Appendix A

Permit Conditions, COL Action Items, Site Characteristics, and Bounding Parameters

A.1 Permit Conditions

Permit Condition: The Commission's regulation in 10 CFR 52.24 authorizes the inclusion of limitations and conditions in an ESP. A permit condition is not needed when an existing NRC regulation requires a future regulatory review of a matter to ensure adequate safety during design, construction, or inspection activities for a new plant. The staff is proposing that the Commission include **six** permit conditions, which are set forth below, to control various safety matters.

Permit Condition No.	SER Section	Description
2.1 - Introduction		
1	2.1.2	The NRC staff proposes to include a condition in any ESP that might be issued in connection with this application to govern exclusion area control. This permit condition would require an agreement granting EGC an exclusive and irrevocable option to purchase, enter a long-term lease, and/or other legal right in the land required to satisfy the requirements of 10 CFR Part 100 for the ESP facility, be obtained and executed before submission of an application for a COL seeking authority to construct and operate a nuclear power plant referencing the ESP.
2	2.1.2	The NRC staff proposes to include a condition in any ESP that might be issued in connection with this application requiring that the ESP holder obtain the right to implement the site redress plan before initiating any activities authorized by 10 CFR 52.25.

Permit Condition No.	SER Section	Description
2.4 - Hydrology		
3	2.4.12.3	The applicant's description of the effluent-holding facility presumed (see Sections 2.4.13.1 and 2.4.13.3 of this SER) that there will be no scenario where liquid radioactive effluent could be released above the ambient groundwater table, including the scenario where the effluent-holding facility could be flooded raising the release point above the ambient groundwater table. The staff agreed that under these assumptions, release of liquid radioactive effluent to ambient groundwater can be precluded. Therefore, the staff determined that it is necessary to ensure that the hydraulic gradient will always point inwards into the radwaste holding and storage facility from ambient groundwater during construction and operation of the ESP facility, including the time during which recovery of groundwater occurs to near its pre-dewatering elevation.
4	2.4.13.3	The NRC staff proposes to include a condition in any ESP that might be issued in connection with this application requiring a radwaste facility design for a future reactor with features to preclude any and all accidental releases of radio-nuclides into any potential liquid pathway is necessary.
5	2.4.13.3	The staff determined that the preclusion of radioactive effluent discharge into ambient groundwater system at the ESP site is primarily and crucially dependent on the hydraulic gradient pointing from ambient subsurface into the effluent holding facility. The staff also determined that it is essential to institute a groundwater monitoring program at the ESP site to continuously monitor and verify that the central assumption for preclusion of radioactive release to groundwater is not violated. The staff stated this requirement as Permit Condition 3 in Section 2.4.12.3 of this SER. The staff will also require that this monitoring system be kept in place and the monitoring program be kept in operation for the life of the ESP facility, including its decommissioning.
2.5 - Geology, Seismology, and Geotechnical Engineering		
6	2.5.4.3.8	The NRC staff proposes to include a condition in any ESP that might be issued in connection with this application requiring that the ESP holder either remove or replace or improve the soils above 60 ft below the ground surface to reduce any liquefaction potential.

A.2 COL Action Items

COL Action Items: The combined license (COL) action items set forth in the SER and incorporated herein identify certain matters that shall be addressed in the final safety analysis report (FSAR) by an applicant who submits an application referencing the Clinton ESP. These items constitute information requirements but do not form the only acceptable set of information in the FSAR. An applicant may depart from or omit these items, provided that the departure or omission is identified and justified in the FSAR. In addition, these items do not relieve an applicant from any requirement in 10 CFR Parts 50 and 52 that govern the application. After issuance of a construction permit (CP) or COL, these items are not controlled by NRC requirements unless such items are restated in the preliminary safety analysis report or FSAR, respectively.

The staff identified the following COL action items with respect to individual site characteristics in order to ensure that particular significant issues are tracked and considered during the review of a later application referencing any ESP that might be issued for the Clinton ESP site.

