DRAFT - 11/17/2009
NEI Plant Parameters Envelope Worksheet
Technology Supplier Input

PPE Section	Definition	Technology Supplier Value	Notes/ Comments	Parameter Type	Applicability	
					SSAR	ER
1. Structure						
1.1 Building Characteristics					X	X
1.1.1 Height (w/o Stack and Cooling Towers)	The height from finished grade to the top of the tallest power block structure, excluding cooling towers (excludes stairway towers, elevator, etc).			Rx	X	X
1.1.2 Foundation Embedment	The depth from finished grade to the bottom of the basemat for the most deeply embedded power block structure.			Rx	X	
1.2 Precipitation (for Roof Design)						
1.2.1 Maximum Rainfall Rate	The probable maximum precipitation (PMP) value that can be accommodated by a plant design. Expressed as maximum precipitation for 1 hour in 1 square mile with a ratio for five minutes to the 1 hour PMP of 0.32 as found in National Weather Service Publication HMR No. 52.			Site	X	
1.2.2 Snow Load and Ice Load	The maximum 100-yr return interval snow load on structure roofs that can be accommodated by a plant design.			Site	X	
1.3 Safe Shutdown Earthquake (SSE)						
1.3.1 Design Response Spectra	The assumed design response spectra used to establish a plant's seismic design.			Site	X	
1.3.2 Peak Ground Acceleration	The maximum earthquake ground acceleration for which a plant is designed; this is defined as the acceleration, which corresponds to the zero.period in the response spectra taken in the free field at basemat elevation.			Site	X	
1.3.3 Time History	The plot of earthquake ground motion as a function of time used to establish a plant's seismic design.			Site		
1.3.4 Capable Tectonic Structures or Sources	The assumption made in a plant design about the presence of capable faults or earthquake sources in the vicinity of the plant site (e.g., no fault displacement potential within the investigative area).			Site	X	
1.4 Site Water Level (Allowable)						
1.4.1 Maximum Flood	Design assumption regarding the difference in elevation between finished plant grade and the water level due to the probable maximum flood.			Site	X	
1.4.2 Maximum Ground Water	Design assumption regarding the difference in elevation between finished plant grade and the maximum site ground water level used in the plant design.			Site	X	
1.5 Soil Properties Design Bases						
1.5.1 Liquefaction	Design assumption regarding the presence of potentially liquefying soils at a site (e.g., none at Site-Specific SSE).			Site	X	
1.5.2 Minimum Bearing Capacity (Static)	Design assumption regarding the capacity of the competent load-bearing layer required to support the loads exerted by plant structures used in the plant design.			Site	X	
1.5.3 Minimum Shear Wave Velocity	The assumed limiting propagation velocity of shear waves through the foundation materials used in the plant design.			Site	X	
1.5.6 Dynamic Bearing Capacity	Design assumption regarding the capacity of the foundation soil/rock to resist loads imposed by the structures in the event of an earthquake.			Site	X	
1.5.7 Min. Soil Angle of Interna Friction	Design assumption for the minimum value of the internal friction angle of foundation soils, fill soils, or excavation slopes that would provide a safe design of plant through soil structure interaction analyses including sliding along the base.			Site	X	
1.6 Tornado (Design Bases)						
1.6.1 Maximum Pressure Drop	The design assumption for the decrease in ambient pressure from normal atmospheric pressure due to the passage of the tornado.			Site	X	
1.6.2 Maximum Rotational Speed	The design assumption for the component of tornado wind speed due to the rotation within the tornado.			Site	X	
1.6.3 Maximum Translational Speed	The design assumption for the component of tornado wind speed due to the movement of the tornado over the ground.			Site	X	
1.6.4 Maximum Wind Speed	The design assumption for the sum of maximum rotational and maximum translational wind speed components.			Site	X	

