No Employment</b>	
B	469	456
C	1,222	1,184
D	<b>No Employment</b>	
<b>DE Total</b>	<b>1,691</b>	<b>1,640</b>
<b>TOTAL</b>	<b>4,724</b>	<b>4,293</b>

\*Employment data were gathered in 2009 through telephone conversations with major employers and through discussions with the New Jersey State Police and the Delaware Emergency Management Agency. Growth rates are not available for employees as they are for permanent resident population through the Census. Therefore, 2009 was used as the base year for employment data.

### 3.6 Special Events

As noted in assumption 6 of Section 2.2, three special events (Scenarios 13, 14 and 15) were considered –construction of the new plant coincident with a refueling outage at one of the operational units at the site with the existing access road and with the proposed causeway, and a refueling outage only – all in the year 2019. Consistent with the Traffic Impact Analysis (TIA) study submitted with the Environmental Report, the peak construction period is estimated at October 2019, with workforce estimates of 4,100 total construction workers. There will be three construction shifts, with 2,460 workers (60% of total workforce) during the peak (midday) shift. There are 1,544 PSEG employees and 160 supplemental personnel (contractors) at the site during regular operations, for a total population of 1,704 employees at the site, which agrees with Figure 3-6 and Table E-7. During an outage, the number of supplemental personnel increases to 850 total employees. Based on traffic count data collected for the TIA study during a 2009 outage and during regular daily operations, there are 1,364 vehicles onsite at the peak time during the midday during regular operations (Figure 11 of the TIA), and 1,293 vehicles onsite at the peak time during the midday during an outage (Figure 14 of the TIA). It is estimated that 600 new plant personnel (including NRC and PSEG personnel overseeing construction) will be at the new site during peak times. Using the data from Figure 14 of the TIA, 44.9% of the new plant personnel are present at the peak time midday. Thus, 269 new plant personnel (600 x 44.9%) are present for Scenarios 13 and 14.

Average vehicle occupancies of 1.30 construction workers per vehicle and 1.00 new plant personnel per vehicle are used to convert workers to vehicles, consistent with the TIA study. The vehicles for the existing unit personnel and outage personnel are taken directly from the traffic counts conducted for the TIA study, as noted above. Therefore, there is no vehicle occupancy factor applied to existing PSEG personnel and outage personnel. Applying the construction and new plant personnel occupancy factors results in 2,161 special event vehicles ( $2,460 \div 1.3 + 269 \div 1.0$ ) for Scenarios 13 and 14. The outage vehicles present for Scenario 15 have been grouped with the existing PSEG employees as there is no way to differentiate outage vehicles from existing plant personnel vehicles in the TIA traffic counts. The existing access road was used as a single lane eastbound for the Scenarios 13 and 15. The proposed causeway, modeled as a single lane outbound connecting the PSEG Site to local roads in Elsinboro Township (see Appendix N for additional information), was used for Scenario 14. Permanent resident population and shadow population were extrapolated to 2019 for all special event scenarios. Table 3-7 summarizes the existing plant, new plant, outage and construction personnel and vehicles considered for the special event scenarios.

The existing access road is actually a three lane road with a single lane currently used for each direction of travel and the middle lane unused. In the past, during construction, the center lane was used and the direction of travel in that lane was reversed using gantry lights depending on the time of day. Appendix I explores the sensitivity of ETE for Scenario 13 when using gantry lights to add an additional lane outbound to the existing site access roadway to accommodate the additional traffic. Appendix N compares the ETE for Scenarios 13 and 14 in order to estimate the impact of building the proposed causeway. The ETE presented for Scenarios 13 and 15 are for current roadway conditions (a single lane outbound) on the existing access road.

The annual Olde Tyme Peach Festival in Middletown, Delaware attracts 2,500 additional transients into the EPZ during peak times. A sensitivity study was conducted, and it was found that the ETE are not affected by this event.



Table 8-2. School Population Demand Estimates							
ERPA	Distance (miles)	Direction	School Name	Municipality	Enrollment	Staff	Bus Runs Required
<b>Salem County, NJ Schools</b>							
1	7.0	E	Lower Alloways Creek Elementary School	Salem	222	78	4
2	8.4	NE	Quinton Elementary School	Quinton	358	61	6
3	5.4	NNE	Elsinboro Township Elementary School	Salem	108	17	2
3	7.4	NNE	John Fenwick Elementary School	Salem	300	80	5
3	6.8	NNE	Salem High School	Salem	600	110	14
3	7.6	NNE	Salem Middle School	Salem	580	110	13
4	9.0	NNE	The ARC of Salem County	Salem	147	28	4
<b>Salem County Totals:</b>					<b>2,315</b>	<b>484</b>	<b>48</b>
<b>Cumberland County, NJ Schools</b>							
6	10.6	E	Stow Creek Township Elementary School	Bridgeton	135	20	2
6	10.2	E	Woodland Country Day School	Bridgeton	159	38	3
7	11.6	ESE	Morris Goodwin Elementary School	Greenwich	77	12	2
<b>Cumberland County Totals:</b>					<b>371</b>	<b>70</b>	<b>7</b>
<b>New Castle County, DE Schools</b>							
A	5.8	NW	Van Hook Walsh School Inc.	Middletown	4	3	1
B	9.6	WSW	Everett Meredith Middle School	Middletown	1,250	95	28
B	9.6	WSW	Groves Adult High School	Middletown	160	20	4
B	8.3	W	Middletown High School	Middletown	1,707	145	38
B	9.3	W	Silver Lake Elementary School	Middletown	670	60	10
B	8.5	WSW	St. Andrew's School	Middletown	270	125	6
B	8.9	WSW	St. Anne's Episcopal School	Middletown	325	55	8
B	9.6	WSW	Townsend Elementary School	Townsend	315	55	5
C	9.4	NW	AdvoServ School	Bear	123	140	3
C	8.1	WNW	Alfred Waters Middle School	Middletown	777	60	17
C	7.9	W	Brick Mill Elementary School	Middletown	770	80	11
C	8.0	WNW	Cedar Lane Elementary School	Middletown	670	70	10
C	7.8	NW	Gunning Bedford Middle School	New Castle	950	85	21
C	10.0	NW	Kathleen H. Wilbur Elementary School (formerly Wrangle Hill Elementary School)	Bear	1,150	100	17
C	9.1	W	Louis L. Redding Middle School	Middletown	800	70	18
C	7.7	NW	Southern Elementary School	New Castle	1,065	100	16
C	7.7	WNW	St. George's Technical High School	Middletown	2751.0 35	30 135	623
C	8.0	WNW	Bright Beginnings Pre-School	Middletown	47	6	4
C	8.0	WNW	Cedar Lane Early Childhood Center	Middletown	331	30	5
B	9.4	W	Bethesda Child Development Center	Middletown	240	32	3
B	9.6	W	ABC1 Child Care Learning Center	Middletown	70	20	4
B	9.6	WSW	Appoquinimink Early Childhood Center	Middletown	260	40	4
C	6.5	W	Green Acres Pre-School	Odessa	174	16	3
B	9.5	SW	Townsend Early Childhood Center	Townsend	202	26	3
<b>New Castle County Totals:</b>					<b>12,373</b>	<b>1,437</b>	<b>236,248</b>
<b>EPZ Totals:</b>					<b>15,520</b>	<b>2,048</b>	<b>294,303</b>