Action Item No.	SER Section	Subject To Be Addressed	Reason for Deferral
2.1- Geography and Demography			
2.1-1	2.1.1	A COL or CP applicant should provide latitude, longitude, and Universal Transverse Mercator coordinates for new unit(s) on the ESP site.	Exact unit locations not known at ESP stage.
2.1-2	2.1.2	A COL or CP applicant should make arrangements with the appropriate local, State, Federal, or other public agencies to provide for control of the portions of Clinton Lake that lies within the exclusion area.	Such arrangements not required at ESP stage.
2.2 - Nearby Industrial, Transportation, and Military Facilities			
2.2-1	2.2.1.3-2.2.2.3	A COL or CP applicant should assess design-specific interactions between the existing and new units and, if necessary, propose measures to account for such interactions.	New unit design and specific location not known at ESP stage.

Action Item No.	SER Section	Subject To Be Addressed	Reason for Deferral
2.3 - Meteorology			
2.3-1	2.3.2	A COL or CP applicant should, as part of detailed engineering, assess the potential impact of natural and/or mechanical cooling towers on the design and operation of the new facility.	Cooling tower location and design not known at ESP stage.
2.3-2	2.3.4	A COL or CP applicant should assess dispersion of airborne radioactive materials to the control room.	Control room location and design not known at ESP stage.
2.3-3	2.3.5	A COL or CP application should verify specific release point characteristics and specific locations of potential receptors of interest used to generate the long-term (routine release) atmospheric dispersion site characteristics.	Exact release points and receptor locations not known at ESP stage.
2.4 - Hydrology			
2.4-1	2.4.1.3	The COL applicant to ensure that the ESP facility intake piping is installed with adequate clearance from the CPS facility piping.	The feasibility of the use of the existing discharge tunnel from the abandoned units is not known at the ESP stage.
2.4-2	2.4.1.3	The COL applicant should provide the detail design of the UHS system, if a UHS is required by the selected reactor type for the ESP facility.	The design of the UHS system depends on the reactor design. Reactor design not known at ESP stage.
2.4-3	2.4.2.3	The COL applicant should design the ESP intake structures to withstand the combined effects of PMF, coincident wind wave activity, and wind setup, as discussed further in Section 2.4.3 of this SER.	The requirement of a UHS and the necessity of protection of its intake structure from flooding is dependent on reactor design, which has not been selected at the ESP stage.

Action Item No.	SER Section	Subject To Be Addressed	Reason for Deferral
2.4-4	2.4.2.3	The COL applicant should demonstrate that the ESP site drainage from local intense precipitation at the ESP site can be discharged to Clinton Lake without relying on any active drainage systems that may be blocked during this event.	Detailed design of the plants, including the site grade are beyond the scope of an ESP review.
2.4-5	2.4.7.3	The COL applicant should demonstrate that the intake structure can withstand the effects of any ice sheet crushing, bending, buckling, splitting, or a combination of these modes.	The requirement of an ESP facility UHS intake structure is dependent on whether the selected reactor design requires a UHS. The reactor design has not been selected at the ESP stage.
2.4-6	2.4.7.3	The COL applicant should design the ESP facility UHS intake to maintain a minimum water temperature of 40 EF at all times to preclude formation of frazil and anchor ice on the intake inlet.	The requirement of an ESP facility UHS intake structure is dependent on whether the selected reactor design requires a UHS. The reactor design has not been selected at the ESP stage.
2.4-7	2.4.7.3	The COL applicant should ensure that the ice sheet formed on Clinton Lake would not constrain the intake. This is predicated on the ESP facility UHS intake being located at an elevation of 668 ft MSL.	The requirement of an ESP facility UHS intake structure is dependent on whether the selected reactor design requires a UHS. The reactor design has not been selected at the ESP stage.
2.4-8	2.4.8.3	The COL or CP applicant should ensure that any water-cooled UHS that may be required by a selected reactor type for the ESP facility is designed to a maximum 30-day makeup water requirement not exceeding 87 ac-ft.	The ESP water budget analysis relies on independent UHS reservoirs only, but need for a UHS is not known at the ESP stage.