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					SSAR	ER
1.6.5 Missile Spectra	The design assumptions regarding missiles that could be ejected either horizontally or vertically from a tornado. The spectra identify mass, dimensions and velocity of credible missiles.			Site	X	
1.6.6 Radius of Maximum Rotational Speed	The design assumption for distance from the center of the tornado at which the maximum rotational wind speed occurs.			Site	X	
1.6.7 Rate of Pressure Drop	The assumed design rate at which the pressure drops due to the passage of the tornado.			Site	X	
1.7 Wind				Site		
1.7.1 3-Second Gust	The 3-second gust wind velocity per SEI/ASCE 7-98, associated with a 100-year return period (straight line) at 33 ft (10 m) above the ground level in the site area.			Site	X	
1.7.2 Importance Factors	Multiplication factors applied to basic wind speed to develop the plant design. Provide the definition of "multiplication factors" and the reference for the definition.			Site	X	
2. Ambient Air Requirements						
2.1.1 Norm Max Ambient Temperature (1% Exceed)	Assumption used for the maximum ambient temperature that will be exceeded no more than 1% of the time, to design plant safety and non-safety systems.			Site	X	
2.1.2 Norm Max Wet Bulb Temperature (1% Exceed)	Assumption used for the maximum wet bulb temperature that will be exceeded no more than 1% of the time - used in design of plant safety and non-safety systems (coincident and non-coincident).			Site	X	
2.1.3 Normal Min Ambient Temperature (1% Exceed)	Assumption used for the minimum ambient temperature that will be exceeded no more than 1% of the time to design of plant safety and non-safety systems.			Site	X	
2.1.4 RX Thermal Power Max Ambient Temperature (0% Exceed)	Assumption used for the historic maximum recorded ambient temperature used in design of plant systems that must be capable of supporting full reactor power operation under the assumed temperature condition.			Site	X	
2.1.5 Rx Thermal Power Max Wet Bulb Temperature (0% Exceed)	Assumption used for the historic maximum recorded wet bulb temperature used in design of plant systems that must be capable of supporting full reactor power operation under the assumed temperature condition (coincident and non-coincident).			Site	X	
2.1.6 Rx Thermal Power Min Ambient Temperature (0% Exceed)	Assumption used for the historic minimum recorded ambient temperature used in design of plant systems that must be capable of supporting full reactor power operation under the assumed temperature condition.			Site	X	
3. Normal Plant Heat Sink						
3.1 Condenser				Eng		
3.1.1 Maximum Inlet Temp Condenser/ Heat Exchanger	Design assumption for the maximum acceptable circulating water temperature at the inlet to the condenser or cooling water system heat exchangers.			Eng		X
3.1.2 Condenser / Heat Exchanger Duty	Design value for the waste heat rejected to the circulating water system across the condensers.			Eng		X
3.1.3 Maximum Cooling Water Flow Rate Across Condenser	Design value for the maximum flow rate of the circulating water system through the condenser tubes.			Eng		X
3.1.4 Maximum Cooling Water Temperature Rise Across Condenser	Design value for the maximum temperature differential across the condenser.			Eng		X
3.2 Non-Safety Related Service Water Systems						
3.2.1 Maximum Inlet Temp to SW Heat Exchanger	The maximum temperature of non-safety related service water at the inlet of the service water heat exchanger.			Rx		X
3.2.2 SW Heat Exchanger Duty	The heat transferred to the non-safety related service water system for rejection to the environment.			Rx		X
3.3 Mechanical Draft Cooling Towers				Eng		
3.3.1 Acreage	The land required for cooling towers, including support facilities such as equipment sheds, basins, canals, or shoreline buffer areas.			Eng		x
3.3.2 Approach Temperature	The difference between the cold water temperature and the ambient wet bulb temperature.			Eng		x

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					SSAR	ER
3.3.3 Blowdown Constituents and Concentrations	The maximum expected concentrations for anticipated constituents in the cooling water systems blowdown to the receiving water body.			Eng		x
3.3.4 Blowdown Flow Rate	The normal (and maximum) flow rate of the blowdown stream from the cooling water systems to the receiving water body for closed system designs			Eng		x
3.3.5 Blowdown Temperature	The maximum expected blowdown temperature at the point of discharge to the receiving water body.			Eng		x
3.3.6 Cycles of Concentration	The ratio of total dissolved solids in the cooling water blowdown streams to the total dissolved solids in the make-up water streams.			Eng		x
3.3.7 Evaporation Rate	The expected (and maximum) rate at which water is lost by evaporation from the cooling water systems.			Eng		x
3.3.8 Height	The vertical height above finished grade of mechanical draft cooling towers associated with the coolinig water systems.			Eng		x
3.3.9 Makeup Flow Rate	The expected (and maximum) rate of removal of water from a natural source to replace water losses from closed cooling water system.			Eng		x
3.3.10 Noise	The maximum expected sound level produced by operation of cooling towers, measured at 1000 feet from the noise source.			Eng		X
3.3.11 Cooling Tower Temperature Range	The temperature difference between the cooling water entering and leaving the towers.			Eng		X
3.3.12Cooling Water Flow Rate	The total cooling water flow rate through the condenser/heat exchangers.			Eng		X
3.3.13 Heat Rejection Rate (Blowdown)	The expected heat rejection rate to a receiving water body, expressed as flow rate in gallons per minute at a temperature in degrees Fahrenheit.			Eng		X
3.3.14 Maximum Consumption of Raw Water	The expected maximum short-term consumptive use of water by the cooling water systems (evaporation and drift losses).			Eng		X
3.3.15 Monthly Average Consumption of Raw Water	The expected normal operating consumption of water by the cooling water systems (evaporation and drift losses).			Eng		X
3.3.16 Stored Water Volume	The quantity of water stored in cooling water system impoundments, basins, tanks and/or ponds.			Eng		X
3.3.17 Drift	Rate of water lost from the tower as liquid droplets entrained in the vapor exhaust air stream.			Eng		X
3.4 Natural Draft Cooling Towers				Eng		
3.4.1 Acreage	The land required for cooling towers, including support facilities such as equipment sheds, basins, canals, or shoreline buffer areas.			Eng		X
3.4.2 Approach Temperature	The difference between the cold water temperature and the ambient wet bulb temperature.			Eng		X
3.4.3 Blowdown Constituents and Concentrations	The maximum expected concentrations for anticipated constituents in the cooling water systems blowdown to the receiving water body.			Eng		X
3.4.4 Blowdown Flow Rate	The normal (and maximum) flow rate of the blowdown stream from the cooling water systems to the receiving water body for closed system designs			Eng		X
3.4.5 Blowdown Temperature	The maximum expected blowdown temperature at the point of discharge to the receiving water body.			Eng		X
3.4.6 Cycles of Concentration	The ratio of total dissolved solids in the cooling water blowdown streams to the total dissolved solids in the make-up water streams.			Eng		X
3.4.7 Evaporation Rate	The expected (and maximum) rate at which water is lost by evaporation from the cooling water systems.			Eng		X
3.4.8 Height	The vertical height above finished grade of natural draft cooling towers associated with the coolinig water systems.			Eng		X
3.4.9 Makeup Flow Rate	The expected (and maximum) rate of removal of water from a natural source to replace water losses from closed cooling water system.			Eng		X
3.4.10 Noise	The maximum expected sound level produced by operation of cooling towers, measured at 1000 feet from the noise source.			Eng		X
3.4.11 Cooling Tower Temperature Range	The temperature difference between the cooling water entering and leaving the towers.			Eng		X

