

BFN-17

TABLE 1.7-1

(Sheet 1)

COMPARISON OF NUCLEAR SYSTEM DESIGN CHARACTERISTICS
 (Data in this table has not been updated to reflect the power uprate at Browns Ferry)

(Parameters are related to Rated Power Output for a single plant unless otherwise noted)

<u>THERMAL AND HYDRAULIC DESIGN</u>	<u>BROWNS FERRY UNITS 1/2/3</u>	<u>HATCH UNIT 1</u>	<u>VERMONT YANKEE</u>	<u>COOPER STATION</u>	<u>DUANE ARNOLD ENERGY CENTER</u>
Rated Power, MWt	3293	2436	1593	2381	1593
Design Power, MWt	3440	2537	1665	2500	1670
Steam Flow Rate, lb/hr	13.37 x 10 ⁶	10.03 x 10 ⁶	6.43 x 10 ⁶	9.81 x 10 ⁶	6.847 x 10 ⁶
Core Coolant Flow Rate, lb/hr	102.5 x 10 ⁶	75.5 x 10 ⁶	48.5 x 10 ⁶	74.5 x 10 ⁶	48.5 x 10 ⁶
Feedwater Flow Rate, lb/hr	13.315 x 10 ⁶	10.445 x 10 ⁶	6.43 x 10 ⁶	9.81 x 10 ⁶	6.77 x 10 ⁶
Feedwater Temperature, °F	378.4	387.4	372	367	420
System Pressure, Nominal in Steam Dome, psia	1020	1020	1020	1020	1020
Average Power Density, kW/liter	49.69/49.46/ 49.2	51.2	50.8	51.2	50.9
Maximum Thermal Output, kW/ft	18.5 (7x7)/13.4 (8x8)	18.3	18.37	18.5	18.5
Average Thermal Output, kW/ft	7.050 (7x7)/ 5.59 (8x8)	7.114	7.1	7.079	7.079
Average Heat Flux, Btu/hr-ft ²	148937/142007/ 143635	164,734	163,900	164,500	163,933
Maximum UO ₂ Temperature, °F	4430	4430	4430	4430	4430
Average Volumetric Fuel Temperature, °F	1210	1210	1210	1210	1210
Average Fuel Rod Surface Temperature, °F	560	560	560	560	560
Minimum Critical Power Ratio (MCPR) ⁽¹⁾	>1.07	>1.9	>1.9	>1.9	>1.9
Coolant Enthalpy at Core Inlet, Btu/lb	521.3	526.2	522.9	520.1	525.6
Core Maximum Exit Voids Within Assemblies	79	79	79	79	79
Core Average Exit Quality, % Steam	13.2	13.9	13.6	13.2	14.3

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(Sheet 2)

COMPARISON OF NUCLEAR SYSTEM DESIGN CHARACTERISTICS
 (Data in this table has not been updated to reflect the power uprate at Browns Ferry)

(Parameters are related to Rated Power Output for a single plant unless otherwise noted)

<u>THERMAL AND HYDRAULIC DESIGN (Cont-d)</u>	<u>BROWNS FERRY UNITS 1/2/3</u>	<u>HATCH UNIT 1</u>	<u>VERMONT YANKEE</u>	<u>COOPER STATION</u>	<u>DUANE ARNOLD ENERGY CENTER</u>
<u>Design Power Peaking Factors</u>					
Transverse Peaking Factor	1.4	1.4	1.4	1.4	1.405
Local Peaking Factor	≤ 1.24	1.24	1.24	1.24	1.24
Axial Peaking Factor	1.5	1.5	1.5	1.5	1.5
Total Peaking Factor	≤ 2.63	2.6	2.6	2.6	2.6
<u>NUCLEAR DESIGN (First Core)</u>					
Water/UO ₂ Volume Ratio (Cold)	2.43 Type I 2.53 Type II & III	2.41	2.41	2.41	2.41
Reactivity with Strongest Control Rod Out, k _{eff}	<0.99	<0.99	<0.99	<0.99	<0.99
Moderator Temperature Coefficient					
At 68°F, Δk/k - °F Water	-3.5 x 10 ⁻⁵	-3.5 x 10 ⁻⁵	-5.0 x 10 ⁻⁵	-3.5 x 10 ⁻⁵	-3.5 x 10 ⁻⁵
Hot, no voids, Δk/k - °F Water	-11.6 x 10 ⁻⁵	-11.6 x 10 ⁻⁵	-17.0 x 10 ⁻⁵	-11.6 x 10 ⁻⁵	-11.6 x 10 ⁻⁵
Moderator Void Coefficient					
Hot, no voids, Δk/k - % Void	-8.7 x 10 ⁻⁴	-8.7 x 10 ⁻⁴	-1.0 x 10 ⁻³	-8.7 x 10 ⁻⁴	-8.7 x 10 ⁻⁴
At Rated Output, Δk/k - % Void	-1.05 x 10 ⁻³	-1.05 x 10 ⁻³	-1.5 x 10 ⁻³	-1.05 x 10 ⁻³	-1.05 x 10 ⁻³
Fuel Temperature Doppler Coefficient					
At 68°F, Δk/k - °F Fuel	-0.9 x 10 ⁻⁵	-1.3 x 10 ⁻⁵	-1.3 x 10 ⁻⁵	-1.3 x 10 ⁻⁵	-1.3 x 10 ⁻⁵
Hot, No Void, Δk/k - °F Fuel	-1.0 x 10 ⁻⁵	-1.2 x 10 ⁻⁵	-1.2 x 10 ⁻⁵	-1.2 x 10 ⁻⁵	-1.2 x 10 ⁻⁵
At Rated Output, Δk/k - °F Fuel	-0.9 x 10 ⁻⁵	-1.3 x 10 ⁻⁵	-1.3 x 10 ⁻⁵	-1.3 x 10 ⁻⁵	-1.3 x 10 ⁻⁵
Initial Average U-235 Enrichment, W/O	2.19%	2.30%	2.50%	2.15%	2.25%
Fuel Average Discharge Exposure, MWD/Ton	19,000	19,000	19,000	19,000	18,350
Nuclear Design (Reload Core)	See applicable Nuclear Design Reports. ⁽⁶⁾				