Action Item No.	SER Section	Subject To Be Addressed	Reason for Deferral
2.4-9	2.4.8.3	The COL or CP applicant should establish that the ESP facility NHS is designed such that there is no over-reliance on the UHS for frequent plant shutdowns.	The requirement of an ESP facility UHS system is dependent on whether the selected reactor design requires a UHS. The reactor design has not been selected at the ESP stage.
2.4-10	2.4.8.3	The COL or CP applicant should ensure the monitoring and any required dredging of the submerged UHS pond.	The reliance of the ESP facility UHS on water available in the submerged UHS pond is dependent on the selected reactor type requiring a UHS. The reactor design has not been selected at the ESP stage.
2.4-11	2.4.11.3	The COL Applicant should develop a plant shutdown protocol when the water surface elevation in Clinton Lake falls to 677 ft MSL.	The requirement of an ESP facility UHS intake structure is dependent on whether the selected reactor design requires a UHS. The reactor design has not been selected at the ESP stage.
2.4-12	2.4.12.3	The COL applicant should ensure that ground water would not be used for either normal or safety-related plant operations.	The normal and safety-related requirements for the ESP facility depend on the selected reactor type. The reactor design has not been selected at the ESP stage.
2.4-13	2.4.12.3	The COL or CP applicant should establish conservative groundwater flow velocities and conservative soil properties that are representative of the hydrogeologic conditions at the ESP site.	Exact location and design not known at ESP stage.

Action Item No.	SER Section	Subject To Be Addressed	Reason for Deferral
2.4-14	2.4.13.3	The COL or CP applicant should conclusively prove that there will be no likely scenario that can lead to liquid radioactive release to the ambient groundwater, either above the ambient groundwater table, or below it.	The maximum elevation at which any radioactive releases can occur within the ESP facility will depend on the chosen reactor design. The reactor design has not been selected at the ESP stage.

Action Item No.	SER Section	Subject To Be Addressed	Reason for Deferral
2.5 - Geology, Seismology, and Geotechnical Information			
2.5.4-1	2.5.4	A COL or CP applicant should submit the analyses of soil-rock-structure interaction for the ESP site.	Exact unit locations and design not known at ESP stage.
2.5.4-2	2.5.4	A COL or CP applicant should address the guidance recommended in RG 1.132 regarding drilling and sampling.	Exact unit locations and design not known at ESP stage.
2.5.4-3	2.5.4	A COL or CP applicant should submit plot plans and the profiles of all seismic Category I facilities for comparison with the subsurface profile and material properties.	Exact unit locations and design not known at ESP stage.
2.5.4-4	2.5.4	The COL or CP applicant should submit excavation and backfill plans for NRC review.	Exact unit locations and design not known at ESP stage
2.5.4-5	2.5.4	The COL applicant should inform the NRC staff (1) if it encounters previously unknown geologic features that could represent a hazard to the plant and (2) when site excavations are open for examination and evaluation.	Exact unit locations and design not known at ESP stage.
2.5.4-6	2.5.4	A COL or CP applicant should assess groundwater conditions as they affect foundation stability or detailed dewatering plans.	Exact unit locations and design not known at ESP stage.
2.5.4-7	2.5.4	The COL or CP applicant should perform a complete static stability assessment (including bearing capacities, settlement analyses, and lateral load assessment) and to ensure that the bearing capacities meet the minimum value of 25 tsf.	Exact unit locations and design not known at ESP stage.
2.5.4-8	2.5.4	The COL or CP applicant should describe the design criteria and methods, including the FOSs from the design analyses.	Exact unit locations and design not known at ESP stage.
2.5.5-1	2.5.5	A COL or CP applicant should conduct a more detailed dynamic analysis of the stability of the existing slope and any new slopes using the safe-shutdown earthquake (SSE) ground motion.	Locations of safety-related structures relative to the existing or new slopes not known at ESP stage.

Action Item No.	SER Section	Subject To Be Addressed	Reason for Deferral
2.5.6-1	2.5.6	The COL applicant should perform evaluations (if appropriate) at the COL stage to assess the performance of the submerged dam forming the UHS under the ESP SSE ground motion.	Exact unit location and design not known, therefore, need for UHS cannot be determined at ESP stage.

Action Item No.	SER Section	Subject To Be Addressed	Reason for Deferral
11.1 Radiological Effluents			
11.1-1	11.1	A COL or CP applicant should verify that the calculated radiological doses to members of the public from radioactive gaseous and liquid effluents for any facility to be built on the Exelon ESP site are bounded by the radiological doses included in the ESP application and reviewed by the NRC.	Specific details of how the new facility will control, monitor, and maintain radioactive gaseous and liquid effluents not known at ESP stage.
13.6 - Industrial Security			
13.6-1	13.6	A COL or CP applicant should provide specific designs for protected area barriers.	Exact locations and design of barriers not known at ESP stage.