PPE Section	Definition	Technology Supplier Value	Notes/ Comments	Parameter Type	Applicability	
					SSAR	ER
3.4.12 Cooling Water Flow Rate	The total cooling water flow rate through the condenser/heat exchangers.			Eng		X
3.4.13 Heat Rejection Rate (Blowdown)	The expected heat rejection rate to a receiving water body, expressed as flow rate in gallons per minute at a temperature in degrees Fahrenheit.			Eng		X
3.4.14 Maximum Consumption of Raw Water	The expected maximum short-term consumptive use of water by the cooling water systems (evaporation and drift losses).			Eng		X
3.4.15 Monthly Average Consumption of Raw Water	The expected normal operating consumption of water by the cooling water systems (evaporation and drift losses).			Eng		X
3.4.16 Stored Water Volume	The quantity of water stored in cooling water system impoundments, basins, tanks and/or ponds.			Eng		X
3.4.17 Drift	Rate of water lost from the tower as liquid droplets entrained in the vapor exhaust air stream.			Eng		X
3.5 Ponds				Eng		
3.5.1 Acreage	The land required for ponds, including support facilities such as equipment sheds, basins, canals, or shoreline buffer areas.			Eng		X
3.5.2 Blowdown Constituents and Concentrations	The maximum expected concentrations for anticipated constituents in the cooling water systems blowdown to the receiving water body.			Eng		X
3.5.3 Blowdown Flow Rate	The normal (and maximum) flow rate of the blowdown stream from the cooling water systems to the receiving water body for closed system designs.			Eng		X
3.5.4 Blowdown Temperature	The maximum expected blowdown temperature at the point of discharge to the receiving water body.			Eng		X
3.5.5 Cycles of Concentration	The ratio of total dissolved solids in the cooling water blowdown streams to the total dissolved solids in the make-up water streams.			Eng		X
3.5.6 Evaporation Rate	The expected (and maximum) rate at which water is lost by evaporation from the cooling water systems.			Eng		X
3.5.7 Heat Rejection Rate (Blowdown)	The expected heat rejection rate to a receiving water body, expressed as flow rate in gallons per minute at a temperature in degrees Fahrenheit.			Eng		X
3.5.8 Makeup Flow Rate	The expected (and maximum) rate of removal of water from a natural source to replace water losses from closed cooling water system.			Eng		X
3.5.9 Stored Water Volume	The quantity of water stored in cooling water system impoundments, basins, tanks and/or ponds.			Eng		X
3.5.10 Cooling Pond Temperature Range	The temperature difference between the cooling water entering and leaving the ponds.			Eng		X
3.5.11 Cooling Water Flow Rate	The total cooling water flow rate through the condenser/heat exchangers.			Eng		X
3.5.12 Maximum Consumption of Raw Water	The expected maximum short-term consumptive use of water by the cooling water systems (evaporation and drift losses).			Eng		X
3.5.13 Monthly Average Consumption of Raw Water	The expected normal operating consumption of water by the cooling water systems (evaporation and drift losses).			Eng		X
4. Ultimate Heat Sink						
4.1 CCW Heat Exchanger				Rx		
4.1.1 Maximum Inlet Temp to CCW Heat Exchanger	The maximum temperature of safety-related service water at the inlet of the UHS component cooling water heat exchanger.			Rx		X
4.1.2 CCW (RCW) Heat Exchanger Duty	The heat transferred to the safety-related service water system for rejection to the environment in UHS heat removal devices.			Rx		X
4.2 Mechanical Draft Cooling Towers				Eng		
4.2.1 Acreage	The land required for UHS cooling towers or ponds, including support facilities such as equipment sheds, basins, canals, or shoreline buffer areas.			Eng	X	X

