TABLE 4.4-1

REACTOR THERMAL AND HYDRAULIC DESIGN PARAMETERS

Reactor Core Heat Output, MWt	3459
Reactor Core Heat Output, BTU/hr	$11,806 \times 10^6$
Heat Generated in Fuel	97.4
System Pressure, Nominal psia	2250
System Pressure, Minimum Steady State psia	2218 (STDP[1] only)
Coolant Flow	
Total Thermal Flow Rate, lb/hr	125.3×10^6
Effective Flow Rate for Heat Transfer, lb/hr	116.3×10^6
Effective Flow Area for Heat Transfer, ft^2	V-5H, V+ 51.3
	RFA[2] 51.1
Average Velocity Along Fuel Rods, ft/sec	V-5H, V+ 14.1
	RFA 14.2
Average Mass Velocity, lb/hr-ft^2	V-5H,V+ 2.27×10^6
	RFA 2.28×10^6
Coolant Temperature	
Nominal Inlet, deg-F	542.7
Average Rise in Vessel, deg-F	70.4
Average Rise in core, deg-F	75.2

TABLE 4.4-1 (Cont.)

Average in Core, deg-F	582.4
Average in Vessel, deg-F	577.9
Heat Transfer	
Active Heat Transfer Surface Area, ft^2	59,700
Average Heat Flux, BTU/hr-ft^2	192,470
Maximum Heat Flux,	
For normal operation, BTU/hr-ft^2	461,930(4)
Average Thermal Output, kW/ft	5.52
Maximum Thermal Output,	
For normal operation, kW/ft	13.3(4)
Peak Linear Power for determination	
of protection setpoints, kW/ft	$\leq$ 22.4(5)
Peak at Thermal Output Maximum	
for maximum Overpower Trip, deg-F	<4700
Pressure Drop Across Core, psi	Full core V-5H, V+ 22.2(6)
	Full core RFA with DFBN 24.7(6)
	Full core RFA with SDFBN 24.5(9)
Minimum DNBR at Normal Conditions	
Typical Flow Channel	V-5H,V+ 2.44
	RFA 2.64
Thimble (Cold Wall) Flow Channel	V-5H,V+ 2.32
	RFA 2.62

TABLE 4.4-1 (Cont.)

DNBR Correlation[7]	V-5H,V+ WRB-1 RFA WRB-2
DNBR Correlation Limit[7]	WRB-1 1.17 WRB-2 1.17
DNBR Design Limit[8]	WRB-1 1.24(RTDP[3],Typical) WRB-1 1.24(RTDP, Thimble) WRB-2 1.24(RTDP, Typical) WRB-2 1.22(RTDP, Thimble)

Notes:

1) Standard Thermal Design Procedure
2) All Parameters for RFA include Intermediate Flow Mixing (IFM) grids
3) Revised Thermal Design Procedure
4) Associated with F_Q limit of 2.40
5) See Section 4.3.2.2.6
6) Based on a best estimate reactor flow rate of 93,300 gpm/loop
7) See Section 4.4.2.3.1
8) See Section 4.4.1.1
9) Based on a best estimate reactor flow rate of 94,800 gpm/loop and a Tavg of 566.0 F.

TABLE 4.4-2

THERMAL-HYDRAULIC DESIGN PARAMETERS FOR
ONE OF FOUR COOLANT LOOPS OUT OF SERVICE

(This Table has been deleted)

TABLE 4.4-3

VOID FRACTIONS AT NOMINAL REACTOR CONDITIONS
WITH DESIGN HOT CHANNEL FACTORS

	Average	Maximum
Core	0.24%	--
Hot Subchannel	5.8%	20.1%

TABLE 4.4-4

COMPARISON OF THINC-IV AND THINC-I PREDICTIONS WITH DATA
FROM REPRESENTATIVE WESTINGHOUSE TWO AND THREE LOOP REACTORS

Reactor	Power (MWt)	% Full Power	Measured Inlet Temp (°F)	σ_{rms} (°F) THINC-I	σ (°F) THINC-IV	Improvement (°F) for THINC-IV over THINC-I
Ginna	847	65.1	543.7	1.97	1.83	0.14
	854	65.7	544.9	1.56	1.46	0.10
	857	65.9	543.9	1.97	1.82	0.15
	947	72.9	543.8	1.92	1.74	0.18
	961	74.0	543.7	1.97	1.79	0.18
	1091	83.9	542.5	1.73	1.54	0.19
	1268	97.5	542.0	2.35	2.11	0.24
	1284	98.8	240.2	2.69	2.47	0.22
	1284	98.9	541.0	2.42	2.17	0.25
	1287	99.0	544.4	2.26	1.97	0.29
	1294	99.5	540.8	2.20	1.91	0.29
	1295	99.6	542.0	2.10	1.83	0.27
Robinson	1427.0	65.1	548.0	1.85	1.88	0.03
	1422.6	64.9	549.4	1.39	1.39	0.00
	1529.0	88.0	550.0	2.35	2.34	0.01
	2207.3	100.7	534.0	2.41	2.41	0.00
	2213.9	101.0	533.8	2.52	2.44	0.08