GGNS
EARLY SITE PERMIT APPLICATION
PART 3 – ENVIRONMENTAL REPORT

SERI Exhibit 9

TABLE 3.0-1

PLANT PARAMETERS ENVELOPE (PPE)

PPE Section / Parameter [6]	Composite Value [1]	Comments	Value [2]
1. Structures			
1.1 Building Characteristics			
1.1.2 Foundation Embedment	140 ft.		US
2. Normal Plant Heat Sink			
2.3 Condenser			
2.3.2 Condenser / Heat Exchanger Duty	10.7 E9 Btu/hr		US
2.4 NHS Cooling Towers - Mechanical Draft (or Natural Draft) (See Note 3)			
2.4.3 (2.5.3) Blowdown Constituents and Concentrations	See TABLE 3.0-2		US
2.4.4 (2.5.4) Blowdown Flow Rate	12,800 gpm expected (39,000 gpm max)		TP
2.4.5 (2.5.5) Blowdown Temperature	100°F		US
2.4.6 (2.5.6) Cycles of Concentration	4		US
2.4.7 (2.5.7) Evaporation Rate	35,100 gpm expected (39,000 gpm max)		TP
2.4.8 (2.5.8) Height	60 ft (475 ft / 550 ft)	See Note 5	US
2.4.9 (2.5.9) Makeup Flow Rate	47,900 gpm expected (78,000 gpm max)		TP
2.4.10 (2.5.10) Noise	55 dba @ 1000 ft		US
2.4.12 (2.5.12) Cooling Water Flow Rate	865,000 gpm		US
3. Ultimate Heat Sink			
3.3 Mech Draft Cooling Towers			
3.3.4 Blowdown Flow Rate	288 gpm expected (1700 gpm max)		TP
3.3.5 Blowdown Temperature	95°F		US
3.3.7 Evaporation Rate	822 gpm expected (1700 gpm max)		TP
3.3.9 Makeup Flow Rate	1110 gpm expected (3,400 gpm max)		TP

Template = SECY-028

SECY-02

TABLE 3.0-1 (Continued)

PPE Section / Parameter [6]		Composite Value [1]	Comments	Value [2]
3.3.12	Cooling Water Flow Rate	26,125 gpm (normal) 52,250 gpm (shutdown / accident)		US
5.	Potable Water/Sanitary Waste System			
5.1	Discharge to Site Water Bodies			
5.1.1	Flow Rate	120 gpm expected (210 gpm max)		TP
5.2	Raw Water Requirements			
5.2.1	Maximum Use	240 gpm		TP
5.2.2	Monthly Average Use	180 gpm		TP
6.	Demineralized Water System			
6.1	Discharge to Site Water Bodies			
6.1.1	Flow Rate	220 gpm expected (290 gpm max)		TP
6.2	Raw Water Requirements			
6.2.1	Maximum Use	1440 gpm		TP
6.2.2	Monthly Average Use	1100 gpm		TP
7.	Fire Protection System			
7.1	Raw Water Requirements			
7.1.1	Maximum Use	1890 gpm		TP
7.1.2	Monthly Average Use	(30 gpm)		TP
8.	Miscellaneous Drain			
8.1	Discharge to Site Water Bodies			
8.1.1	Flow Rate	200 gpm expected (300 gpm max)		TP
9.	Unit Vent/Airborne Effluent Release Point			
9.4	Release Point			
9.4.2	Elevation (Normal)	Ground level		US
9.4.3	Elevation (Post Accident)	Ground level		US
9.4.4	Minimum Distance to Site Boundary	0.52 mi (841 m) exclusion area		US
9.5	Source Term			
9.5.1	Airborne Effluents (Normal)	32,699 Ci/yr	See TABLE 3.0-7	US

TABLE 3.0-1 (Continued)

PPE Section / Parameter [6]		Composite Value [1]	Comments	Value [2]
9.5.2	Airborne Effluents (Post-Accident)	Based on limiting DBAs.	See Note 4	US
9.5.3	Tritium Airborne Effluent Normal)	7060 Ci/yr		TP
10.	Liquid Radwaste System			
10.2	Release Point			
10.2.1	Flow Rate	35 gpm		US
10.3	Source Term			
10.3.1	Liquid	0.694 Ci/yr	See TABLE 3.0-8	US
10.3.2	Tritium	6,200 Ci/yr	See TABLE 3.0-8	US
11.	Solid Radwaste System			
11.2.1	Activity	5400 Ci/yr		TP
11.2.2	Principal Radionuclides	See TABLE 3.0-3		US
11.2.3	Volume	18,646 ft^3/yr		TP
13.	Auxiliary Boiler System			
13.2	Flue Gas Effluents	See TABLE 3.0-4		US
16.	Standby Power System			
16.1	Diesels			
16.1.3	Diesel Flue Gas Effluents	See TABLE 3.0-5		US
16.2	Gas Turbines			
16.2.3	Gas-Turbine Flue Gas Effluents	See TABLE 3.0-6		US
17.	Plant Characteristics			
17.3	Megawatts Thermal	4300 MWt	Includes allowance for ~10% uprate from design core power of 3,926 MWt.	US
17.4	Plant Design Life	60 years		US
17.5	Plant Population			
17.5.1	Operation	1160		TP
18.	Construction			
18.3.1	Noise	76-101 db @ 50 ft		US
18.4	Plant Population			
18.4.1	Construction	3150 people max		US

TABLE 3.0-1 (Continued)

NOTES:

1. The "Composite Value" provides an envelope (bounding values) for design parameters for the various plant designs considered for the site. See Site Safety Analysis Report Section 1.3 for a discussion of the basis for parameter values.

2. "Value" pertains to the "Composite Value" for each parameter listed. In this table, a value designated "US" represents a "unit specific" value, meaning that it is applied per unit, or group of units or modules. A designation of "TP" is given to a value that represents total facility requirements. See Site Safety Analysis Report Section 1.3 for a discussion of the basis for parameter values.

3. Several main condenser cooling system alternatives were considered (i.e., mechanical and natural draft cooling towers, cooling ponds, and once-through cooling). The most restrictive value for each cooling system PPE section has been used in this table (e.g., 550 ft cooling tower height selected since both mechanical and natural draft towers were considered).

   • The once through cooling option was eliminated due to significant environmental impact.

   • The cooling pond option was eliminated due to insufficient GGNS site acreage to accommodate pond.

4. In general, source terms for any given accident are those used by the Vendors in their safety analyses. The methodologies used by the Vendors for establishing source terms include those established in TID-14844 and Regulatory Guide 1.183. See SSAR Sections 3.3.2 and 3.3.3 for additional detail on accident selection and source term methods.

5. For the purposes of environmental (aesthetic) impact, a natural draft cooling tower with a height of 550 ft is considered. The cooling tower plume model discussed in Section 5.3.3.1 of the ER was done assuming a natural draft cooling tower height of 475 ft., and a mechanical draft cooling tower height of 60 ft.

6. A definition for each parameter is provided in Table 3.0-9.