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					SSAR	ER
4.2.2 Approach Temperature	The difference between the cold water temperature and the ambient wet bulb temperature.			Eng		
4.2.3 Blowdown Constituents and Concentrations	The maximum expected concentrations for anticipated constituents in the UHS blowdown to the receiving water body.			Eng		X
4.2.4a Blowdown Flow Rate (Normal)	The maximum flow rate of the blowdown stream from the UHS system to receiving water body for closed system designs during normal operation.			Eng		X
4.2.4b Blowdown Flow Rate (Accident)	The maximum flow rate of the blowdown stream from the UHS system to receiving water body for closed system designs during accident conditions.			Eng		
4.2.5a Blowdown Temperature (Normal)	The maximum expected UHS blowdown temperature at the point of discharge to the receiving water body during normal operation			Eng		X
4.2.5b Blowdown Temperature (Accident)	The maximum expected UHS blowdown temperature at the point of discharge to the receiving water body during accident conditions			Eng		
4.2.6 Cycles of Concentration	The ratio of total dissolved solids in the UHS system blowdown streams to the total dissolved solids in the make-up water streams.			Eng		X
4.2.7a Evaporation Rate (Normal)	The maximum rate at which water is lost by evaporation from the UHS system during normal operations.			Eng		X
4.2.7b Evaporation Rate (Accident)	The maximum rate at which water is lost by evaporation from the UHS system during accident conditions.			Eng		
4.2.8a Cooling Tower Deck Height	The height of the cooling tower deck above grade.			Eng		
4.2.8b Exhaust Stack Height	The height of the exhaust stack above deck.			Eng		X
4.2.9a Makeup Flow Rate (Normal)	The maximum rate of removal of water from a natural source to replace water losses from the UHS system during normal operations.			Eng		X
4.2.9b Makeup Flow Rate Assumed (Accident)	The maximum rate of removal of water from a natural source assumed to replace water losses from the UHS system during accident conditions.			Eng		
4.2.10 Noise	The maximum expected sound level produced by operation of mechanical draft UHS cooling towers, measured at 1000 feet from the noise source.			Eng		X
4.2.11 Cooling Tower Temperature Range	The temperature difference between the cooling water entering and leaving the UHS system.			Eng		X
4.2.12 Cooling Water Flow Rate	The total cooling water flow rate through the UHS system.			Eng		X
4.2.13a Heat Rejection Rate (Normal)	The maximum expected heat rejection rate to the atmosphere during normal operations.			Eng		X
4.2.13b Heat Rejection Rate (Accident)	The maximum expected heat rejection rate to the atmosphere during accident conditions.			Eng		
4.2.14 Maximum Consumption of Raw Water	The expected maximum short-term consumptive use of water by the UHS system (evaporation and drift losses).			Eng		X
4.2.15 Monthly Average Consumption of Raw Water	The expected normal operating consumption of water by the UHS system (evaporation and drift losses).			Eng		X
4.2.16 Stored Water Volume	The quantity of water stored in UHS impoundments, basins, tanks and/or ponds.			Eng		X
4.2.17 Drift	Rate of water lost from the tower as liquid droplets entrained in the vapor exhaust air stream.			Eng		x
4.3 Once-Through Cooling				Eng		x
4.3.1 Cooling Water Discharge Temperature	Expected temperature of the cooling water at the exit of the UHS system.			Eng		x
4.3.2 Cooling Water Flow Rate	Total cooling water flow rate through the UHS (also the rate of withdrawal from and return to the water source).			Eng		x
4.2.3 Cooling Water Temperature Rise	Temperature rise across the heat exchangers cooled by the UHS (temperature of water out minus temperature of water in).			Eng		x
4.3.4 Minimum Essential Flow Rate	Minimum flow required to maintain required heat removal capacity under design-basis accident conditions.			Eng		x
4.3.5 Evaporation Rate	The expected (and maximum) rate at which water is lost by evaporation from the UHS as a result of heat rejection from the plant.			Eng		x
4.3.6 Heat Rejection Rate	The expected heat rejection rate to the UHS.			Eng		x

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					SSAR	ER
4.4 Ponds				Eng		
4.4.1 Acreage	The land required for UHS ponds, including support facilities such as equipment sheds, basins, canals, or shoreline buffer areas.			Eng	x	x
4.4.2 Blowdown Constituents and Concentrations	The maximum expected concentrations for anticipated constituents in the UHS blowdown to the receiving water body.			Eng		x
4.4.3 Blowdown Flow Rate	The normal (and maximum) flow rate of the blowdown stream from the UHS system to the receiving water body for closed system designs.			Eng		x
4.4.4 Blowdown Temperature	The maximum expected UHS blowdown temperature at the point of discharge to the receiving water body.			Eng		x
4.4.5 Cycles of Concentration	The ratio of total dissolved solids in the UHS system blowdown streams to the total dissolved solids in the makeup water streams.			Eng		x
4.4.6 Evaporation Rate	The expected (and maximum) rate at which water is lost by evaporation from the UHS system.			Eng		x
4.4.7 Makeup Flow Rate	The expected (and maximum) rate of removal of water from a natural source to replace water losses from the UHS system.			Eng		x
4.4.8 Cooling Pond Temperature Range	The temperature difference between the cooling water entering and leaving the UHS.			Eng		x
4.4.9 Cooling Water Flow Rate	The total cooling water flow rate through the UHS system.			Eng		x
4.4.10 Heat Rejection Rate (Blowdown)	The expected heat rejection rate to a receiving water body, expressed as flow rate in gallons per minute at a temperature in degrees Fahrenheit.			Eng		x
4.4.11 Maximum Consumption of Raw Water	The expected maximum short-term consumptive use of water by the UHS system (evaporation and drift losses).			Eng		x
4.4.12 Monthly Average Consumption of Raw Water	The expected normal operating consumption of water by the UHS system (evaporation and drift losses).			Eng		x
4.4.13 Stored Water Volume	The quantity of water stored in UHS ponds.			Eng		X
5. Potable Water/Sanitary Waste System				Rx		
5.1 Discharge to Site Water Bodies				Rx		
5.1.1 Flow Rate (Potable/Sanitary Normal)	The expected (normal) effluent flow rate from the potable/sanitary water system to the receiving water body.			Rx		X
5.1.2 Flow Rate (Potable/Sanitary Maximum)	The maximum effluent flow rate from the potable/sanitary water system to the receiving water body.			Rx		X
5.2 Raw Water Requirements				Site		
5.2.1 Maximum Use	The maximum short-term rate of withdrawal from the water source for the potable and sanitary waste water systems.			Site		X
5.2.2 Monthly Average Use	The average rate of withdrawal from the water source for the potable and sanitary waste water systems.			Site		
6. Demineralized Water Processing System				Rx		
6.1 Discharge to Site Water Bodies				Rx		
6.1.1 Flow Rate	The expected (and maximum) effluent flow rate from the demineralized processing system to the receiving water body.			Rx		X
6.2 Raw Water Requirements				Site		
6.2.1 Maximum Use	The maximum short-term rate of withdrawal from the water source for the demineralized water system.			Site		X
6.2.2 Monthly Average Use	The average rate of withdrawal from the water source for the demineralized water system.			Site		X
7. Fire Protection System				Rx		