A.3 Site Characteristics

Site Characteristics: Based on site investigation, exploration, analysis and testing, the applicant initially proposes a set of site characteristics. These site characteristics are specific physical attributes of the site, whether natural or man-made. Site characteristics, if reviewed and approved by the staff, are specified in the ESP. The staff proposes to include the following site characteristics in any ESP that might be issued for the Exelon ESP site.

Site Characteristic	Value	Definition
2.1 - Introduction		
Exclusion Area Boundary	The perimeter of a 3362 ft (0.64 mile) radius circle from the center of the proposed ESP facility footprint.	The area surrounding the reactor, in which the reactor licensee has the authority to determine all activities including exclusion or removal of personnel and property from the area
Low Population Zone	13,182 ft (2.5 mile) radius circle from the center of the proposed ESP facility footprint.	The area immediately surrounding the exclusion area which contains residents
Population Center Distance	22 miles	The minimum allowable distance from the reactor to the nearest boundary of a densely populated center containing more than about 25,000 residents

Site Characteristic		Value	Definition
2.3 - Meteorology			
Ambient Air Temperature and Humidity			
Maximum Dry-Bulb Temperature	2% annual exceedance	88 °F with 74 °F concurrent wet-bulb	The ambient dry-bulb temperature (and coincident wet-bulb temperature) that will be exceeded 2% of the time annually
	1% annual exceedance	91 °F	The ambient dry-bulb temperature that will be exceeded 1% of the time annually
	0.4% annual exceedance	94 °F with 77 °F concurrent wet-bulb	The ambient dry-bulb temperature (and coincident wet-bulb temperature) that will be exceeded 0.4% of the time annually
	100-year return period	117 °F	The ambient dry-bulb temperature that has a 1% annual probability of being exceeded (100-year mean recurrence interval)
Minimum Dry-Bulb Temperature	99% annual exceedance	0 °F	The ambient dry-bulb temperature below which dry-bulb temperatures will fall 1% of the time annually
	99.6% annual exceedance	-6 °F	The ambient dry-bulb temperature below which dry-bulb temperatures will fall 0.4% of the time annually

Site Characteristic		Value	Definition
	100-year return period	-36 °F	The ambient dry-bulb temperature for which a 1% annual probability of a lower dry-bulb temperature exists (100-year mean recurrence interval)
Maximum Wet-Bulb Temperature	1% annual exceedance	78 °F	The ambient wet-bulb temperature that will be exceeded 1% of the time annually
	0.4% annual exceedance	80 °F	The ambient wet-bulb temperature that will be exceeded 0.4% of the time annually
	100-year return period	86 °F	The ambient wet-bulb temperature that has a 1% annual probability of being exceeded (100-year mean recurrence interval)
Basic Wind Speed			
Fastest Mile		75 mi/hr	The fastest-mile wind speed to be used in determining wind loads, defined as the fastest-mile wind speed at 33 feet (10 meters) above the ground that has a 1% annual probability of being exceeded (100-year mean recurrence interval)

Site Characteristic	Value	Definition
3-second Gust	96 mi/hr	The 3-second gust wind speed to be used in determining wind loads, defined as the 3-second gust wind speed at 33 feet (10 meters) above the ground that has a 1% annual probability of being exceeded (100-year mean recurrence interval)
Design-Basis Tornado		
Maximum Wind Speed	300 mi/hr	Maximum wind speed resulting from passage of a tornado having a probability of occurrence of 10^{-7} per year
Translational Speed	60 mi/hr	Translation component of the maximum tornado wind speed
Rotational Speed	240 mi/hr	Rotation component of the maximum tornado wind speed
Radius of Maximum Rotational Speed	150 ft	Distance from the center of the tornado at which the maximum rotational wind speed occurs
Maximum Pressure Drop	2.0 lbf/in^2	Decrease in ambient pressure from normal atmospheric pressure resulting from passage of the tornado
Maximum Rate of Pressure Drop	1.2 $lbf/in^2/s$	Rate of pressure drop resulting from the passage of the tornado