<b>Table 8-3. School Reception Centers</b>	
<b>School</b>	<b>Reception Center</b>
Elsinboro Township Elementary School	<b>Mary Shoemaker School</b>
Lower Alloways Creek Township Elementary School	<b>Schalick High School</b>
Quinton Township Elementary School	
John Fenwick School	<b>Penns Grove Middle School</b>
Salem City High School	<b>Penns Grove High School</b>
Salem City Middle School	
Morris Goodwin School	<b>Cumberland County Regional High School</b>
Stow Creek Township School	
Woodland Country Day School	
AdvoServ School	<b>Brandywine High School</b>
<del>Bright Beginnings Preschool</del>	
St. Georges Technical High School	
Gunning Bedford Middle School	<b>Mount Pleasant High School</b>
Kathleen H. Wilbur Elementary School (formerly Wrangle Hill Elementary School)	
Southern Elementary School	
Van Hook Walsh School	<b>Ben Rohe Residence</b>
Cedar Lane Elementary School	<b>Dover High School</b>
<del>Green Acres Preschool</del>	
Silver Lake Elementary School	
Townsend Elementary School	
Townsend Early Childhood Center	
Alfred Waters Middle School	
Groves Adult High School	
Brick Mill Elementary School	
Cedar Lane Early Childhood Center	
Middletown High School	<b>Caesar Rodney High School</b>
Everett Meredith Middle School	
Appoquinimink Early Childhood Center	
<del>ABC1 Child Care Learning</del>	
Redding Middle School	
St. Andrew's School	
<del>Bethesda Child Development Center</del>	

Table 8-5: Bus Route Descriptions		
Bus Route Number	Description	Nodes Traversed from Route Start to EPZ Boundary
1	Delaware - Blue Route	576, 575, 574, 573, 572, 571, 570, 569, 562, 561, 560, 559, 558, 557, 556, 722, 723, 724, 725, 789, 726, 727, 790
2	Delaware - Green Route	854, 867, 667, 668, 681, 682, 683, 684, 856, 45, 44, 855, 804, 42, 803, 41, 787, 39, 37, 861, 33, 728, 32, 30
3	Delaware - Red Route	673, 674, 675, 676, 677, 678, 679, 861, 33, 728, 32, 30
4	Delaware - Pink Route	546, 545, 544, 543, 542, 731, 732, 730, 733, 734, 735, 739, 740, 21, 911, 23, 738, 26, 29, 30
5	Delaware - Purple Route	51, 52, 873, 511, 863, 862, 64, 65, 66, 67, 69, 771, 70
6	Delaware - Brown Route	593, 594, 596, 597, 598, 599, 600, 601, 602, 70
7	NJ - Route 1	485, 484, 483, 482, 481, 480, 479, 837, 836, 350, 276, 275, 273, 274, 304, 819
8	NJ - Route 2A	391, 392, 393, 394, 335, 395, 396, 397, 398, 286
9	NJ - Route 2B	359, 838, 839, 840, 841, 842, 843, 844, 280, 279, 278, 820, 276, 275, 273, 274, 304, 819
10	NJ - Route 3A	475, 476, 478, 479, 837, 836, 350, 276, 275, 273, 274, 304, 819
11	NJ - Route 3B	350, 831, 443, 442, 446, 272, 833, 445, 273, 274, 271, 270, 269, 270, 269, 268, 266, 265
12	NJ - Route 4	274, 304, 819, 305, 307, 310
13	NJ - Route 5	454, 455, 456, 457, 459, 460
14	NJ - Route 6	367, 368, 369, 370, 371, 372, 373, 374, 375
15	NJ - Route 7	825, 375, 377, 378, 379, 381, 382, 383
16	Elsinboro Township Elementary School	741, 438, 437, 439, 440, 441, 443, 444, 830, 273, 274, 304, 819
17	Quinton Township Elementary School	281, 282, 283, 284, 285, 286
18	Lower Alloways Creek Elementary School	391, 392, 393, 394, 335, 395, 396, 397, 398, 286
19	John Fenwick Elementary School	831, 834, 275, 273, 445, 833, 272, 271, 270, 269, 268, 266, 265
20	Salem Middle School	444, 445, 833, 272, 271, 270, 269, 268, 266, 265
21	Salem High School	473, 831, 834, 275, 273, 445, 833, 272, 271, 270, 269, 268, 266, 265
22	The ARC of Salem County	304, 819
23	Morris Goodwin School	823, 822, 821, 377, 378
24	Stow Creek Township	340, 341, 342
25	Woodland Country Day School	339, 340, 341, 342
26	Southern Elementary School, Gunning Bedford Elementary School	663, 664, 648, 771, 70, 72, 74, 807
27	Cedar Lane Elementary School, Alfred Waters Middle School, Bright Beginnings-Pre-School, Cedar Lane Early Childhood Learning Center	56, 55, 48, 801, 47, 46, 785, 40, 786, 38, 36, 35, 28, 27, 857
28	Silver Lake Elementary School	903, 681, 682, 683, 684, 856, 45, 46, 785, 40, 786, 38, 36, 35, 28, 27, 857
29	Townsend Elementary School, Townsend Early Childhood Center	709, 679, 680, 861, 33, 728, 32, 30, 29, 26, 23, 24
30	Redding Middle School, Bethesda Child-Development Center	681, 682, 683, 684, 856, 45, 46, 785, 40, 786, 38, 36, 35, 28, 27, 857
31	Middletown High School	683, 684, 856, 45, 46, 785, 40, 786, 38, 36, 35, 28, 27, 857
32	AdvoServ	67, 69, 771, 70, 75, 940
33	St. Andrew's School, St. Anne's Episcopal School	673, 674, 675, 676, 677, 678, 679, 680, 861, 33, 728, 32, 30, 29, 26, 23
34	Everett Meredith Middle School, Groves Adult High School, ABC1 Child-Care-Learning-Center, Appoquinimink Early Childhood Center	668, 681, 682, 683, 684, 856, 45, 46, 785, 40, 786, 38, 36, 35, 28, 27, 857
35	Van Hook Walsh School	876, 875, 874, 873, 511, 863, 59, 62, 800, 68, 73, 74
36	Green Acres Pre-School	49, 42, 803, 41, 787, 39, 37, 861, 33, 728, 32, 30, 29, 26, 23
37	Wrangle Hill Elementary School	603, 806, 71, 72, 74, 807
38	Brick Mill Elementary School	812, 684, 856, 45, 46, 785, 40, 786, 38, 36, 35, 28, 27, 857
39	St. George's Technical High School	277, 809, 142, 241, 244, 267, 302, 303, 309, 64, 65, 66, 67, 69, 771, 70, 75, 940