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7.1 Raw Water Requirements				Site		x
7.1.1 Maximum Use	The maximum short-term rate of withdrawal from the water source for the fire protection water system (does not include large area fire requirements).			Site		x
7.1.2 Monthly Average Use	The average rate of withdrawal from the water source for the fire protection water system.			Site		
7.1.3 Stored Water Volume	The capacity of fire water storage impoundments, basins, or tanks.			Eng		
8. Miscellaneous Drain				Rx		
8.1 Discharge to Site Water Bodies				Rx		
8.1.1 Flow Rate (Normal)	The expected normal effluent flow rate from miscellaneous drains (other planned discharges excluding liquid radwaste and stormwater) to the receiving water body. Provide a descriptionof the drainage sources.			Rx		X
8.1.2 Flow Rate (Maximum)	The maximum effluent flow rate from miscellaneous drains (other planned discharges excluding liquid radwaste and stormwater) to the receiving water body. Provide a description of the drainage sources.			Rx		X
9. Unit Vent/Airborne Effluent Release Point						
9.1 Atmospheric Dispersion (χ/Q (Accident)	The atmospheric dispersion coefficients used in the design safety analysis to estimate dose consequences of accident airborne releases at a certain time during the accident.			Site		
9.1.1 0-2 hr @ EAB	The atmospheric dispersion coefficients used in the design safety analysis to estimate dose consequences of accident airborne releases in the limiting two hour interval.			Site	X	X
9.1.2 0-8 hr @ LPZ	The atmospheric dispersion coefficients used in the design safety analysis to estimate dose consequences of accident airborne releases in the first eight hours.			Site	X	X
9.1.3 8-24 hr @ LPZ	The atmospheric dispersion coefficients used in the design safety analysis to estimate dose consequences of accident airborne releases between hours 8 and 24 after the accident.			Site	X	X
9.1.4 1-4 day @ LPZ	The atmospheric dispersion coefficients used in the design safety analysis to estimate dose consequences of accident airborne releases between the first day and the fourth day after the accident			Site	X	X
9.1.5 4-30 day @ LPZ	The atmospheric dispersion coefficients used in the design safety analysis to estimate dose consequences of accident airborne releases between day four until the end of the first 30 days after the accident.			Site	X	X
9.1.6 Atmospheric Dispersion (X/Q) Severe Accident	The atmospheric dispersion (X/Q) used in the severe accident safety analysis for the dose consequences of airborne releases.			Site		
9.2 Atmospheric Dispersion (χ/Q)(Annual Average)	The atmospheric dispersion coefficients used in the safety analysis for the dose consequences of normal airborne releases.			Site	X	X
9.3 Calculated Dose Consequences				Site		
9.3.1 Normal	The design radiological dose consequencies due to airborne releases from normal operation of the plant.			Site	X	X
9.3.2 Post-Accident	The design radiological dose consequencies due to airborne releases from postulated accidents.			Site	X	X
9.3.3 Severe Accidents	The design radiological dose consequencies due to airborne releases from postulated severe accidents. Provide the release frequency (per reactor year) for each postulated severe accident and the associated population whole body dose in 24 hours.			Site		X
9.4 Release Point				Rx		
9.4.1 Configuration (Elevated or Ground Level Release)	The calculational release type for accident effluent dispersion (i.e., elevated or ground level).			Rx		
9.4.2 Elevation (Normal Operation)	The elevation above finished grade of the release point for routine operational releases.			Rx	X	X

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9.4.3 Elevation (Post Accident)	The elevation above finished grade of the release point for accident sequence releases.			Rx	X	X
9.4.4 Minimum Distance to Site Boundary	The minimum lateral distance from the release point to the site boundary.			Site	X	X
9.4.5 Temperature	The temperature of the airborne effluent stream at the release point.			Rx		
9.4.6 Volumetric Flow Rate	The volumetric flow rate of the airborne effluent stream at the release point.			Rx		
9.5 Source Term				Rx		
9.5.1 Gaseous (Normal)	The expected annual activity, by radionuclide, contained in routine plant airborne effluent streams, excluding tritium. Provide in Table 7.			Rx	X	X
9.5.2 Gaseous (Post-Accident	The activity, by radionuclide, contained in post-accident airborne effluents. Provide in Tables 8 & 9.			Rx	X	X
9.5.3 Tritium (Normal)	The expected annual activity of tritium contained in routine plant airborne effluent streams. Provide in Table 7.			Rx	X	X
10. Liquid Radwaste System						
10.1 Dose Consequences				Site		
10.1.1 Normal	The estimated design radiological dose consequences due to liquid effluent releases from normal operation of the plant.			Site	X	X
10.1.2 Post-Accident	The estimated design radiological dose consequences due to liquid effluent releases from postulated accidents.			Site	X	X
10.2 Release Point				Site		
10.2.1 Flow Rate	The discharge (including minimum dilution flow, if any) flow rate of liquid potentially radioactive effluent streams from plant systems to the receiving water body.			Site	X	X
10.3 Source Term				Rx		
10.3.1 Liquid	The annual activity, by radionuclide, contained in routine plant liquid effluent streams, excluding tritium. Provide in Table 10.			Rx	X	X
10.3.2 Tritium	The annual activity of tritium contained in routine plant liquid effluent streams. Provide in Table 10.			Rx	X	X
10.3.3 Activity	The assumed activity, by radionuclide, contained in accidental liquid radwaste release. Provide in Table 11.			Rx	X	X
10.3.4 Volume	The assumed volume of accidental liquid radwaste release.			Rx	X	X
11. Solid Radwaste System						
11.1 Acreage				Eng		
11.1.1 Low Level Radwaste Storage	The land usage required to provide onsite storage of low level radioactive wastes.			Eng		X
11.2 Solid Radwaste				Rx		
11.2.1 Activity	The annual activity, by radionuclide, contained in solid radioactive wastes generated during routine plant operations. Provide in Table 3.			Rx		X
11.2.2 Principal Radionuclides	The principal radionuclides contained in solid radioactive wastes generated during routine plant operations. Provide in Table 3			Rx		X
11.2.3 Volume	The expected volume of solid radioactive wastes generated during routine plant operations.			Rx		X
12. Spent Fuel Storage						
12.1.1 Spent Fuel Pool Capacity	The number of spent fuel assemblies capable of being stoerd in the spent fuel pool.			Eng		