Site Characteristic	Value	Definition
Winter Precipitation		
100-year Snowpack	24.4 lbf/ft²	Weight of the 100-year return period snowpack (to be used in determining normal winter precipitation loads for roofs)
48-Hour Probable Maximum Winter Precipitation	16.6 in. of water	Probable maximum precipitation during the winter months (to be used in conjunction with the 100-year snowpack in determining extreme winter precipitation loads for roofs)
Ultimate Heat Sink Ambient Air Temperature and Humidity		
Meteorological Conditions Resulting in the Minimum Water Cooling During Any 1 Day	81°F wet-bulb temperature with coincident 87.6 °F dry-bulb temperature	Historic worst 1-day daily average wet-bulb temperature and coincident dry-bulb temperature
Meotorological Conditions Resulting in the Minimum Water Cooling During Any Consecutive 5 days	79.7 °F wet-bulb temperature with coincident 86.2 °F dry-bulb temperature	Historic worst 5-day daily average wet-bulb temperature and coincident dry-bulb temperature
Meteorological Conditions Resulting in the Maximum Evaporation and Drift Loss During Any Consecutive 30 Days	74.7 °F wet-bulb temperature with coincident 82 °F dry-bulb temperature	Historic worst 30-day daily average wet-bulb temperature and coincident dry-bulb temperature

Site Characteristic	Value	Definition
Short-Term (Accident Release) Atmospheric Dispersion		
0–2 hr χ/Q Value @ EAB (5% value)	2.52×10^{-4} s/m³	The 0–2 hour atmospheric dispersion factor to be used to estimate dose consequences of design-basis accidents at the EAB
0–8 hr χ/Q Value @ LPZ (5% value)	3.00×10^{-5} s/m³	The 0–8 hour atmospheric dispersion factor to be used to estimate dose consequences of design-basis accidents at the LPZ
8–24 hr χ/Q Value @ LPZ (5% value)	2.02×10^{-5} s/m³	The 8–24 hour atmospheric dispersion factor to be used to estimate dose consequences of design-basis accidents at the LPZ
1–4 day χ/Q Value @ LPZ (5% value)	8.53×10^{-6} s/m³	The 1–4 day atmospheric dispersion factor to be used to estimate dose consequences of design-basis accidents at the LPZ
4–30 day χ/Q Value @ LPZ (5% value)	2.48×10^{-6} s/m³	The 4–30 day atmospheric dispersion factor to be used to estimate dose consequences of design-basis accidents at the LPZ
Long-Term (Routine Release) Atmospheric Dispersion		
Annual Average Undepleted/No Decay χ/Q Value @ EAB	2.04×10^{-6} s/m³	The maximum annual average EAB undepleted/no decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual

Site Characteristic	Value	Definition
Annual Average Undepleted/2.26-day Decay χ/Q Value @ EAB	2.04×10^{-6} s/m^3	The maximum annual average EAB undepleted/2.26-day decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual
Annual Average Depleted/8.00-day Decay χ/Q Value @ EAB	1.84×10^{-6} s/m^3	The maximum annual average EAB depleted/8.00-day decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual
Annual Average D/Q Value @ EAB	1.46×10^{-8} 1/m^2	The maximum annual average EAB D/Q value for use in determining gaseous pathway doses to the maximally exposed individual
Annual Average Undepleted/No Decay χ/Q Value @ Nearest Milk Cow	1.10×10^{-6} s/m^3	The maximum annual average milk cow undepleted/no decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual
Annual Average Undepleted/2.26-day Decay χ/Q Value @ Nearest Milk Cow	1.10×10^{-6} s/m^3	The maximum annual average milk cow undepleted/2.26-day decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual

Site Characteristic	Value	Definition
Annual Average Depleted/8.00-day Decay χ/Q Value @ Nearest Milk Cow	9.63×10^{-7} s/m^3	The maximum annual average milk cow depleted/8.00-day decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual
Annual Average D/Q Value @ Nearest Milk Cow	6.76×10^{-9} 1/m^2	The maximum annual average milk cow D/Q value for use in determining gaseous pathway doses to the maximally exposed individual
Annual Average Undepleted/No Decay χ/Q Value @ Nearest Goat Milk	9.90×10^{-8} s/m^3	The maximum annual average goat milk undepleted/no decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual
Annual Average Undepleted/2.26-day Decay χ/Q Value @ Nearest Goat Milk	9.72×10^{-8} s/m^3	The maximum annual average goat milk undepleted/2.26-day decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual
Annual Average Depleted/8.00-day Decay χ/Q Value @ Nearest Goat Milk	7.28×10^{-8} s/m^3	The maximum annual average goat milk depleted/8.00-day decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual
Annual Average D/Q Value @ Nearest Goat Milk	4.21×10^{-10} 1/m^2	The maximum annual average meat animal D/Q value for use in determining gaseous pathway doses to the maximally exposed individual

