



January 23, 2014
ND-2014-0002

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

Subject: **PSEG POWER, LLC**
Docket No. 52-043
Documents in Support of Application
Early Site Permit for the PSEG Site
Comments on Advanced Safety Evaluation for Chapter 11, Section
11.2, "Liquid Waste Management System" and Section 11.3,
"Gaseous Waste Management System"

Reference: 1) Letter from P. Chowdhury, USNRC, to J. Mallon, PSEG Power, LLC, PSEG EARLY SITE PERMIT APPLICATION – ADVANCED SAFETY EVALUATION WITH NO OPEN ITEMS FOR CHAPTER 11, SECTION 11.2, "LIQUID WASTE MANAGEMENT SYSTEM" AND SECTION 11.3, "GASEOUS WASTE MANAGEMENT SYSTEM", dated January 8, 2014

In Reference 1, USNRC transmitted the Advanced Safety Evaluation with No Open Items for Chapter 11, Section 11.2, "Liquid Waste Management System" and Section 11.3, "Gaseous Waste Management System", associated with PSEG's Early Site Permit (ESP) application, for review to confirm that the Advanced Safety Evaluation does not include any proprietary information that PSEG would seek to withhold under 10 CFR 2.390, or contain any factual errors.

PSEG has completed the review of the above referenced safety evaluation and has determined that the safety evaluation does not include any proprietary information that PSEG would seek to withhold under 10 CFR 2.390.

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During PSEG's review of the advanced safety evaluation for Chapter 11, Sections 11.2 and 11.3, PSEG compiled a list of comments that could improve the accuracy and clarity of the safety evaluation. These comments are included in Enclosure 1 to this letter.

If additional information is needed, please contact David Robillard, PSEG Nuclear Development Licensing Engineer, at (856) 339-7914.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 23rd day of January, 2014.

Respectfully,



James Mallon
Early Site Permit Manager
Nuclear Development
PSEG Power, LLC

Enclosure 1: List of Comments on Advanced Safety Evaluation for Chapter 11, Section 11.2, "Liquid Waste Management System" and Section 11.3, "Gaseous Waste Management System"

cc: USNRC Project Manager, Division of New Reactor Licensing, PSEG Site
(w/enclosure)
USNRC Environmental Project Manager, Division of New Reactor Licensing
(w/enclosure)
USNRC Region I, Regional Administrator (w/o enclosure)

PSEG Letter ND-2014-0002, dated January 23, 2014

Enclosure 1

**List of Comments on Advanced Safety Evaluation for
Chapter 11, Section 11.2, "Liquid Waste Management System" and
Section 11.3, "Gaseous Waste Management System"**

6 Pages

Advanced SER Review Comments

SER Chapter/Section: Chapter 11 Title: Chapter 11, Section 11.2, "Liquid Waste Management System" and Section 11.3, "Gaseous Waste Management System",		
Comment No.	Page	Comment
1.	11-1	Section 11.3, 1 st para., 1 st sentence: Suggest the wording be revised to: "....Appendix I, "Numerical Guides for Design Objectives and Limiting Conditions for Operation to Meet the Criterion 'As Low As is Reasonably Achievable' for Radioactive Material in Light-Water-Cooled Nuclear Power Reactor Effluents". " Appendix I is repeated at the end of quoted document.
2.	11-1	Section 11.3, 1 st para., Item 2: Suggest the wording be revised to: " 10 CFR Part 50, Appendix I , as it relates ..."
3.	11-2	<p>Section 11.3, 2nd numbered item. Suggest the wording be revised to:</p> <p>4. 10 CFR 100.21(c), as it relates to the requirement that site atmospheric dispersion characteristics be evaluated and dispersion parameters established such that (1) radiological effluent release limits associated with normal operation from the type of facility to be located at the site can be met for any individual located offsite,</p> <p>5. 40 CFR Part 190, as applicable U.S. Environmental Protection Agency (EPA) environmental radiation standards implemented under 10 CFR 20.1301(e) for all radioactive liquid and gaseous effluents discharged from the proposed facility.</p> <p>This rewording removes the discussion of accidents, which are not addressed in the SER section, and the discussion of 10 CFR Part 50, which is addressed in item number 2 on page 11-1.</p>
4.	11-3	Section 11.3: Table number should be "11.3-1:
5.	11-3	Section 11.3, Table 11.3-1, 3 rd row in Column 5 (Dose Limit): Revise to read: "5E-2 (5.0E0) ..."
6.	11-3	Section 11.3, Table 11.3.1-1, Notes: Revise the first note to delete one of the 10 CFR Part 50 citations. Suggested wording: "Appendix I, "Numerical Guides for Design Objectives and Limiting Conditions for Operation to Meet the Criterion 'As Low As Is Reasonably Achievable' for Radioactive Material in Light-Water-Cooled Nuclear Power Reactor Effluents," to 10 CFR Part 50, "Domestic Licensing of Production"
7.	11-4	Section 11.4.1, 1 st para., 3 rd sentence: "SSAR Section 1.4, Plant Parameters ..." should be "SSAR Section 1.3, Plant Parameter ..."