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PPE Section	Definition	Technology Supplier Value	Notes/ Comments	Parameter Type	Applicability	
					SSAR	ER
12.1.2 Fuel Bundles Discharged per Refuel Outage	The number of spent fuel assemblies discharged to the spent fuel pool for a typical refuel outage.			Eng		x
12.1.3 **Fuel Cycle Duration**	The design fuel cycle duration.			Eng		x
12.1.4 Fuel Bundles Discharged During Licensed Operation	The total number of spent fuel assemblies discharged during the 40 year operating license life of the plant.			Eng		x
13. Auxiliary Boiler System				Eng		
13.1 Exhaust Elevation	The height above finished plant grade at which the flue gas effluents are released to the environment.			Eng		X
13.2 Flue Gas Effluents	The expected combustion products and anticipated quantities released to the environment due to operation of the auxiliary boilers. Provide in Table 4.			Eng		X
13.3 Fuel Type	The type of fuel oil required for proper operation of the auxiliary boilers. Provide in Table 4.			Eng		X
13.4 Heat Input Rate (BTU/hr)	The average heat input rate due to the periodic operation of the auxiliary boilers (fuel consumption rate).			Eng		
14. Standby Power System				Rx		
14.1 Diesel				Rx		
14.1.1 Diesel Capacity	The total generating capacity of diesel generating system.			Rx		
14.1.2 Diesel Exhaust Elevation	The elevation above finished grade of the release point for standby diesel exhaust releases.			Rx		X
14.1.3 Diesel Flue Gas Effluents	The expected combustion products and anticipated quantities released to the environment due to operation of the emergency standby diesel generators. Provide in Table 5.			Eng		X
14.1.4 Diesel Noise	The maximum expected sound level produced by operation of diesel generators, measured at 1000 feet from the noise source.			Eng		
14.1.5 Diesel Fuel Type	The type of diesel fuel oil required for proper operation of the diesel generator.			Eng		X
14.2 Gas Turbine				Rx		
14.2.1 Gas Turbine Capacity (kw)	The total generating capacity of the gas turbine generating system.			Rx		
14.2.2 Gas-Turbine Exhaust Elevation	The elevation above finished grade of the release point for standby gas turbine exhaust releases.			Rx		X
14.2.3 Gas-Turbine Flue Gas Effluents	The expected combustion products and anticipated quantities released to the environment due to operation of the emergency standby gas-turbine generators. Provide in Table 6.			Eng		X
14.2.4 Gas-Turbine Noise	The maximum expected sound level produced by operation of gas turbines, measured at 1000 feet from the noise source.			Eng		
14.2.5 Gas-Turbine Fuel Type	The type of fuel oil required for proper operation of the gas turbines.			Eng		X
15. Plant Layout Considerations				Eng		
15.1 Access Routes				Eng		
15.1.1 Heavy Haul Routes	The land usage required for permanent heavy haul routes to support normal operations and refueling.			Eng		X
15.1.2 Spent Fuel Cask Weight	The weight of the heaviest expected shipment during normal plant operations and refueling.			Eng		
15.2 Acreage to Support Plant Operations	The land area required to provide space for plant facilities.			Eng		
15.2.1 Office Facilities	The land area required to provide space for office facilities. Provide list of structures and associated acreage of each.			Eng		X