Table 8-6A. School Evacuation Time Estimates - Good Weather										
School	Driver Mobilization Time(min)	Loading Time (min)	Dist. to EPZ Boundary (mi.)	Average Speed (mph)	Adjusted Speed (mph)	Travel Time to EPZ Bdry (min)	ETE (hr:min)	Dist. EPZ Bdry to R.C. (mi.)	Travel Time EPZ Bdry to RC (min)	ETE to R.C. (hr:min)
<b>Salem County, NJ Schools</b>										
Lower Alloways Creek Elementary School	90	15	4.61	48.89	45.00	7	1:55	10	14	2:10
Quinton Elementary School	90	15	4.16	55.23	45.00	6	1:55	10	14	2:05
Elsinboro Township Elementary School	90	15	5.35	37.95	37.95	9	1:55	8	11	2:05
John Fenwick Elementary School	90	15	4.28	8.57	8.57	30	2:15	10	14	2:30
Salem High School	90	15	4.78	9.30	9.30	31	2:20	10	14	2:30
Salem Middle School	90	15	3.80	12.33	12.33	19	2:05	10	14	2:20
The ARC of Salem County	90	15	1.22	49.77	45.00	2	1:50	10	14	2:05
<b>Cumberland County, NJ Schools</b>										
Stow Creek Township Elementary School	90	15	1.86	60.00	45.00	3	1:50	8	11	2:00
Woodland Country Day School	90	15	2.28	59.06	45.00	4	1:50	8	11	2:00
Morris Goodwin Elementary School	90	15	1.47	38.80	38.80	3	1:50	8	11	2:00
<b>New Castle County, DE Schools</b>										
Van Hook Walsh School Inc.	90	15	5.64	61.37	45.00	8	1:55	16	22	2:15
Everett Meredith Middle School	90	15	11.98	40.23	40.23	18	2:05	20	27	2:30
Groves Adult High School	90	15	11.98	40.23	40.23	18	2:05	13	18	2:25
Middletown High School	90	15	10.91	42.06	42.06	16	2:05	20	27	2:30
Silver Lake Elementary School	90	15	11.95	40.29	40.29	18	2:05	13	18	2:25
St. Andrew's School	90	15	8.90	16.18	16.18	34	2:20	20	27	2:50
St. Anne's Episcopal School	90	15	8.90	16.18	16.18	34	2:20	16	22	2:45
Townsend Elementary School	90	15	6.73	21.73	21.73	19	2:05	13	18	2:25
AdvoServ School	90	15	3.58	15.90	15.90	14	2:00	16	22	2:25
Alfred Waters Middle School	90	15	13.53	47.73	45.00	19	2:05	13	18	2:25
Brick Mill Elementary School	90	15	10.89	42.07	42.07	16	2:05	13	18	2:20
Cedar Lane Elementary School	90	15	13.53	47.73	45.00	19	2:05	13	18	2:25
Gunning Bedford Middle School	90	15	3.94	13.98	13.98	17	2:05	16	22	2:25
Kathleen H. Wilbur Elementary School	90	15	1.29	52.23	45.00	2	1:50	16	22	2:10
Louis L. Redding Middle School	90	15	11.76	40.68	40.68	18	2:05	20	27	2:30
Southern Elementary School	90	15	3.94	13.98	13.98	17	2:05	16	22	2:25
St. George's Technical High School	90	15	6.20	16.16	16.16	24	2:10	16	22	2:35
Bright Beginnings Pre-School	90	45	13.53	47.73	45.00	19	2:05	16	22	2:30
Bethesda Child Development Center	90	45	11.76	40.68	40.68	18	2:05	20	27	2:30
ABC1 Child Care Learning Center	90	45	11.98	40.23	40.23	18	2:05	20	27	2:30
Appoquinimink Early Childhood Center	90	15	11.98	40.23	40.23	18	2:05	20	27	2:30
Cedar Lane Early Childhood Center	90	15	13.53	47.73	45.00	19	2:05	13	18	2:25
Townsend Early Childhood Center	90	15	6.73	21.73	21.73	19	2:05	13	18	2:25
Green Acres Pre-School	90	45	10.26	28.54	28.54	22	2:10	13	18	2:26
<b>Maximum for EPZ:</b>							<b>2:20</b>	<b>Maximum:</b>		<b>2:50</b>
<b>Average for EPZ:</b>							<b>2:05</b>	<b>Average:</b>		<b>2:25</b>

Table 8-6B. School Evacuation Time Estimates - Good Weather										
School	Driver Mobilization Time(min)	Loading Time (min)	Dist. to EPZ Boundary (mi.)	Average Speed (mph)	Adjusted Speed (mph)	Travel Time to EPZ Bdry (min)	ETE (hr:min)	Dist. EPZ Bndry to R.C. (mi.)	Travel Time EPZ Bdry to RC (min)	ETE to R.C. (hr:min)
<b>Salem County, NJ Schools</b>										
Lower Alloways Creek Elementary School	100	20	4.61	44.18	40.00	7	2:10	10	15	2:25
Quinton Elementary School	100	20	4.16	49.77	40.00	7	2:10	10	15	2:25
Elsinboro Township Elementary School	100	20	5.35	34.61	34.61	10	2:10	8	12	2:25
John Fenwick Elementary School	100	20	4.28	8.42	8.42	31	2:35	10	15	2:50
Salem High School	100	20	4.78	9.13	9.13	32	2:35	10	15	2:50
Salem Middle School	100	20	3.80	12.11	12.11	19	2:20	10	15	2:35
The ARC of Salem County	100	20	1.22	45.00	40.00	2	2:05	10	15	2:20
<b>Cumberland County, NJ Schools</b>										
Stow Creek Township Elementary School	100	20	1.86	53.86	40.00	3	2:05	8	12	2:15
Woodland Country Day School	100	20	2.28	53.06	40.00	4	2:05	8	12	2:20
Morris Goodwin Elementary School	100	20	1.47	35.05	35.05	3	2:05	8	12	2:15
<b>New Castle County, DE Schools</b>										
Van Hook Walsh School Inc.	100	20	5.64	45.63	40.00	9	2:10	16	24	2:35
Everett Meredith Middle School	100	20	11.98	30.93	30.93	24	2:25	20	30	2:55
Groves Adult High School	100	20	11.98	30.93	30.93	24	2:25	13	20	2:45
Middletown High School	100	20	10.91	31.59	31.59	21	2:25	20	30	2:55
Silver Lake Elementary School	100	20	11.95	30.95	30.95	24	2:25	13	20	2:45
St. Andrew's School	100	20	8.90	14.06	14.06	38	2:40	20	30	3:10
St. Anne's Episcopal School	100	20	8.90	14.06	14.06	38	2:40	16	24	3:05
Townsend Elementary School	100	20	6.73	23.14	23.14	18	2:20	13	20	2:40
AdvoServ School	100	20	3.58	17.08	17.08	13	2:15	16	24	2:40
Alfred Waters Middle School	100	20	13.53	36.40	36.40	23	2:25	13	20	2:45
Brick Mill Elementary School	100	20	10.89	31.58	31.58	21	2:25	13	20	2:45
Cedar Lane Elementary School	100	20	13.53	36.40	36.40	23	2:25	13	20	2:45
Gunning Bedford Middle School	100	20	3.94	9.71	9.71	25	2:25	16	24	2:50
Kathleen H. Wilbur Elementary School	100	20	1.29	22.04	22.04	4	2:05	16	24	2:30
Louis L. Redding Middle School	100	20	11.76	31.12	31.12	23	2:25	20	30	2:55
Southern Elementary School	100	20	3.94	9.71	9.71	25	2:25	16	24	2:50
St. George's Technical High School	100	20	6.20	12.15	12.15	31	2:35	16	24	2:55
Bright Beginnings Pre School	400	20	13.53	36.40	36.40	23	2:25	16	24	2:50
Bethesda Child Development Center	400	20	3.94	31.12	31.12	8	2:10	20	30	2:40
ABC1 Child Care Learning Center	400	20	11.98	30.93	30.93	24	2:25	20	30	2:55
Appoquinimink Early Childhood Center	100	20	11.98	30.93	30.93	24	2:25	20	30	2:55
Cedar Lane Early Childhood Center	100	20	13.53	36.40	36.40	23	2:25	13	20	2:45
Townsend Early Childhood Center	100	20	6.73	23.14	23.14	18	2:20	13	20	2:40
Green Acres Pre School	400	20	10.26	29.71	29.71	21	2:25	13	20	2:45
<b>Maximum for EPZ:</b>							<b>2:40</b>	<b>Maximum:</b>		<b>3:10</b>
<b>Average for EPZ:</b>							<b>2:20</b>	<b>Average:</b>		<b>2:40</b>