Site Characteristic	Value	Definition
Annual Average Undepleted/No Decay χ/Q Value @ Nearest Garden	1.10×10^{-6} s/m^3	The maximum annual average garden undepleted/no decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual
Annual Average Undepleted/2.26-day Decay χ/Q Value @ Nearest Garden	1.10×10^{-6} s/m^3	The maximum annual average garden undepleted/2.26-day decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual
Annual Average Depleted/8.00-day Decay χ/Q Value @ Nearest Garden	9.63×10^{-7} s/m^3	The maximum annual average garden depleted/8.00-day decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual
Annual Average D/Q Value @ Nearest Garden	6.76×10^{-9} 1/m^2	The maximum annual average garden D/Q value for use in determining gaseous pathway doses to the maximally exposed individual
Annual Average Undepleted/No Decay χ/Q Value @ Nearest Meat Animal	1.10×10^{-6} s/m^3	The maximum annual average meat animal undepleted/no decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual
Annual Average Undepleted/2.26-day Decay χ/Q Value @ Nearest Meat Animal	1.10×10^{-6} s/m^3	The maximum annual average meat animal undepleted/2.26-day decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual

Site Characteristic	Value	Definition
Annual Average Depleted/8.00-day Decay χ/Q Value @ Nearest Meat Animal	9.63×10^{-7} s/m^3	The maximum annual average meat animal depleted/8.00-day decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual
Annual Average D/Q Value @ Nearest Meat Animal	6.76×10^{-9} 1/m^2	The maximum annual average meat animal D/Q value for use in determining gaseous pathway doses to the maximally exposed individual
Annual Average Undepleted/No Decay χ/Q Value @ Nearest Resident	1.50×10^{-6} s/m^3	The maximum annual average resident undepleted/no decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual
Annual Average Undepleted/2.26-day Decay χ/Q Value @ Nearest Resident	1.49×10^{-6} s/m^3	The maximum annual average resident undepleted/2.26-day decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual
Annual Average Depleted/8.00-day Decay χ/Q Value @ Nearest Resident	1.34×10^{-6} s/m^3	The maximum annual average resident depleted/8.00-day decay χ/Q value for use in determining gaseous pathway doses to the maximally exposed individual
Annual Average D/Q Value @ Nearest Resident	6.76×10^{-9} 1/m^2	The maximum annual average resident D/Q value for use in determining gaseous pathway doses to the maximally exposed individual

Site Characteristic	Value	Definition
2.4 - Hydrology		
Hydrology		
Proposed Facility Boundaries	Appendix A, Figure 1 (FSER Figure 2.4.14) shows the proposed facility boundary	ESP site boundary map
Site Grade	735 ft MSL	Finished plant grade at the ESP site
Highest Ground Water Elevation	733.5 ft MSL	The maximum elevation of ground water at the ESP site
Flood Elevation	721.7 ft MSL	The maximum flood level at the ESP site
Local Intense Precipitation	18.15 in during 1 hour	Maximum potential rainfall at the immediate ESP site
Lake Surface Icing	27 in	Ice sheet thickness at Clinton Lake (based on maximum cumulative degree-days below freezing)
Maximum Cumulative Degree-Days	1141.5 in Fahrenheit	A measure of severity of winter weather conditions conducive to ice formation
Frazil and Anchor Ice	The ESP site has the potential for formation of frazil and anchor ice.	Accumulated ice formation in a turbulent flow condition