Comment No.	Page	Comment
8.	11-4	Section 11.4.1, 3 rd para., 1 st sentence: Suggest the wording be revised to: "...long-lived parents, and the effects on dose are included with the parent radionuclides. Excluding these radionuclides will have no effect on doses. "
9.	11-4	<p>Section 11.4.1, 3rd para., under Liquid Effluent Source Term Analysis, 1st sentence states: "In a March 10, 2011, response, to RAI 7, Question 11.02-1, the applicant stated that these are short-lived daughter products of long-lived parents, and that these short-lived daughter products do not have any dose factors in the dose-factor library and will have an insignificant effect on the calculated liquid effluent dose to members of the public."</p> <p>This is a mischaracterization/misquote of PSEG's response to RAI No. 7, Question 11.02-1. PSEG's actual response to Question 11.02-1 is:</p> <p>"The reason why these radionuclides are excluded is because they are short-lived daughter products of long-lived parents and their effect on dose is included with the parent nuclide. The excluded radionuclides (and parents) are Ag-110 (Ag-110m), Sa-137m (Cs-137), Rh-103m (Ru-103), and Rh-106 (Ru-106). Since the effect of these radionuclides on the calculated dose is included with the parent radionuclide, excluding these radionuclides will have no effect on the calculated dose.</p> <p>Note also that there are no dose-factors for these radionuclides in the LADTAP II dose-factor library (LADTAP II is the module in the NRCDOSE code package that implements the liquid release dose models of the NRC Regulatory Guides 1.109 and 1.113)."</p>
10.	11-4	Section 11.4.1, 3 rd para., 4 th sentence: The footnote added to Table 11.2-1 in response to RAI No. 7 was actually added to the SSAR in Revision 1 to the ESPA, dated May 21, 2012.
11.	11-4	Section 11.4.1, 4 th para., 1 st sentence: Change "Site Concentrations Comparisons" to "Site Concentrations Comparison" and add "Table 2" to the Appendix B references.
12.	11-5	Section 11.4.1, 2 nd para. under 10 CFR Part 50, Appendix I Liquid Dose Compliance, 3 rd sentence: Suggest the wording be revised to: "... contractor report NUREG-4013 , ..."

Comment No.	Page	Comment
13.	11-5	Section 11.4.1, 2nd para. under 10 CFR Part 50, Appendix I Liquid Dose Compliance, 4 th sentence: Suggest the wording be revised to: " RG 1.109, Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I, ... Hypothetical Maximally Exposed Individual (MEI) ... "
14.	11-5	Section 11.4.1, 3 rd para. under 10 CFR Part 50, Appendix I Liquid Dose Compliance, 3 rd sentence: Suggest the wording be revised to: " ... brackish water and the Delaware River is not a potable water supply in the vicinity of the site. "
15.	11-5	Table 11.4.1-1, last column, 3 rd row: There is no SSAR Section 5.4.1.1. Suggest the wording be revised to: " SSAR Section 2.4.1.2.1 ".
16	11-6	Table 11.4.1-2: In the title, "mSv/yr/ unit" should be "mSv/yr/unit" (remove the space).
17.	11-6	Table 11.4.1-2, Row 2, Columns 2 and 3: Suggest the wording be revised to: "1.157W-2" to " 1.57E-2 " in both locations.
18.	11-6	Table 11.4.1-2, Row 3, Column 3: Suggest the wording be revised to: "1.0E-2" to " 1.0E-1 ."
19.	11-6	Para. immediately under Table 11.4.1-2, last sentence: Suggest the wording be revised to: "... the Delaware River in the site vicinity is composed of brackish water."
20.	11-6	1 st para. under "Population Dose Evaluation – Liquid Effluents", 5 th sentence: Suggest the wording be revised to: ".... Pathway," are 4.55E-1 ... (4.55E+1...) ... and 6.72E-1 ... (6.72E+1) ... (4.55E+1 and 6.72E+1 are the values in SSAR Table 11.2-8)
21.	11-6	1 st para. under "Population Dose Evaluation – Liquid Effluents", 5 th sentence: Suggest changing "person-Sieverts" to "person Sv" and "person-rem" to "person rem" to be consistent with usage in the rest of the document.
22.	11-6	1 st para. under "Population Dose Evaluation – Liquid Effluents", 6 th sentence: Suggest the wording be revised to: "... RG 1.110, Cost-Benefit Analysis for Radwaste Systems for Light-Water-Cooled Nuclear Power Reactors , methodology."
23.	11-7	Section 11.4.2, 1 st para., 3 rd sentence: "SSAR Section 1.4, Plant Parameters" should be " SSAR Section 1.3, Plant Parameter ... "