The traffic management strategy is the outcome of the following process:

1. A field survey of these critical locations.  
The schematics describing traffic control, which are presented in Appendix G, are based on data collected during field surveys, upon large-scale maps, and on overhead photos.
2. Computer analysis of the evacuation traffic flow environment.  
This analysis identifies the best routing and those locations that experience pronounced congestion.
3. Consultation with emergency management and enforcement personnel.  
Trained personnel who are experienced in controlling traffic and are aware of the likely evacuation traffic patterns ~~should review~~ have reviewed these control tactics.
4. Prioritization of TCPs.  
Application of traffic control at some TCPs will have a more pronounced influence on expediting traffic movements than at other TCPs. For example, TCPs controlling traffic originating from areas in close proximity to the power plant could have a more beneficial effect on minimizing potential exposure to radioactivity than those TCPs located far from the power plant. Thus, during the mobilization of personnel to respond to the emergency situation, those TCPs which are assigned a higher priority should be manned earlier. These priorities ~~should be~~ have been reviewed by state/county emergency management representatives and by law enforcement personnel.

The control tactic at each TCP is presented in each schematic that appears in Appendix G. ~~It is suggested that the~~ The traffic management plan ~~be~~ has been reviewed by the state and county emergency planners with local and state police. Specifically the number and locations of the suggested TCP and ACP ~~should be~~ have been reviewed in detail, and the indicated resource requirements ~~should be~~ have been reconciled with current assets.

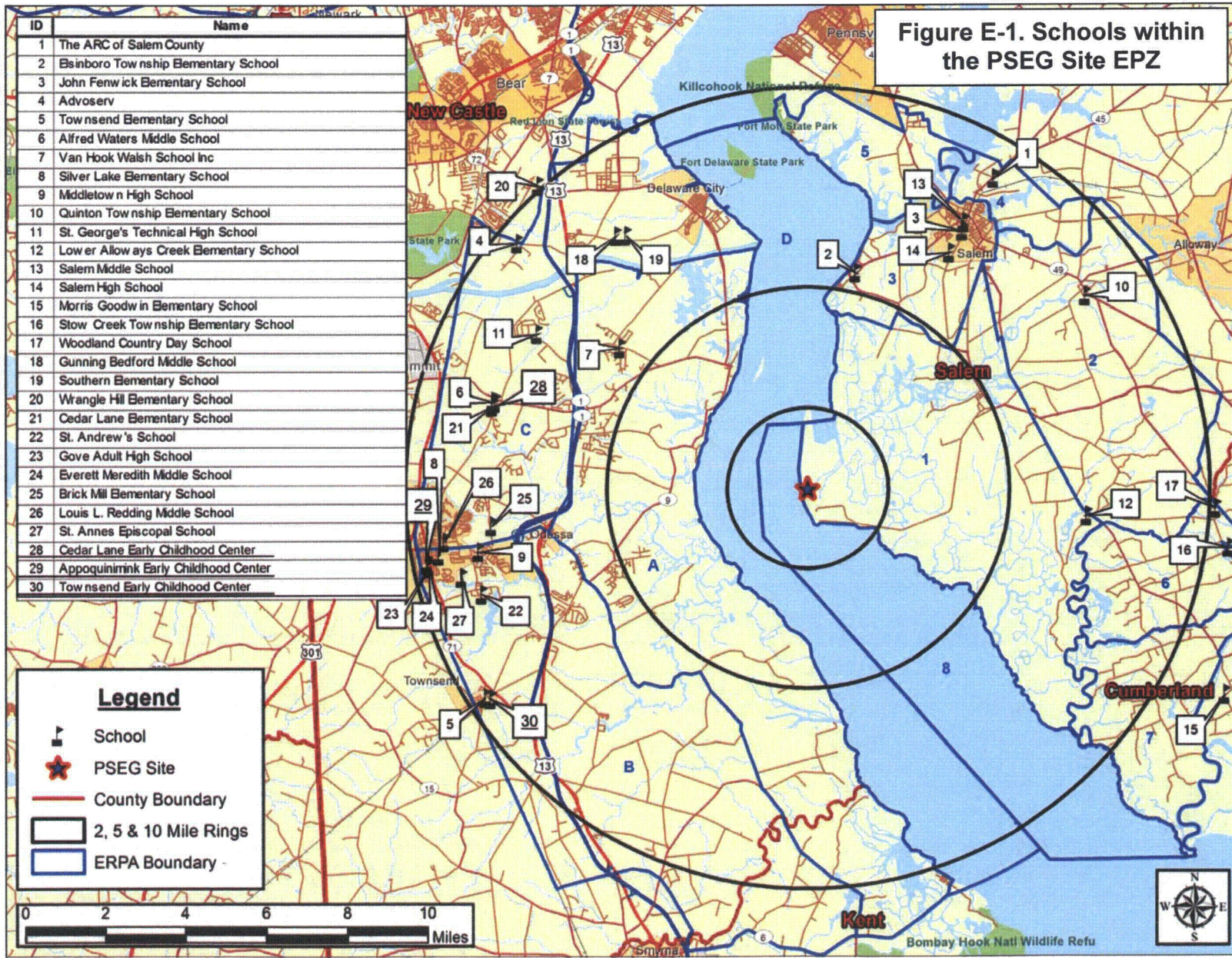
### 13. OBSERVATIONS

The following considerations are offered:

1. The traffic management plan ~~should be~~ has been reviewed by state and county emergency planners with local and state police (See Section 9 and Appendix G). Specifically...
  - The number and locations of suggested Traffic Control Points (TCP) and Access Control Points (ACP) ~~should be~~ have been reviewed in detail.
  - The indicated resource requirements (personnel, cones, barriers, etc.) ~~should be~~ have been reconciled with current assets.
2. Intelligent Transportation Systems (ITS) such as Dynamic Message Signs (DMS), Highway Advisory Radio (HAR), Automated Traveler Information Systems (ATIS), etc. should be used to facilitate the evacuation process (See Section 9). The placement of additional signage should consider evacuation needs.
3. Counties/states should implement procedures whereby schools are contacted prior to dispatch of buses from the depots to get an accurate count of students needing transportation and the number of buses required (See Section 8).
4. Average school ETE (Tables 8-6A and 8-6B) do not exceed the ETE for the general population at the 90<sup>th</sup> percentile for an evacuation of the entire EPZ (Region R03). The ETE for transit-dependent people (Tables 8-8A and 8-8B) do exceed the ETE for the general population at the 90<sup>th</sup> percentile. Thus, Tables 8-8A and 8-8B should be considered when making Protective Action Decisions.
5. Counties/states should establish strategic locations to position tow trucks provided with gasoline containers in the event of a disabled vehicle during the evacuation process (see Section 11) and should encourage gas stations to remain open during the evacuation.
6. Counties/states should establish a system to confirm that the Advisory to Evacuate is being adhered to (see the approach suggested by KLD in Section 12).
  - Should the approach offered by KLD in Section 12 be used, consideration should be given to keep a list of telephone numbers within the EPZ in the Emergency Operations Center (EOC) at all times.
7. Examination of the general population ETE in Section 7 and in Appendix J shows that the ETE for 100 percent of the population is generally 3 to 3½ hours longer than for 90 percent of the population. Specifically, the additional time needed for the last 10 percent of the population to evacuate can be as much as double the time needed to evacuate 90 percent of the population. This non-linearity reflects the fact that these relatively few stragglers require significantly more time to mobilize (i.e. prepare for the evacuation trip) than their neighbors. This leads to two considerations:
  - The public outreach (information) program should emphasize the need for evacuees to minimize the time needed to prepare to evacuate (secure the home, assemble needed clothes, medicines, etc.).