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(Sheet 3)

COMPARISON OF NUCLEAR SYSTEM DESIGN CHARACTERISTICS
 (Data in this table has not been updated to reflect the power uprate at Browns Ferry)

(Parameters are related to Rated Power Output for a single plant unless otherwise noted)

<u>CORE MECHANICAL DESIGN</u>	<u>BROWNS FERRY UNITS 1/2/3</u>	<u>HATCH UNIT 1</u>	<u>VERMONT YANKEE</u>	<u>COOPER STATION</u>	<u>DUANE ARNOLD ENERGY CENTER</u>
<u>Fuel Assembly</u>					
Number of Fuel Assemblies	764	560	368	548	368
Fuel Rod Array	7 x 7 or 8 x 8	7 x 7	7 x 7	7 x 7	7 x 7
Overall Dimensions, inches	175.98	175.98	175.98	175.98	175.98
Weight of UO ₂ per Assembly, pounds	See applicable Nuclear Design (6) Reports	Undished - 490.35 Dished - 483.42	Undished - 487.4	487.4	Undished - 490.35 Dished - 483.42
Weight of Fuel Assembly, pounds	681	Undished - 681.48 Dished - 674.55	Undished - 682	682	Undished - 681.48 Dished - 674.55
<u>Fuel Rods</u>					
Number per Fuel Assembly	49 or 64* (mixed cores) 1.483	49	49	49	49
Outside Diameter, inch	0.563	0.563	0.563	0.563	0.563
Clad Thickness, inch	0.032	0.032	0.032	0.032	0.032
Gap - Pellet to Clad, inch	0.006/0.009	0.006	0.006	0.006	0.006
Length of Gas Plenum, inches	16/9.48	16	16	16	16
Clad Material	Zircaloy-2	Zircaloy-2	Zircaloy-2	Zircaloy-2	Zircaloy-2
Cladding Process	Free standing loaded tubes	Free standing loaded tubes	Free Standing loaded tubes	Free Standing loaded tubes	Free Standing loaded tubes

*Two different 8 x 8 fuel bundle arrangements are used. One uses 63 fuel rods and 1 water rod; the other uses 62 fuel rods and 2 water rods.

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(Sheet 4)

COMPARISON OF NUCLEAR SYSTEM DESIGN CHARACTERISTICS
(Data in this table has not been updated to reflect the power uprate at Browns Ferry)

(Parameters are related to Rated Power Output for a single plant unless otherwise noted)

<u>CORE MECHANICAL DESIGN (Cont'd)</u>	<u>BROWNS FERRY UNITS 1/2/3</u>	<u>HATCH UNIT 1</u>	<u>VERMONT YANKEE</u>	<u>COOPER STATION</u>	<u>DUANE ARNOLD ENERGY CENTER</u>
<u>Fuel Pellets</u>					
Material	Uranium Dioxide	Uranium Dioxide	Uranium Dioxide	Uranium Dioxide	Uranium Dioxide
Density, % of theoretical	94%	93%	93%	93%	93%
Diameter, inch	0.410	0.487	0.487	0.487	0.487
Length, inch	0.410	0.75	0.75	0.75	0.75
<u>Fuel Channel</u>					
Overall Dimension, inches (length)	166.906	166.906	166.906	166.096	166.906
Thickness, inch	0.080	0.080	0.080	0.080	0.080
Cross-Section Dimensions, inches	5.438 x 5.438	5.438 x 5.438	5.438 x 5.438	5.438 x 5.438	5.438 x 5.438
Material	Zircaloy-4	Zircaloy-4	Zircaloy-4	Zircaloy-4	Zircaloy-4
<u>Core Assembly</u>					
Fuel Weight as UO ₂ , pounds	361,837	272,849	179,370	267,095	179,298
Zirconium Weight, pounds (Zr.2 + Zr.4 Spacers)	140,397	96,370	63,300	94,305	63,300
Core Diameter (equivalent), inches	187.1	160.2	129.9	158.5	129.9
Core Height (Active Fuel), inches	144 - 150	144	144	144	144
<u>Reactor Control System</u>					
Method of Variation of Reactor Power	Movable Control Rods and Variable Coolant Pumping	Movable Control Rods and Variable Coolant Pumping	Movable Control Rods and Variable Coolant Pumping	Movable Control Rods and Variable Coolant Pumping	Movable Control Rods and Variable Coolant Pumping
Number of Movable Control Rods	185	137	89	137	89
Shape of Movable Control Rods	Cruciform	Cruciform	Cruciform	Cruciform	Cruciform
Pitch of Movable Control Rods	12.0	12.0	12.0	12.0	12.0