NEI Plant Parameters Envelope Worksheet
Technology Supplier Input

PPE Section	Definition	Technology Supplier Value	Notes/ Comments	Parameter Type	Applicability	
					SSAR	ER
15.2.2 Parking Lots	The land area required to provide space for parking lots. Provide associated acreage of each.			Eng		X
15.2.3 Permanent Support Facilities	The land area required to provide space for permanent support facilities. Provide list of structures and associated acreage of each.			Eng		X
15.2.4 Power Block	The land area required to provide space for Power Block facilities. Provide list of structures and associated acreage of each. Power Block is defined as all structures, systems and components which perform a direct function in the production of, transport of, or storage of heat energy, electrical energy or radioactive wastes. Also included are structures, systems, and components that monitor, control, or protect the public health and safety.			Eng		X
15.2.5 Protected Areas	The land area required to provide space for Protected Area facilities. Provide list of structures and associated acreage of each.			Eng		
15.2.6 Switchyard	The land usage required for the high voltage switchyard used to connect the plant to the transmission grid.			Eng		X
15.2.7 Other Areas	The land area required to provide space for plant facilities not provided in Parameters 17.2.1 - 17.2.5. Provide list of structures and associated acreage of each.			Eng		X
16. Plant Operations Considerations						
16.1 Megawatts Thermal	The thermal power generated by one unit (may be the total of several modules). Specify both core thermal power and RCP thermal power.			Rx	X	X
16.2 Plant Design Life	The operational life for which the plant is designed.			Rx		X
16.3 Plant Population				Eng		
16.3.1 Operation	The estimated number of total permanent staff to support operations of the plant.			Eng		X
16.3.2 Refueling / Major Maintenance	The estimated additional number of temporary staff required to conduct refueling and major maintenance activities.			Eng		X
16.4 Station Capacity Factor	The percentage of time that a plant is capable of providing power to the grid.			Eng		X
16.5 Plant Operating Cycle	The normal plant operating cycle length.			Eng		X
16.6 Megawatts Electrical (at 100% power with 85F circulating water)	Best estimate of MWe generator output.			Eng		X
17. Construction				Eng		
17.1 Access Routes				Eng		
17.1.1 Construction Module Dimensions	The maximum expected length, width, and height of the largest construction modules or components and delivery vehicles to be transported to the site during construction.			Eng		
17.1.2 Heaviest Construction Shipment	The maximum expected weight of the heaviest construction shipment to the site.			Eng		
17.2 Acreage				Eng		
17.2.1 Laydown Areas	The land area required to provide space for construction support facilities. Provide a list of what buildings and/or areas and the associated acreage for each.			Eng		X
17.2.2 Temporary Construction Facilities	The land area required to provide space for temporary construction support facilities. Provide a list of what buildings and/or areas and the associated acreage for each.			Eng		X
17.2.3 Construction Parking Lot	The land area required to provide space for parking lots.			Eng		x
17.3 Construction				Eng		
17.3.1 Noise	The maximum expected sound level due to construction activities, measured at 50 feet from the noise source.			Eng		X
17.4 Plant Population				Eng		

NEI Plant Parameters Envelope Worksheet
Technology Supplier Input

PPE Section	Definition	Technology Supplier Value	Notes/ Comments	Parameter Type	Applicability	
					SSAR	ER
17.4.1 Construction	Maximum number of people on-site during construction.			Eng		X
17.5 Site Preparation Duration	Length of time required to prepare the site for construction			Eng		
18. Miscellaneous Items				Rx		
18.1 Maximum Fuel Enrichment	Concentration of U-235 in the fuel.			Rx		X
18.2 Maximum Average Assembly Burnup	Maximum assembly average burnup at end of assembly life.			Rx		X
18.3 Peak fuel rod exposure at end of life	Peak fuel rod exposure at end of life			Rx		X
18.4 Maximum Average Discharge Batch Burnup	Maximum average discharge batch burnup.			Rx		X
18.5 Maximum Thermal Power	Maximum core thermal power.			Rx		X
18.6 Fuel Reload	Mass of uranium in the reload batch.			Rx		X
18.7 Clad Material	Fuel rod clad material.			Rx		X

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NEI Plant Parameters Envelope Worksheet
Technology Supplier Input

TABLE 2 - BLOWDOWN CONSTITUENTS AND CONCENTRATIONS			
Constituent	**Concentration (ppm)[1]**		
	River Source	Well/ Treated Water	Envelope
Chlorine demand			
Free available chlorine			
Chromium			
Copper			
Iron			
Zinc			
Phosphate			
Sulfate			
Oil and grease			
Total dissolved solids			
Total suspended solids			
BOD, 5-day			
Notes:			
(1) Assumed cycles of concentration equals 4			

TABLE 3 – PRINCIPAL RADIONUCLIDES IN SOLID RADWASTE[1]							
DATA FOR Radionuclide							Composite
	(Ci/yr)	(Ci/yr)	(Ci/yr)	(Ci/yr)	(Ci/yr)	(Ci/yr)	(Ci/yr)
Other							
Total (rounded to nearest hundred)							

Notes: (1) See PPE Section 11.2.2; (2) NA = Not Applicable or negligible ($< 10^{-2}$ Ci); (3)Table 1.4-10, Note 3

NEI Plant Parameters Envelope Worksheet
Technology Supplier Input

TABLE 4 – YEARLY EMISSIONS FROM AUXILIARY BOILERS							
Pollutant Discharged per Unit[1]							**Bounding Value**
	(lbs/yr)	(lbs/yr)	(lbs/yr)	(lbs/yr)	(lbs/yr)	(lbs/yr)	(lbs/yr)
Particulates							
Sulfur oxides							
Carbon monoxide							
Hydrocarbons							
Nitrogen oxides							

Notes:
(1) Emissions are based on 30 days of operation per year

TABLE 5 – YEARLY EMISSIONS FROM STANDBY DIESEL GENERATORS							
							Bounding Value
Number and size of DGs (kW)							
Pollutant Discharged [1]	(lbs/yr)	(lbs/yr)	(lbs/yr)	(lbs/yr)	(lbs/yr)	(lbs/yr)	(lbs/yr)
Particulates							
Sulfur Oxides							
Carbon Monoxide							
Hydrocarbons							
Nitrogen oxides							

Notes:
(1) Emissions are based on 4 hrs/month operation for each of the generators (one unit).
(2) Identify whether further reduction can be achieved with addition of emission control equipment.

