15. ACCIDENT ANALYSES

15.1 Technical Information in the Application

In Section 3.3 of the site safety analysis report (SSAR), Exelon Generation Company (EGC or the applicant) analyzed and provided the radiological consequences of design-basis accidents (DBAs) to demonstrate that a new nuclear unit(s) could be sited at the proposed early site permit (ESP) site without undue risk to the health and safety of the public, in compliance with the requirements of Title 10 of the *Code of Federal Regulations* (10 CFR), Section 52.17, "Contents of Applications," and 10 CFR Part 100, "Reactor Site Criteria." The applicant did not identify a particular reactor design to be considered for the proposed ESP site. Instead, the applicant developed a set of reactor DBA source term parameters using surrogate reactor characteristics. The applicant used these parameters, in conjunction with specific site characteristics, to conduct the radiological consequences of DBAs for the purpose of assessing the suitability of the proposed ESP site. These plant parameters collectively constitute a plant parameter envelope (PPE).

The applicant developed a PPE using seven reactor designs, five water-cooled reactors and two gas-cooled reactors, though it used source terms for only two of these designs as inputs to the DBA analyses. The water-cooled reactors included in the PPE are (1) a version of the Westinghouse Advanced Plant 1000 (AP1000), (2) the certified General Electric Advanced Boiling-Water Reactor (ABWR), (3) the Atomic Energy of Canada Advanced CANDU Reactor (ACR-700), (4) the General Electric Economic and Simple Boiling-Water Reactor (ESBWR), and (5) the Westinghouse-led International Reactor Innovative and Secure (IRIS) Reactor. The ACR-700 is light-water cooled, but heavy-water moderated. The two gas-cooled reactors are (1) the General Atomics Gas Turbine Modular Helium Reactor, and (2) the Pebble Bed Modular Reactor. The applicant stated that the PPE values were not intended to be limited to these reactor designs, but rather to provide a broad overall outline of a design concept, which could include other potential reactor designs if they fall within the parameter values provided in the PPE.

In selecting DBAs for radiological consequence analyses, the applicant focused predominantly on two light-water reactors, the certified ABWR and a version of the AP1000,[1] to serve as surrogates. The applicant stated that it selected these two reactor designs because they are (or are based on) previously certified standard designs and have recognized bases for postulated accident analyses. Using source terms developed from these two designs, the applicant performed and provided radiological consequence analyses for the following DBAs:

- main steamline breaks (AP1000 and ABWR)
- reactor coolant pump locked rotor (AP1000)
- control rod ejection (AP1000)
- control rod drop (ABWR)
- small line break outside containment (AP1000 and ABWR)
- steam generator tube rupture (AP1000)

[1] As discussed later in this section, EGC originally referenced the version of the AP1000 design available at the time its ESP application was submitted. Subsequently, EGC referenced the latest version of the AP1000 design (Revision 14 of the AP1000 Design Control Document) provided by Westinghouse in support of the final AP1000 design certification.

- loss-of-coolant accidents (LOCAs) (AP1000, ABWR, ESBWR, and ACR-700)
- fuel handling accident (AP1000 and ABWR)

The applicant presented the radiological consequence assessment results in SSAR Table 3.3-2. This table provides a summary of the postulated radiological consequences of the DBAs identified above at the proposed exclusion area boundary (EAB) and the low population zone (LPZ). The table also demonstrates that any potential doses would be within the radiological dose consequence evaluation factors set forth in 10 CFR 50.34(a)(1). The applicant provided the accident-specific source terms (i.e., release rates of radioactive materials from the ESP footprint (PPE values) to the environment) and resulting site-specific dose consequences for each DBA in the tables included in Chapter 3 of the SSAR.

In Request for Additional Information (RAI) 3.3.1-1, the staff noted that Westinghouse had revised its χ/Q values in the AP1000 Design Control Document (DCD) since the applicant had submitted its ESP application. The staff asked whether the applicant planned to use the updated values in revising its application. The applicant responded in its submission to the U.S. Nuclear Regulatory Commission (NRC) dated October 7, 2004, that it had elected not to update the ESP application to incorporate the latest χ/Q values in the AP1000 design certification because it had assessed the specific impact of the changes in χ/Q values and found them to have only a minor affect on the EAB and LPZ doses for the DBAs presented in the SSAR. The applicant also stated that the ESP application used the χ/Q values from Revision 2 of the Westinghouse AP1000 DCD, which was the most recently completed revision of the DCD at the time the applicant submitted its ESP application.