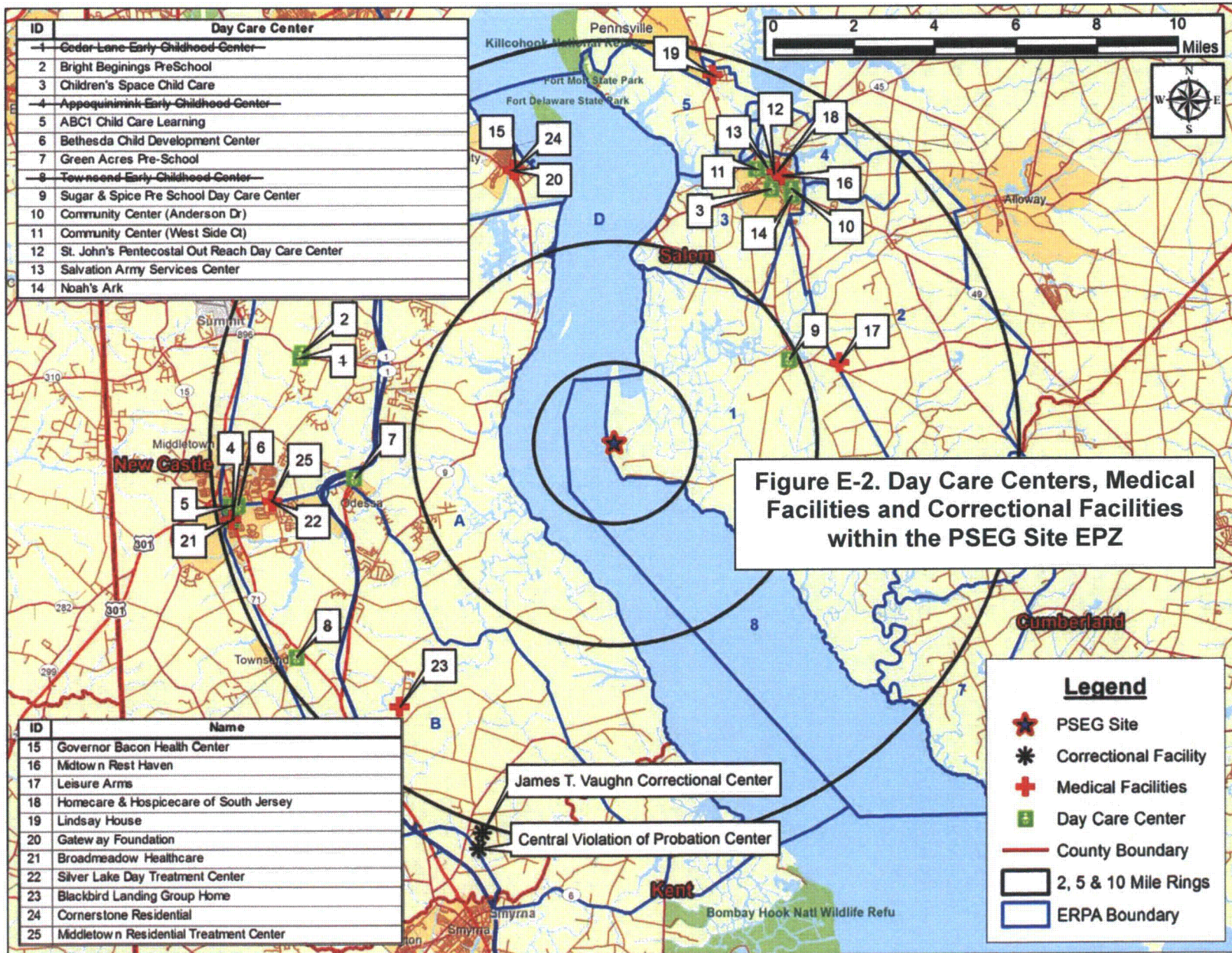
Table E-1. Schools within the PSEG Site EPZ								
ERPA	Distance (miles)	Direction	School Name	Street Address	Municipality	Phone	Enrollment	Staff
<b>SALEM COUNTY, NJ</b>								
1	7.0	E	Lower Alloways Creek Elementary School	967 Main Street	Salem	(856) 935-2707	222	78
2	8.4	NE	Quinton Elementary School	8 Robinson Street	Quinton	(856) 935-2379	358	61
3	5.4	NNE	Elsinboro Township Elementary School	631 Salem - Ft Elfsborg Rd	Salem	(856) 935-3817	108	17
3	7.4	NNE	John Fenwick Elementary School	183 Smith Street	Salem	(856) 935-4100	300	80
3	6.8	NNE	Salem High School	219 Walnut St	Salem	(856) 935-3900	600	110
3	7.6	NNE	Salem Middle School	51 New Market St	Salem	(856) 935-2700	580	110
4	9.0	NNE	The ARC of Salem County	150 SR 45	Salem	(856) 935-3600	147	28
<b>Salem County Total:</b>							<b>2,315</b>	<b>484</b>
<b>CUMBERLAND COUNTY, NJ</b>								
6	10.6	E	Stow Creek Township Elementary School	11 Gum Tree Corner Rd	Bridgeton	(856) 455-1717	135	20
6	10.2	E	Woodland Country Day School	1216 Roadstown Rd	Bridgeton	(856) 453-8499	159	38
7	11.6	ESE	Morris Goodwin Elementary School	839 Ye Greate St	Greenwich	(856) 451-5513	77	12
<b>Cumberland County Total:</b>							<b>371</b>	<b>70</b>
<b>NEW CASTLE COUNTY, DE</b>								
A	5.8	NW	Van Hook Walsh School Inc.	554 Port Penn Rd	Middletown	(302) 834-4404	4	3
B	9.6	WSW	Appoquinimink Early Childhood Center	502 S Broad St	Middletown	(302) 376-4400	260	40
B	9.6	WSW	Everett Meredith Middle School	504 S Broad St	Middletown	(302) 378-5001	1,250	95
B	9.6	WSW	Groves Adult High School	504 S Broad St	Middletown	(302) 378-5037	160	20
B	8.3	W	Middletown High School	120 Silver Lake Rd	Middletown	(302) 376-4145	1,707	145
B	9.3	W	Silver Lake Elementary School	200 E Cochran St	Middletown	(302) 378-5023	670	60
B	8.5	WSW	St. Andrew's School	350 Noxontown Rd	Middletown	(302) 285-4213	270	125
B	8.9	WSW	St. Anne's Episcopal School	211 Silver Lake Rd	Middletown	(302) 378-3179	325	55
B	9.5	SW	Townsend Early Childhood Center	10 Brook Ramble Ln	Townsend	(302) 378-9960	202	26
B	9.6	WSW	Townsend Elementary School	126 Main St	Townsend	(302) 378-5020	315	55
C	9.4	NW	AdvoServ School	4185 Cukirkwood - St George's Rd	Bear	(302) 834-7018	123	140
C	8.1	WNW	Alfred Waters Middle School	1235 Cedar Lane Rd	Middletown	(302) 376-4128	777	60
C	7.9	W	Brick Mill Elementary School	378 Brick Mill Rd	Middletown	(302) 378-5288	770	80
C	8.0	WNW	Cedar Lane Early Childhood Center	1221 Cedar Lane Rd	Middletown	(302) 449-5873	331	30
C	8.0	WNW	Cedar Lane Elementary School	1259 Cedar Lane Rd	Middletown	(302) 378-5045	670	70
C	7.8	NW	Gunning Bedford Middle School	801 Cox Neck Rd	New Castle	(302) 832-6280	950	85
C	10.0	NW	Kathleen H. Wilbur Elementary School (formerly Wrangle Hill Elementary School)	4050 Wrangle Hill Rd	Bear	(302) 832-6330	1,150	100
C	9.1	W	Louis L. Redding Middle School	201 New St	Middletown	(302) 378-5030	800	70
C	7.7	NW	Southern Elementary School	795 Cox Neck Rd	New Castle	(302) 832-6300	1,065	100
C	7.7	WNW	St. George's Technical High School	555 Hyetts Corner Rd	Middletown	(302) 638-3772	2751,035	30135
<b>New Castle County Total:</b>							<b>11,281</b>	<b>1,293</b>
<b>EPZ Total:</b>							<b>13,967</b>	<b>1,494</b>
<b>EPZ Total:</b>							<b>15,520</b>	<b>2,048</b>