TABLE 6 – STANDBY POWER SYSTEM GAS TURBINE FLUE GAS EFFLUENTS						
FUEL: Distillate 20°F Ambient 9,890 BTU/KWH (LHV) 10,480 BTU/KWH (HHV) 96,960 LB/HR	Consumption Rate/Unit		Consumption Rate/Unit		Consumption Rate/Unit	
Effluent	**PPMVD**	**(lbs) [1]**	**PPMVD**	**(lbs) [1]**	**PPMVD**	**(lbs) [1]**
NO_x (PPMVD @ 15% 0_2						
NO_x as NO_2						
CO						
UHC						
VOC						
SO_2						
SO_3						
SULFUR MIST						
PARTICULATES						
Exhaust Analysis	**% Vol**		**% Vol**		**% Vol**	
ARGON						
NITROGEN						
OXYGEN						
CARBON DIOXIDE						

Notes:
(1) Emissions are based on 4 hrs/month operation for each of the generators.

TABLE 7 One Unit Average Annual Normal Gaseous Release			
Radionuclide	Release 1 unit MBq/yr	Radionuclide	Release 1 unit MBq/yr
Kr-83m		Sr-90	
Kr-85m		Y-90	
Kr-85		Sr-91	
Kr-87		Sr-92	
Kr-88		Y-91	
Kr-89		Y-92	
Kr-90		Y-93	
Xe-131m		Zr-95	
Xe-133m		Nb-95	
Xe-133		Mo-99	
Xe-135m		Tc-99m	
Xe-135		Ru-103	
Xe-137		Rh-103m	
Xe-138		Ru-106	
Xe-139		Rh-106	
I-131		Ag-110m	
I-132		Sb-124	
I-133		Te-129m	
I-134		Te-131m	
I-135		Te-132	
H-3		Cs-134	
C-14		Cs-136	
Na-24		Cs-137	
P-32		Cs-138	
Ar-41		Ba-140	
Cr-51		La-140	
Mn-54		Ce-141	
Mn-56		Ce-144	
Fe-55		Pr-144	
Fe-59		W-187	
Co-58		Np-239	
Co-60			
Ni-63			
Cu-64			
Zn-65			
Rb-89			
Sr-89		Total	

TABLE 8 One Unit Accidental Gaseous Release			
Radionuclide	Release 1 unit Ci	Radionuclide	Release 1 unit Ci
Noble Gases		**Noble Metals**	
Kr-85		Co-58	
Kr-85m		Co-60	
Kr-87		Mo-99	
Kr-88		Tc-99m	
Xe-133		Ru-103	
Xe-135		Ru-105	
Iodines		Ru-106	
I-131		Rh-105	
I-132		**Lanthanides**	
I-133		Y-90	
I-134		Y-91	
I-135		Y-92	
Alkali Metals		Y-93	
Rb-86		Zr-95	
Cs-134		Zr-97	
Cs-136		Nb-95	
Cs-137		La-140	
Tellurium Group		La-141	
Sb-127		La-142	
Sb-129		Pr-143	
Te-127		Nd-147	
Te-127m		Am-241	
Te-129		Cm-242	
Te-129m		Cm-244	
Te-131		**Cerium Group**	
Te-132		Ce-141	
Strontium and Barium		Ce-143	
Sr-89		Ce-144	
Sr-90		Np-239	
Sr-91		Pu-238	
Sr-92		Pu-239	
Ba-139		Pu-240	
Ba-140		Pu-241	
		Total	

TABLE 9

One Unit
LOCA Curies Released by Post Accident Interval to the Environment

Time Period Isotope	0 to 2 hour	0 to 8 hour	8 to 24 hour	24 to 96 hour	96 to 720 hours

Table 10 One Unit Average Annual Normal Liquid Radioactive Release			
Radionuclide	**Release MBq/yr**	**Radionuclide**	**Release MBq/yr**
I-131		Sr-92	
I-132		Y-92	
I-133		Y-93	
I-134		Zr-95	
I-135		Nb-95	
H-3		Mo-99	
C-14		Tc-99m	
Na-24		Ru-103	
P-32		Rh-103m	
Cr-51		Ru-106	
Mn-54		Rh-106	
Mn-56		Ag-110m	
Co-56		Sb-124	
Co-57		Te-129m	
Co-58		Te-131m	
Co-60		Te-132	
Fe-55		Cs-134	
Fe-59		Cs-136	
Ni-63		Cs-137	
Cu-64		Cs-138	
Zn-65		Ba-140	
Rb-89		La-140	
Sr-89		Ce-141	
Sr-90		Ce-144	
Y-90		Pr-143	
Sr-91		W-187	
Y-91		Np-239	

Table 11 One Unit Accidental Liquid Radioactive Release			
Radionuclide	**Release MBq**	**Radionuclide**	**Release MBq**
I-131		Sr-92	
I-132		Y-92	
I-133		Y-93	
I-134		Zr-95	
I-135		Nb-95	
H-3		Mo-99	
C-14		Tc-99m	
Na-24		Ru-103	
P-32		Rh-103m	
Cr-51		Ru-106	
Mn-54		Rh-106	
Mn-56		Ag-110m	
Co-56		Sb-124	
Co-57		Te-129m	
Co-58		Te-131m	
Co-60		Te-132	
Fe-55		Cs-134	
Fe-59		Cs-136	
Ni-63		Cs-137	
Cu-64		Cs-138	
Zn-65		Ba-140	
Rb-89		La-140	
Sr-89		Ce-141	
Sr-90		Ce-144	
Y-90		Pr-143	
Sr-91		W-187	
Y-91		Np-239	

TABLE 12 - NOTES	
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