In its submission to the NRC dated April 4, 2005, responding to Open Item 3.3-1, the applicant changed its position and elected to update the ESP application to incorporate the latest χ/Q values in the AP1000 design certification for the postulated LOCA only. SSAR Table 3.3-2 B provides the latest χ/Q values the applicant used for the postulated LOCA. Subsequent to its April 4, 2005, submission responding to Open Item 3.3-1, the applicant changed its position again in its submission to the NRC dated July 14, 2005, and elected to further update the ESP application to apply the latest χ/Q values in the AP1000 DCD, Revision 14, which is the basis for the AP1000 design certification, to all DBAs, including the postulated LOCA. The staff verified that the latest χ/Q values the applicant used are the same as those in the AP1000 DCD and in the final safety evaluation report (SER) prepared by the staff for the AP1000 design certification.

In RAI 3.3.4-3, the staff noted that SSAR Section 3.3 provides total effective dose equivalent (TEDE) values for the ABWR design, while the ABWR design is certified with the thyroid and whole body doses specified in 10 CFR Part 100. The staff asked the applicant to explain how the doses compare. In its response, the applicant provided revised tables in SSAR Chapter 3 that included the calculated thyroid and whole body doses, in addition to the estimated TEDE values for the dose comparison. The staff finds the applicant's response acceptable.

In RAI 3.3.4-1, the staff asked the applicant to provide references and explain the methodology it used to determine time-dependent activity releases for each DBA. The applicant provided the requested references. In its response, the applicant stated that the respective DCDs present the methodologies used for calculating time-dependent releases for the ABWR and AP1000. The staff finds the methodologies used in the respective DCDs to be acceptable. The applicant further stated that for noncertified reactors the vendors have not provided the specific details of

the methodology, but have provided time-dependent activity releases, which they consider to be the best estimate of the limiting DBA activity releases. The staff finds the response acceptable.

In RAI 3.3.4-2, the staff asked the applicant to provide, for each DBA, the doses it used for the EAB and the LPZ for the AP1000, the ABWR, and the ACR-700 designs, as well as the ratios of site-specific χ/Q values to design certification χ/Qs used. In its response, dated September 30, 2005, the applicant provided the requested information in a supplementary table, "Tabulation of the Bases for the AP1000 Design Basis Accident Offsite Doses at the EGC ESP Site," as an attachment to the response to RAI 3.3.4-2. The table provided, for each DBA, the doses the applicant used for the EAB and the LPZ for the AP1000. For the ABWR design, the applicant stated that it did not base the doses provided on the ratios of the χ/Q values, but calculated them using the activity releases, the EGC ESP site-specific χ/Q values, and the dose conversion factors in Federal Guidance Reports 11 and 12. The applicant further stated that it projected the offsite doses associated with the ESBWR and ACR-700 designs based on the estimated activity releases to the environment provided by the vendors and the site-specific χ/Q values. The staff finds the applicant's response acceptable.

In RAI 3.3.2-1, the staff asked the applicant to clarify whether the 0- to 2-hour EAB doses presented in the SSAR are for the 2-hour period with the greatest EAB doses. In its response, the applicant stated that the greatest EAB dose occurs during the first 2 hours of the accident for the ABWR, AP1000, and ACR-700 designs; however, the period from 1 to 3 hours yields the greatest EAB dose from a LOCA for the AP1000 design. The applicant clarified this information in the application. The staff finds the applicant's response acceptable.

15.2 Regulatory Evaluation

In RAI 1.5-1, the staff asked the applicant to provide a comprehensive listing of NRC regulations applicable to its ESP SSAR. In its response to RAI 1.5-1, the applicant stated that NRC Review Standard (RS)-002, "Processing Applications for Early Site Permits," Attachment 2, identifies the NRC regulations applicable to its ESP SSAR. In response to RAI 1.5-1, and in SSAR Table 1.5-1, the applicant identified the following applicable NRC regulations and guidance cited in Chapter 15 of RS-002, Attachment 2, regarding reactor accident radiological consequence analyses:

- 10 CFR 52.17
- 10 CFR Part 100
- 10 CFR 50.34, "Contents of Applications; Technical Information"
- Regulatory Guide (RG) 1.3, "Assumptions Used for Evaluating the Potential Radiological Consequences of a Loss-of-Coolant Accident for Boiling Water Reactors," issued June 1974
- RG 1.25, "Assumptions Used for Evaluating the Potential Radiological Consequences of a Fuel Handling Accident in the Fuel Handling and Storage Facility for Boiling and Pressurized Water Reactors," issued March 1972

- RG 1.145, “Atmospheric Dispersion Models for Potential Accident Consequence Assessments at Nuclear Power Plants,” issued November 1982

- RG 1.183, “Alternative Radiological Source Terms for Evaluating Design-Basis Accidents at Nuclear Power Reactors,” issued July 2000

- NUREG-0800, “Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants,” issued July 1981

- Technical Information Document (TID)-14844, “Calculation of Distance Factors for Power and Test Reactor Sites,” issued March 1962

The staff reviewed this portion of the application for conformance with the applicable regulations and considered the corresponding regulatory guidance. In its evaluation, the staff used the relevant dose consequence evaluation factors found in 10 CFR 50.34(a)(1) to determine the acceptability of the site, in accordance with 10 CFR 52.17(a)(1).

The regulations in 10 CFR 52.17(a)(1) require that ESP applications contain an analysis and evaluation of the major structures, systems, and components of the facility that bear significantly on the acceptability of the site under the radiological consequence evaluation factors identified in 10 CFR 50.34(a)(1). In addition, the ESP site characteristics must comply with the requirements of 10 CFR Part 100. The regulations in 10 CFR 50.34(a)(1)(ii)(D) require the following for a postulated fission product release based on a major accident:

- An individual located at any point on the boundary of the exclusion area for any 2-hour period following the onset of the postulated fission product release would not receive a radiation dose in excess of 25 rem TEDE.

- An individual located at any point on the outer boundary of the LPZ, who is exposed to the radioactive cloud resulting from the postulated fission product release (during the entire period of its passage), would not receive a radiation dose in excess of 25 rem TEDE.

Because EGC has not selected a reactor design to be constructed on the proposed ESP site, the applicant used a PPE approach to demonstrate that it meets these requirements. A PPE is a set of plant design parameters that are expected to bound the characteristics of a reactor(s) that may be constructed at a site, and it serves as a surrogate for actual reactor design information. As discussed in RS-002 and Chapter 1 of this SER, the staff considers the PPE approach an acceptable method for assessing site suitability. For the purposes of this analysis, the applicant proposed fission product release rates from the ESP footprint (PPE values) to the environment, and the staff reviewed the applicant’s dose evaluation based on these release rates.

15.3 Technical Evaluation

The applicant evaluated the suitability of the site under the radiological consequence evaluation factors identified in 10 CFR 50.34(a)(1) using bounding reactor accident source terms and dose consequences as a set of PPE values based predominantly on two surrogate designs, as well

as site-specific χ/Q values based on the ESP footprint. The following paragraphs describe the staff's review of each aspect of this evaluation.

15.3.1 Selection of DBAs

The applicant selected the DBAs listed in Section 15.1 of this SER based on the proposed AP1000 design and the certified ABWR design, indicating that it chose these two reactor designs because they have (or are based on) previously certified standard designs and have recognized bases for postulated accident analyses. The staff finds that the applicant selected DBAs that are consistent with those analyzed in NUREG-0800 and RG 1.183. Therefore, the staff finds that the applicant provided an acceptable DBA selection for evaluating the compliance of the proposed ESP site with the dose consequence evaluation factors specified at 10 CFR 50.34(a)(1). The applicant stated that the DBAs analyzed in the proposed AP1000 and certified ABWR DCDs are expected to bound the DBAs of the other reactors being considered for the proposed ESP site. While it has not reviewed the designs other than the ABWR and AP1000 in detail, the staff believes that any conclusions drawn regarding the site's acceptability based on the AP1000 and ABWR designs are likely to be valid for the other reactor designs the applicant is considering. Whether or not such designs are in fact bounded by these DBA analyses would be subject to the staff's review during its consideration of any combined license (COL) or construction permit (CP) application that might be filed with respect to construction and operation of a reactor design at the EGC ESP site.