**Table E-2. Day Care Facilities within the PSEG Site EPZ**

ERPA	Distance (miles)	Dir- ection	Name	Street Address	Municipality	Phone	Enroll- ment	Empl- oyees
<b>Salem County, NJ</b>								
1	4.8	ENE	Sugar & Spice Pre School Day Care Center	82 Main St	Hancocks Bridge	(856) 935-7259	25	3
3	7.4	NNE	Children's Space Child Care*	118 Walnut St	Salem	(856) 935-2788	100	14
3	7.7	NNE	Community Center*	Westside Ct	Salem	N/A	20	3
3	7.7	NE	Community Center*	Anderson Dr	Salem	N/A	20	3
3	7.6	NE	Noah's Ark	424 E. Broadway	Salem	N/A	14	4
3	7.8	NNE	Salvation Army Services Center	115 W Broadway, #5	Salem	(856) 936-0305	20	3
3	7.8	NNE	St. John's Pentecostal Out Reach Day Care Center	22 New Market St	Salem	(856) 935-1445	10	5
<b>Salem County Total:</b>							<b>209</b>	<b>35</b>
<b>New Castle County, DE</b>								
B	9.6	W	ABC1 Child Care Learning	14 West Main St	Middletown	(302) 449-2413	70	20
B	9.6	WSW	Appoquinimink Early Childhood Center	502 S Broad St	Middletown	(302) 376-4400	260	40
B	9.4	W	Bethesda Child Development Center	116 E Main St	Middletown	(302) 378-8435	210	32
B	9.5	SW	Townsend Early Childhood Center	40 Brook Ramble Ln	Townsend	(302) 378-9960	202	26
C	8.0	WNW	Bright Beginnings Pre School	1125 Jamison Corner Rd	Middletown	(302) 376-8001	47	6
C	8.0	WNW	Cedar Lane Early Childhood Center	4224 Cedar Lane Rd	Middletown	(302) 449-5873	334	30
C	6.5	W	Green Acres Pre School	23 N 6th St	Odessa	(302) 378-9250	174	16
<b>New Castle County Total:</b>							<b>1,294</b>	<b>4704</b>
<b>EPZ Total:</b>							<b>1,503</b>	<b>205</b>
							<b>710</b>	<b>109</b>



The States of New Jersey and Delaware have existing traffic management plans to be used in the event of an evacuation of the EPZ due to an incident at one of the three operational units at the PSEG Site. It is likely that these plans would be used in support of the new plant as well, when active.

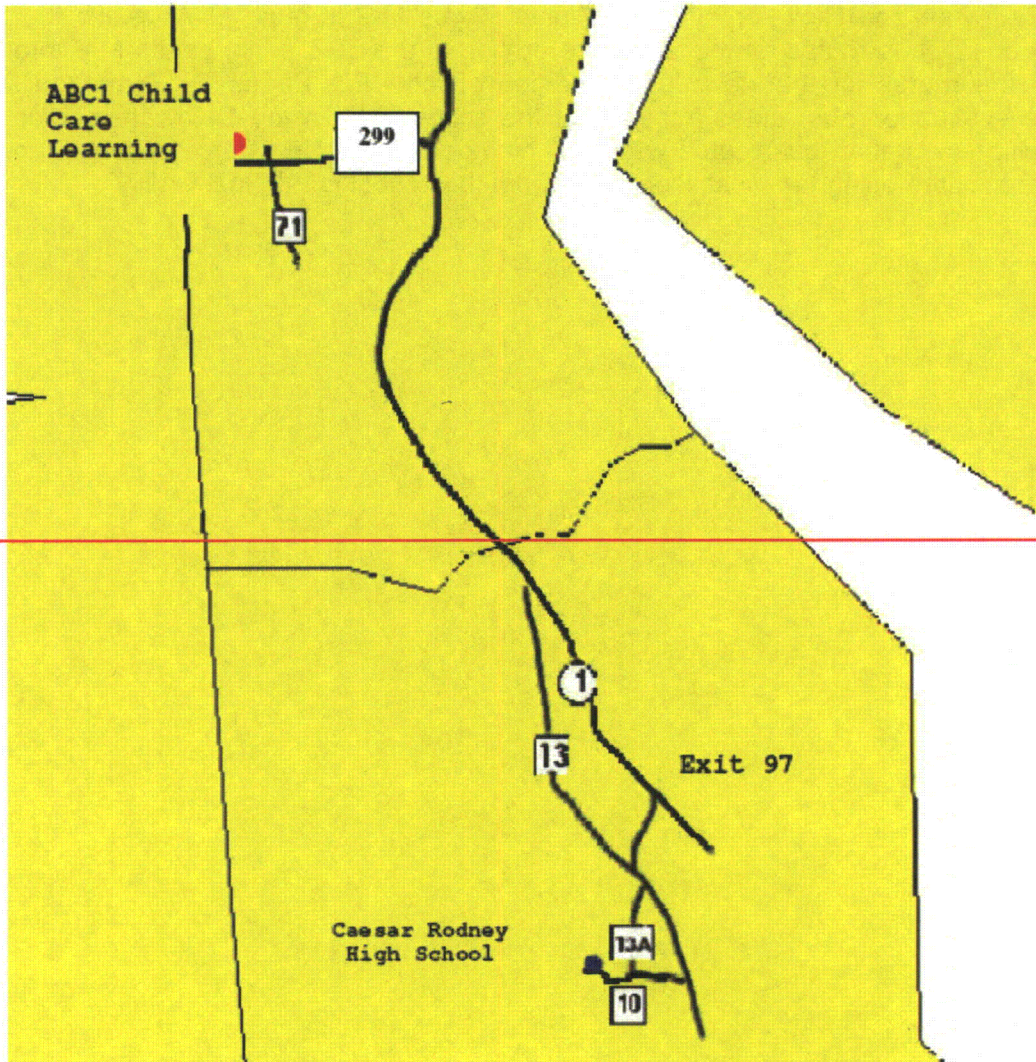
Detailed information about the existing TCP and ACP can be found in the Delaware State Plan, SOP700, "Traffic and Access Control", and in Appendix 5 of Attachment 22 to the State of New Jersey Salem/Hope Creek Nuclear Generating Stations Radiological Emergency Response Plan. Table G-4 compares the suggested TCP and ACP with the existing TCP and ACP. Those TCP and ACP which are not currently identified in the state plans should be considered in future revisions to the state plans. ~~Consideration should be given that the~~The traffic management plan detailed in this appendix has been reviewed by state and county emergency planners with local and state police.