Site Characteristic		Value	Definition
2.5 - Geology, Seismology, and Geotechnical Engineering			
Basic Geologic and Seismic Information			
Capable Tectonic Structures		------	No fault displacement potential within the investigative area
Vibratory Ground Motion			
Design Response Spectra (Safe Shutdown Earthquake)		Appendix A, Figure 2 (FSER Figure 2.5.2-16)	Site Specific response spectra
Stability of Subsurface Materials and Foundations			
Minimum Bearing Capacity (Static)		50,0000 lbs/ft^2 (25 tsf)	
Minimum Shear Wave Velocity	0 - 50 ft	820 fps	Propagation of shear waves through foundation materials
	50 - 285 ft	1090 fps	
	285 - 310 ft	2580 fps	

A.4 Bounding Parameters

Plant Parameter Envelope: A plant parameter envelope (PPE) sets forth postulated values of design parameters that provide design details to support the NRC staff's review of an ESP application. A controlling PPE value, or bounding parameter value, is one that necessarily depends on a site characteristic. As the PPE is intended to bound multiple reactor designs, the actual design selected in a combined license (COL) or construction permit (CP) application referencing an ESP would be reviewed to ensure that the design fits within the bounding parameter values. Otherwise, the COL or CP applicant would need to demonstrate that the design, given the site characteristics in the ESP, complies with the Commission's regulations. Should an applicant reference an ESP for a design that is not certified, the applicant would need to demonstrate that the design's characteristics fall within the bounding parameter values.

Bounding Parameters	Value	Definition
2.4 - Hydrology		
Makeup flow rate to mechanical draft cooling towers	555 gpm	Average makeup water needed for mechanical draft cooling towers of the ultimate heat sink for the proposed facility
Maximum inlet temperature to CCW heat exchanger	95 °F	Maximum allowable temperature of water on inlet side of the condenser
Evaporation rate	31,500 gpm (70.2 cfs)	Forced evaporation for the ESP facility under normal operation