15.3.2 Design-Specific (Postulated) χ/Q Values

In evaluating the AP1000 design, the applicant originally used those χ/Q values in the proposed AP1000 DCD, Revision 2, that were being reviewed by the staff at the time EGC submitted its ESP application. Westinghouse subsequently revised the χ/Q values in the AP1000 DCD. In its submission to the NRC dated April 4, 2005, responding to Open Item 3.3-1, the applicant updated the ESP application to incorporate the more conservative and latest χ/Q values in the AP1000 DCD, Revision 14, for the postulated LOCA only. For all other DBA radiological consequence analyses, the applicant used χ/Q values in the AP1000 DCD, Revision 2.

Subsequent to the April 4, 2005, submission responding to Open Item 3.3-1, the applicant changed its position again in its submission to the NRC dated July 14, 2005, and elected to further update the ESP application to apply the latest χ/Q values in the AP1000 DCD, Revision 14, which is the basis for the AP1000 design certification, to all DBAs, including the postulated LOCA. The staff verified the latest χ/Q values used by the applicant with those in the AP1000 DCD and in the final SER prepared by the staff for the AP1000 design certification. The latest χ/Q values used by the applicant are shown in Table 15.3-1. The staff verified that these χ/Q values used by the applicant are the same as those in the AP1000 design certification document.

Table 15.3-1 AP1000 χ/Q Values (s/m^3)

Location and Time Interval	χ/Q Values
0 to 2 hour EAB	5.10×10^{-4}
0 to 8 hour LPZ	2.20×10^{-4}
8 to 24 hour LPZ	1.60×10^{-4}
1 to 4 day LPZ	1.00×10^{-4}
4 to 30 day LPZ	8.00×10^{-5}

In evaluating the ABWR, the applicant did not use the postulated χ/Q values in the ABWR certified DCD. Instead, the applicant calculated the radiological consequence doses using the postulated activity releases in the ABWR DCD, the EGC ESP site-specific χ/Q values, and the dose conversion factors in Federal Guidance Reports 11 and 12.

15.3.3 Site-Specific χ/Qs

In Section 2.3.4 of this SER, the staff reviewed the site-specific χ/Q values calculated and provided by the applicant and performed an independent evaluation of atmospheric dispersion, in accordance with the guidance provided in Section 2.3.4 of RS-002. In its review, the staff concluded, as described in Section 2.3.4 of the draft SER, that the applicant needed to provide appropriate meteorological data and appropriate distances from the postulated accident source term release points within the proposed ESP site to the proposed EAB and LPZ outer boundary for use in estimating the site-specific χ/Q values. Section 2.3.4 of the draft SER identified this issue as Open Item 2.3-3. The site-specific χ/Q values are used in the radiological consequence evaluations for the proposed ESP site, and therefore, Section 3.3.3.4 of the draft SER identified this open item, in part, as Open Item 3.3-1.

In its submission to the NRC dated April 4, 2005, the applicant responded to Open Item 2.3-3 and the related part of Open Item 3.3-1. In this submission, the applicant recalculated the short-term accident χ/Q values using three complete years of meteorological data from January 2000 to December 2002 (instead of January 2000 to August 2002 data previously used) and using a minimum distance of 805 meters to the EAB (instead of 1025 meters previously used). The applicant stated that the 805-meter distance is the minimum distance to the proposed EAB from any point on the PPE of the ESP facility footprint. The applicant provided recalculated site specific χ/Q values in Table 1.4-1 of the SSAR. Based on the recalculated site-specific χ/Q values submitted by the applicant, the staff considers Open Item 2.3-3 resolved (see Section 2.3.4 of this final SER).

15.3.4 Source Terms and Radiological Consequence Evaluations

To evaluate the suitability of the site using the radiological consequence evaluation factors in 10 CFR 50.34(a)(1), the applicant provided the bounding reactor accident source terms as a set of PPE values based on (1) the surrogate AP1000 and certified ABWR designs (as explained below), and (2) the site-specific χ/Qs based on the ESP footprint. The source terms are expressed as the timing and release rate of fission products to the environment from the proposed ESP site. The dose consequences are then derived from the source terms using established methods.

The AP1000 source terms are based on the guidance provided in RG 1.183. The methodologies and assumptions used by Westinghouse, the AP1000 vendor, in its radiological consequence analyses are consistent with the guidance provided in RG 1.183. The resulting doses calculated by the applicant for the proposed ESP site using the AP1000 source terms, postulated site parameters assumed in the AP1000 DCD, and EGC ESP site-specific χ/Qs calculated by the applicant meet the dose consequence evaluation factors specified in 10 CFR 50.34(a)(1) (i.e., 25 rem TEDE).