## APPENDIX M: TRANSIT-DEPENDENT BUS ROUTES

This appendix presents the bus routes modeled in the ETE analysis described in Section 8 for evacuation of the transit-dependent population and of schools. These figures were extracted from the Delaware and New Jersey State Plans. Pages M-2 through M-7 identify the transit-dependent bus pickup routes for the Delaware portion of the EPZ, while pages M-8 through M-16 identify the routes for the New Jersey portion of the EPZ. Pages M-17 through M-3936 identify the evacuation bus routes for each of the schools within the Delaware portion of the EPZ. Specific evacuation bus routes were not provided in the New Jersey State Plan; these schools were routed using the most likely route from the school to the host facility.

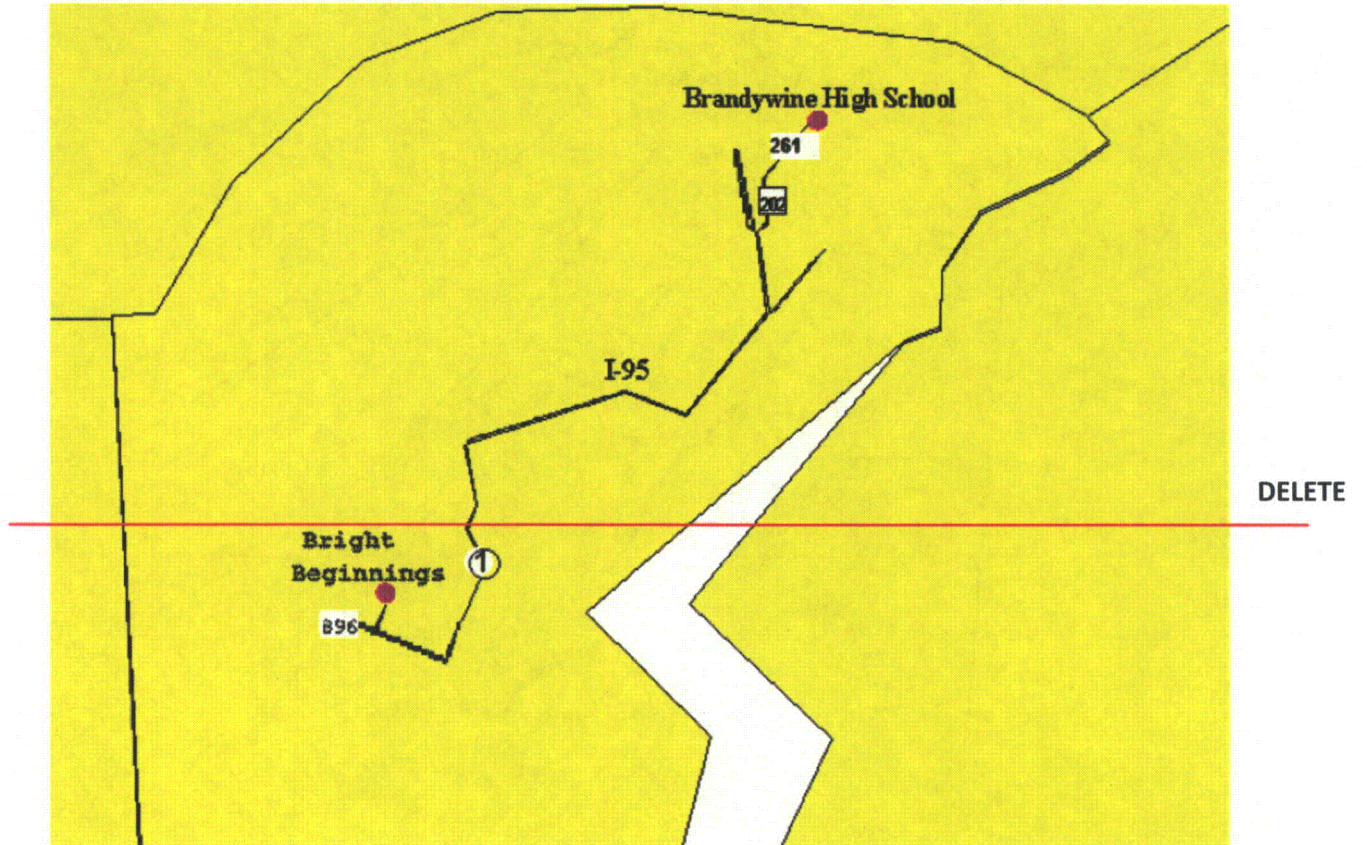
ATTACHMENT 1100-A17

ABC1 CHILD CARE LEARNING TO  
CAESAR RODNEY HIGH SCHOOL



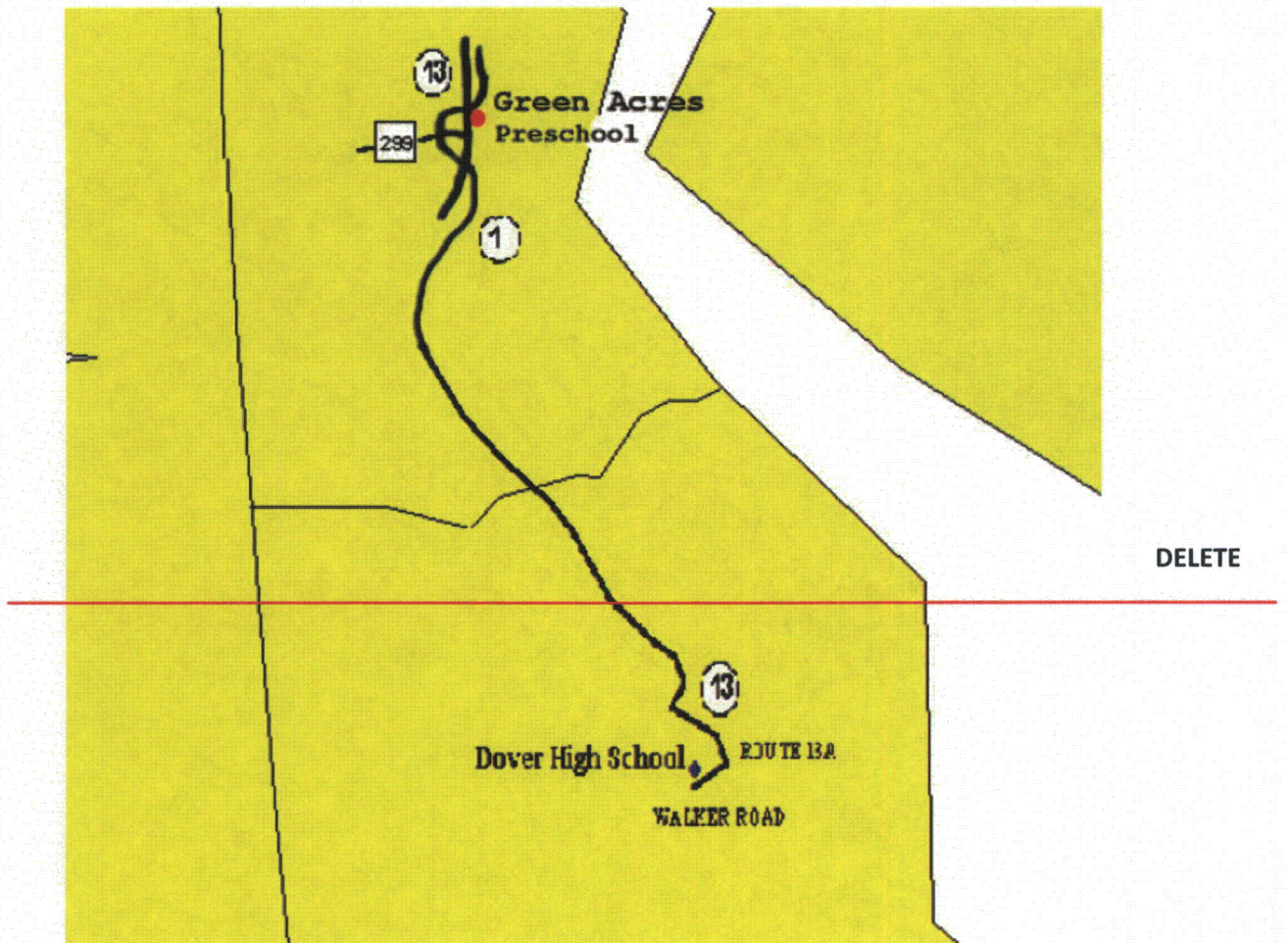
ATTACHMENT 1100-A18

BRIGHT BEGINNINGS PRESCHOOL TO  
BRANDYWINE HIGH SCHOOL



ATTACHMENT 1100-A19

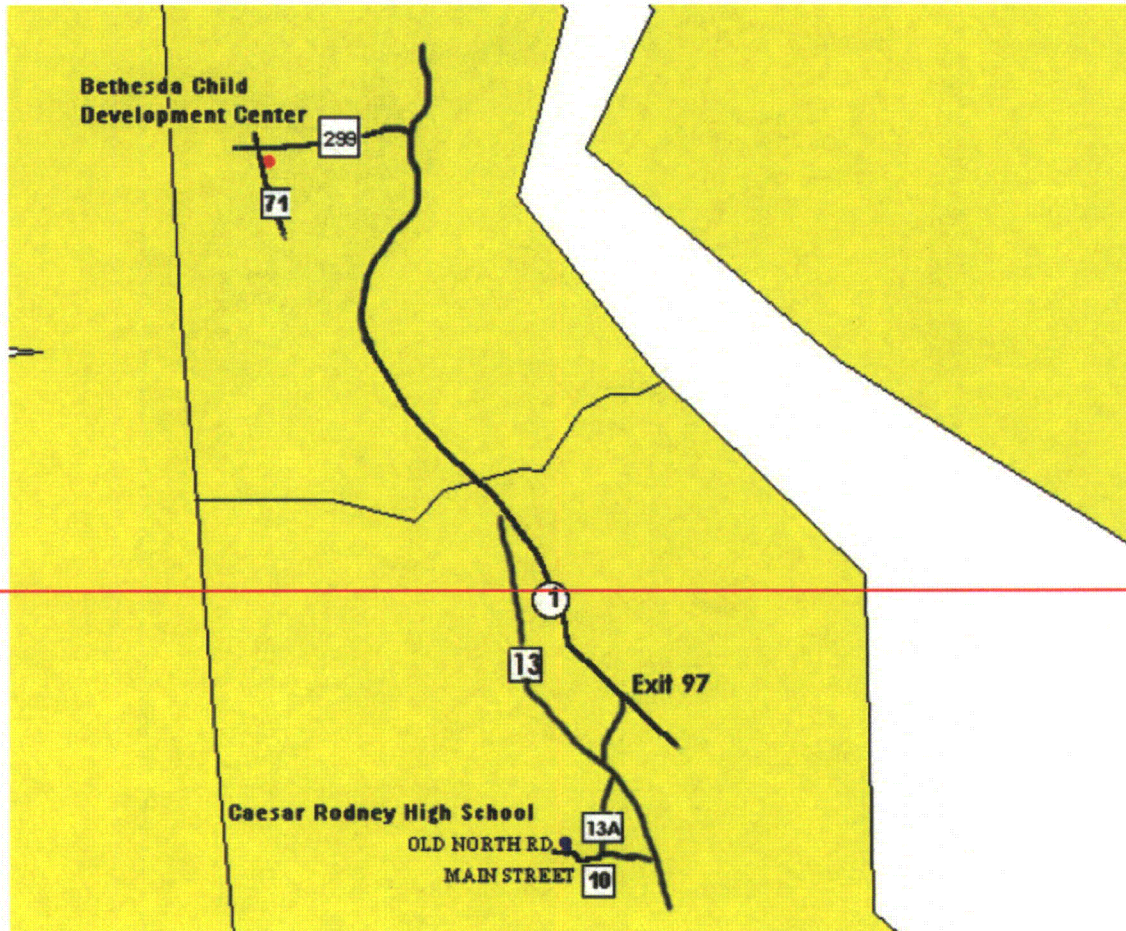
GREEN ACRES PRESCHOOL TO  
DOVER HIGH SCHOOL





ATTACHMENT 1100-A25

BETHESDA CHILD DEVELOPMENT CENTER TO  