Comment No.	Page	Comment
24.	11-7	Section 11.4.2, 3 rd para., 5 th sentence: Suggest the wording be revised to: "... long-lived parents which either decay before reaching offsite receptors or are included with the parent radionuclide. Excluding these radionuclides will have no effect on doses. "
25.	11-7	<p>Section 11.4.2, 3rd para., under Gaseous Effluent Source Term Analysis, 5th sentence states: "In a March 3, 2011, response to RAI 6, Question 11.03-1, the applicant stated that these are short-lived daughter products of long-lived parents which also do not have any dose factors in the dose-factor library and will have no significant effect on calculated gaseous effluent doses to members of the public."</p> <p>This is a mischaracterization/misquote of PSEG's response to RAI No. 6, Question 11.03-1. PSEG's actual response to Question 11.03-1 is:</p> <p>The identified radionuclides are excluded for two reasons. First some of the radionuclides have very short half-lives (Kr-90, Xe-139). They will decay before reaching the offsite receptors and therefore, will not contribute to the dose. The second reason for excluding some radionuclides is because they are short-lived daughter of the longer-lived parents and their effect on dose is included with the parent radionuclide. These radionuclides (and parents) are Ba-137m (Cs-137), Rh-106 (Ru-106), and Rh-103m (Ru-103). Since these radionuclides that are excluded from the dose calculation are either negligible contributors to the dose or are included with the parent radionuclides, excluding these radionuclides will have no effect on the calculated doses.</p> <p>Note also that there are no dose-factors for these radionuclides in the GASPAR II dose-factor library (GASPAR II is the module in NRCDOSE code package that implements the air release dose models of the NRC Regulatory Guide 1.109).</p>
26.	11-7	Section 11.4.2, 3 rd para., 6 th sentence: Change "a footnote" to "footnotes."
27.	11-7	Section 11.4.2, 3 rd para., 7 th sentence: The footnote added to Table 11.3-5 in response to RAI No. 6 was included in SSAR Revision 1 to the ESPA, dated May 21, 2012.
28.	11-8	Section 11.4.2, under 10 CFR Part 20, Gaseous Compliance, 1st para, 1st sentence: Add "Table 2" to the Appendix B reference.
29.	11-8	Section 11.4.2, under 10 CFR Part 20, Gaseous Compliance, 2 nd para, 2nd sentence: Change "also effected" to "also affected ..."
30.	11-8	Section 11.4.2, under 10 CFR Part 20, Gaseous Compliance, 2 nd para, 3 rd sentence: Suggest the wording be revised to: ".... unity calculation in Note 4, ... Part 50, Appendix I ..."

Comment No.	Page	Comment
31.	11-8	Section 11.4.2, under 10 CFR Part 20, Gaseous Compliance, 3 rd para, 1 st sentence: Suggest the wording be revised to: "... and SSAR Table 11.3-7 ..." (SSAR Table 11.3-6 was not revised as a result of the response to RAI No. 18).
32.	11-8	Section 11.4.2, under 10 CFR Part 20, Gaseous Compliance, 5 th para, 3 rd sentence: Table 11.3-6, revised in response to RAI No. 37, was included in SSAR Revision 1 to the ESPA, dated May 21, 2012.
33.	11-9	Section 11.4.2, under 10 CFR Part 50, Appendix I, Gaseous Dose Compliance, 1 st para, 1 st sentence: Suggest the wording be revised to: ".... Section 2.3.5 of the SSAR to"
34.	11-9	Section 11.4.2, under 10 CFR Part 50, Appendix I, Gaseous Dose Compliance, 2 nd para, 6 th sentence: The response to RAI No. 36 did not result in a revision to the SSAR.
35.	11-11	Section 11.4.2, 2nd para, 2nd sentence: Change "estimated to 0.11" to "estimated to be 0.11."
36.	11-11	Section 11.4.2, 2nd para, last sentence: SSAR Table 11.4.21 does not exist. Suggest the wording be revised to: ".... (see SSAR Table 11.3-8) .."
37.	11-12	Table 11.4.2-2; Change title to read: "Comparison of Gaseous Maximum Individual Doses, mSv/yr/unit (mrem/yr/unit)"
38.	11-12	Table 11.4.2-2: For all of the entries in the Skin At MEI row, change "E-2" to " E-1. "
39.	11-12	Section 11.4.2, 1 st para., under "Population Dose Evaluation – Gaseous Effluents", 4 th sentence: Suggest changing "person-Sv" to "person Sv" and "person-rem" to "person rem" to be consistent with usage in the rest of the document.
10.	11-13	Footnote to Table 11.4.2-3: Suggest the wording be revised to: "SSAR Table 11.3-10, "Collective Annual Doses from a New Unit to Population within 50 miles, by Pathway." " (this is the correct title for the SSAR Table)
41.	11-13	Section 11.4.2, under 10 CFR 20.1301(e), 1st para, 1st sentence: Change "of 40 CFR" to " in 40 CFR."
42.	11-13	Section 11.4.2, 3 rd para., under "10 CFR 20.1301(e), (40 CFR Part 190) Liquid and Gaseous Effluent Dose Compliance": Suggest the wording be revised to: ".... SSAR Table 11.2-7, "Liquid Contributions to Maximally Exposed Individual Doses with Regards to 40 CFR Part 190 Criteria," ... SSAR Table 11.3-8, "Comparison of Maximally Exposed Individual Doses with 10 CFR Part 50, Appendix I Criteria." " These are the correct titles for the Tables.

Comment No.	Page	Comment
43.	11-14	Table 11.4.2-4: The title should read mSv/yr vs. MSv/yr . Also need to change the table title on page iii.