The methodologies and assumptions used by General Electric, the ABWR vendor, in its radiological consequence analyses for the ABWR design are consistent with the guidance provided in RGs 1.3 and 1.25. The ABWR source terms are based on the guidance in TID-14844. The resulting doses for the proposed ESP site using the ABWR source terms and the EGC ESP site-specific χ/Qs calculated by the applicant meet the dose consequence evaluation factors in 10 CFR 100.11, "Determination of Exclusion Area, Low Population Zone, and Population Center Distance" (i.e., 300 rem to the thyroid and 25 rem to the whole body). While the requirements of 10 CFR 100.11 are not applicable to ESPs, the staff notes that the final rule at Appendix A, "Design Certification Rule for the U.S. Advanced Boiling Water Reactor," to 10 CFR Part 52, "Early Site Permits, Design Certifications, and Combined Licenses for Nuclear Power Plants," states the following:

> The Commission has determined that with regard to the revised design-basis accident radiation dose acceptance criteria in 10 CFR 50.34, the ABWR design meets the new dose criteria, based on the NRC staff's radiological consequence analyses, provided that the site parameters are not revised.

Therefore, the staff concludes that the certified ABWR design, in conjunction with the assumed site parameters, meets the dose consequence evaluation factors specified in 10 CFR 100.21, "Non-Seismic Site Criteria," and 10 CFR 50.34(a)(1).

In the draft SER, the staff stated that the applicant did not use appropriate meteorological data or appropriate distances from postulated release points to the EAB and the LPZ outer boundary to estimate the site-specific χ/Q values used in the radiological consequence evaluations. Therefore, the radiological consequence evaluation for the proposed ESP site was unresolved. The staff identified this as Open Item 3.3-1.

In its submission to the NRC dated April 4, 2005, the applicant responded to Open Item 3.3-1. The applicant stated that it had recalculated the site-specific χ/Q values and site-specific dose consequences; the tables in Chapter 3 of the SSAR provided the recalculated values. Based on the recalculated site-specific χ/Q values and the resulting recalculated site-specific dose consequences, the staff considers Open Item 3.3-1 resolved.

In determining the potential radiological consequence doses resulting from DBAs at the proposed site, the applicant used the site-specific χ/Q values, in conjunction with the DBA radiological consequence doses and the postulated χ/Q values provided in the proposed AP1000 DCD, Revision 14. The proposed AP1000 design used the postulated χ/Q values to meet the radiological consequence evaluation factors identified in 10 CFR 50.34 (a)(1).

The χ/Q values indicate the atmospheric dilution capability. Smaller χ/Q values are associated with greater dilution capability, resulting in lower radiological doses. The radiological

consequence doses are directly proportional to the χ/Q values. The applicant provided the site-specific χ/Q values used in its radiological consequence analyses in Table 1.4-1 of the SSAR, and the staff discussed and evaluated the site-specific χ/Q values in Section 2.3.4 of the final SER.

The applicant used the atmospheric dispersion computer code (PAVAN) to derive its site-specific χ/Q values at the EAB and LPZ for evaluating the radiological consequences. The staff describes the PAVAN code calculations for the proposed EGC ESP site in more detail in Section 2.3.4 of the final SER.

The applicant compared the ratios of the site-specific χ/Q values to the values postulated in the AP1000 DCD, Revision 14, to demonstrate that the radiological consequence doses at the proposed site meet the requirements of 10 CFR 50.34. The estimated site-specific χ/Q values for the proposed site are lower than the values postulated in the AP1000 DCD. The proposed AP1000 designs met the radiological consequence evaluation factors identified in 10 CFR 50.34(a)(1) with the postulated χ/Q values. Accordingly, the resulting DBA radiological consequence doses at the proposed site are lower than the doses provided in the AP1000 DCD, Revision 14, and therefore, meet the requirements of10 CFR 50.34.

In evaluating the ABWR, the applicant did not use postulated χ/Q values in its certified ABWR DCD. Instead, the applicant calculated the radiological consequence doses using the postulated activity releases in the ABWR DCD, the EGC ESP site-specific χ/Q values, and the dose conversion factors in Federal Guidance Reports 11 and 12 to meet the dose consequence evaluation factors specified in 10 CFR 100.11.