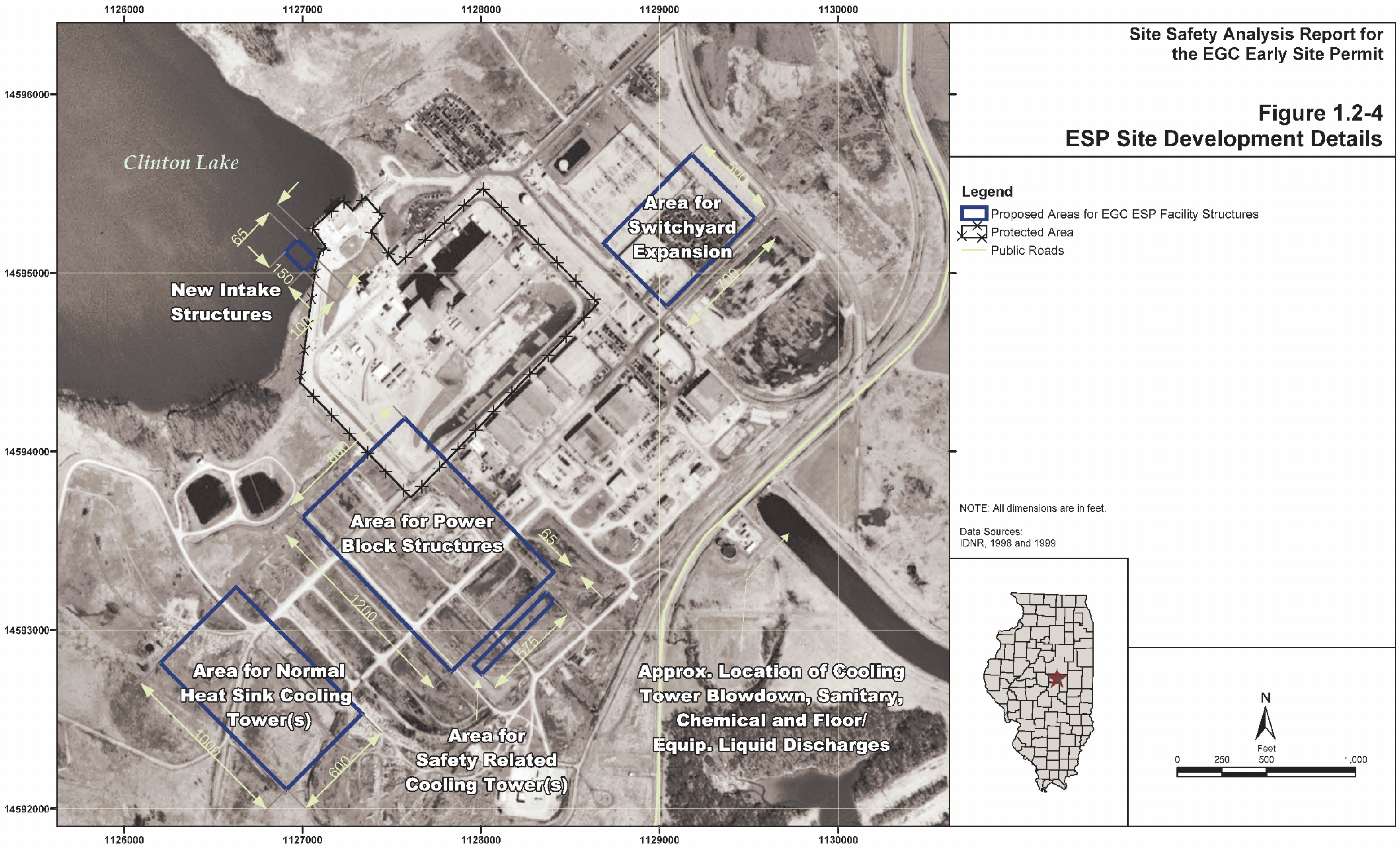

Figure 1 (SER Figure 2.4.14) The proposed facility boundary for the ESP site

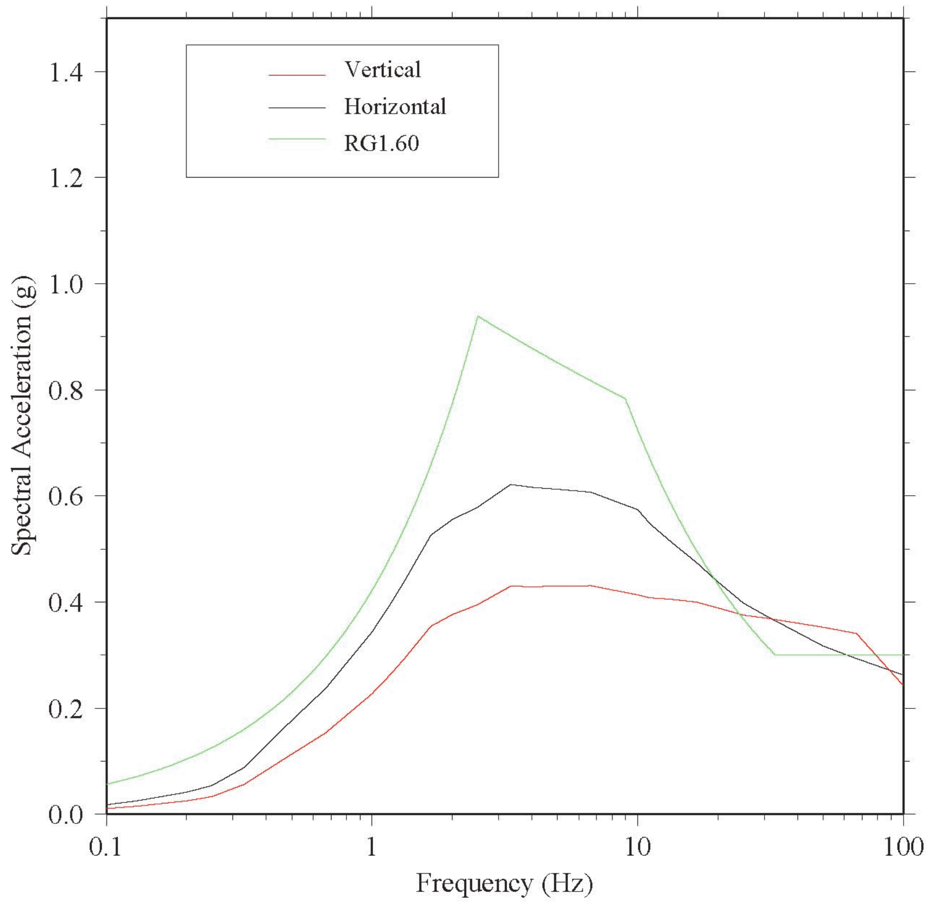

Figure 2 (SER Figure 2.5.2-16) EGC ESP horizontal and vertical ESP SSE as well as the RG 1.60 DRS anchored at 0.3g