CAESAR RODNEY HIGH SCHOOL



**ATTACHMENT 1100 A-25  
TOWNSEND EARLY CHILDHOOD CENTER TO  
DOVER HIGH SCHOOL**



**TRAVEL SOUTH ON ROUTE 71 TO ROUTE 13. TRAVEL SOUTH ON ROUTE 13 TO ROUTE 1 JUST NORTH OF SMYRNA. TRAVEL SOUTH ON ROUTE 1 TO ROUTE 13 (NORTH DOVER EXIT). TRAVEL SOUTH ON ROUTE 13 TO ROUTE 13A (STATE STREET). TAKE ROUTE 13A SOUTH TO WALKER ROAD TO DOVER HIGH SCHOOL.**

**ENCLOSURE 3**

**SUMMARY OF REGULATORY COMMITMENTS**

**(PSEG Letter to USNRC, ND-2011-0002, dated February 2, 2011)**

The following table identifies commitments made in this document. (Any other actions discussed in the submittal represent intended or planned actions. They are described to the NRC for the NRC's information and are not regulatory commitments.)

COMMITMENT	COMMITTED DATE	COMMITMENT TYPE	
		ONE-TIME ACTION (Yes/No)	Programmatic (Yes/No)
PSEG will revise Sections 1, 3, 8, 9, 13 and Appendices E, G and M of Part 5, Emergency Plan, Attachment 11, Development of Evacuation Time Estimates, to incorporate the changes in Enclosure 2 in response to NRC RAIs 13.03-2 through 13.03-8	This revision will be included in the next periodic update of the PSEG Site ESP application Emergency Plan	Yes	No