The staff believes that the radiological consequences of the DBAs at the proposed site based on the AP1000 and ABWR designs are likely to be acceptable for the other reactor designs the applicant is considering. Whether the final reactor design the applicant selects at the EGC ESP site is, in fact, bounded by the acceptance here would be subject to review during the staff's consideration of a COL or CP application. In accordance with 10 CFR 52.79(a)(1), the staff will evaluate, at the COL stage, whether the design of the facility falls within the parameters specified in the ESP, should the NRC issue one for the EGC ESP site.

The staff has verified the design-specific radiological dose consequences used by the applicant and finds them to be consistent with those evaluated by the staff as part of the design certification reviews. Furthermore, the staff finds that the references provided by the applicant and the methodology used to determine timing and release rate of fission product source terms to the environment (and resulting dose consequences) from the proposed ESP site are acceptable. Therefore, the staff finds the source terms from the ESP (PPE values) to be reasonable and acceptable. The staff intends to include the site-specific χ/Q values as site characteristics listed in Appendix A to any ESP that the NRC might issue for the EGC ESP site.

Based on its evaluation of the applicant's analysis methodology and inputs to that analysis, the staff finds that the applicant's conclusion that the dose consequences for the chosen surrogate designs comply with the dose consequence evaluation factors of 10 CFR 50.34(a)(1) to be correct.

The staff identified the following site χ/Q values as appropriate for inclusion in any ESP that the staff might issue for the EGC ESP site:

Table 15.3-2 Site-Specific χ/Q Values

Location and Time Interval	χ/Q Value
0 to 2 hour EAB	2.52×10^{-4} s/m^3
0 to 8 hour LPZ	3.00×10^{-5} s/m^3
8 to 24 hour LPZ	2.02×10^{-5} s/m^3
1 to 4 day LPZ	8.53×10^{-6} s/m^3
4 to 30 day LPZ	2.48×10^{-6} s/m^3

RS-002 calls for the staff to perform a confirmatory radiological consequence calculation. However, the design-related inputs to the applicant's dose calculation were directly extracted from design documentation previously submitted to, and reviewed by, the NRC in connection with design certification applications. Because the applicant simply used the ratio of the site-specific χ/Q values to the postulated design χ/Q values, the staff did not consider an independent calculation to be useful or necessary, and therefore, did not perform one.

At the COL stage, in accordance with 10 CFR 52.79(a)(1), the staff will evaluate whether the design of the facility falls within the parameters specified in an ESP, should one be issued for the EGC ESP site. Should the COL applicant reference a certified design as well as the ESP, and should the site characteristic χ/Q values specified in the ESP fall within the postulated χ/Qs for the chosen certified design, the staff will likely conclude that the COL applicant has satisfied this requirement. Should the COL applicant reference the ESP but not a certified design, the staff will evaluate the source term for the chosen design and will use that source term and the site χ/Qs determined at the ESP stage to determine whether the applicable regulations at 10 CFR 50.34 regarding dose consequence evaluation factors have been met. In the event of the filing of a CP referencing the ESP, the staff will evaluate the design's source terms and use the site χ/Qs from the ESP to determine compliance with the requirements of 10 CFR 50.34.

15.4 Conclusions

As set forth above, the applicant submitted its radiological consequence analyses using the site-specific χ/Q values and PPE source term values and concluded that the proposed ESP site meets the radiological consequence evaluation factors identified in 10 CFR 50.34(a)(1).

Based on the reasons set forth above, the staff finds that the applicant's PPE values for source terms included as inputs to the radiological consequence analyses are reasonable. Furthermore, the staff finds that the applicant's site-specific χ/Q values and dose consequence evaluation methodology are acceptable.

Therefore, the staff concludes that the proposed distances to the EAB and the LPZ outer boundary of the proposed ESP site, in conjunction with the fission product release rates to the environment provided by the applicant as PPE values, are adequate to provide reasonable assurance that the radiological consequences of the DBAs will be within the dose consequence evaluation factors set forth in 10 CFR 50.34(a)(1) for the proposed ESP site. This conclusion is subject to confirmation at the COL or CP stage that the design of the facility specified by the COL or CP applicant falls within the ESP PPE values.

The staff further concludes that (1) the applicant demonstrated that the proposed ESP site is suitable for power reactors with source term characteristics bounded by those of the ABWR and AP1000 without undue risk to the health and safety of the public, and (2) the applicant complied with the requirements of 10 CFR 52.17 and 10 CFR Part 100.