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(Sheet 5)

COMPARISON OF NUCLEAR SYSTEM DESIGN CHARACTERISTICS
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(Parameters are related to Rated Power Output for a single plant unless otherwise noted)

<u>CORE MECHANICAL DESIGN</u> (Cont'd)	<u>BROWNS FERRY</u> <u>UNITS 1/2/3</u>	<u>HATCH UNIT 1</u>	<u>VERMONT</u> <u>YANKEE</u>	<u>COOPER</u> <u>STATION</u>	<u>DUANE ARNOLD</u> <u>ENERGY CENTER</u>
<u>Reactor Control System</u> (Cont'd)					
Control Material in Movable Rods	B ₄ C granules Compacted in SS Tubes	B ₄ C granules Compacted in SS Tubes	B ₄ C granules Compacted in SS Tubes	B ₄ C granules Compacted in SS Tubes	B ₄ C granules Compacted in SS Tubes
Type of Control Rod Drives	Bottom Entry, Locking Piston	Bottom Entry, Locking Piston	Bottom Entry, Locking Piston	Bottom Entry, Locking Piston	Bottom Entry, Locking Piston
Supplementary Reactivity Control	Grandolinia Burnable Poison		156 Flat, boron- stainless steel control curtains		
<u>In-Core Neutron Instrumentation</u>					
Number of In-Core Neutron Detectors (Fixed)	172	124	80	124	80
Number of In-Core Detector Assemblies	43	31	20	31	20
Number of Detectors Per Assembly	4	4	4	4	4
Number of Flux Mapping Neutron Detectors	5	4	3	4	3
Range (and Number) of Detectors					
Source Range Monitor	Source to 0.001% power (4)	Source to 0.001% power (4)	Source to 0.001% power (4)	Source to 0.001% power (4)	Source to 0.001% power (4)
Intermediate Range Monitor	0.0001% to 10% power (8)	0.0001% to 10% power (8)	0.0001% to 10% power (8)	0.0001% to 10% power (8)	0.0001% to 10% power (8)
Local Power Range Monitor	5% to 125% power (172)	5% to 125% power (124)	5% to 125% power (80)	5% to 125% power (124)	5% to 125% power (80)
Average Power Range Monitor	2.5% to 125% power (U1-6; U2-4; U3-6)	2.5% to 125% power (6)	2.5% to 125% power (6)	2.5% to 125% power (6)	2.5% to 125% power (6)

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(Sheet 6)

COMPARISON OF NUCLEAR SYSTEM DESIGN CHARACTERISTICS
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(Parameters are related to Rated Power Output for a single plant unless otherwise noted)

<u>REACTOR VESSEL DESIGN</u>	<u>BROWNS FERRY UNITS 1/2/3</u>	<u>HATCH UNIT 1</u>	<u>VERMONT YANKEE</u>	<u>COOPER STATION</u>	<u>DUANE ARNOLD ENERGY CENTER</u>
Material		Carbon Steel/Clad Stainless Steel (ASME SA-336 & SA-302B)			
Design pressure, psia	1265	1265	1265	1265	1265
Design Temperature, °F	575	575	575	575	575
Inside Diameter ft-in.	20 - 11	18 - 2	17 - 2	18 - 2	15 - 3
Inside Height, ft-in.	73 - 11-1/2	69 - 4	63 - 1.5	69 - 4	66 - 4
Side Thickness (including clad)	6.313	5.531	5.187	5.531	5.625
Minimum Clad Thickness, inches	1/8	1/8	1/8	1/8	1/8
<u>REACTOR COOLANT RECIRCULATION DESIGN</u>					
Number of Recirculation Loops	2	2	2	2	2
Design Pressure					
Inlet Leg, psig	1148	1148	1175	1148	1148
Outlet Leg, psig	1326	1274	1274	1274	1268
<u>CORE MECHANICAL DESIGN</u>					
Design Temperature, °F	562	562	562	562	562
Pipe Diameter Max. inches	28	28	28	28	22
Pipe Material	304/316	304/316	304/316	304/316	304/316
Recirculation Pump flow Rate, GPM	45,200	45,200	32,500	45,200	27,100
Number of Jet Pumps in Reactor	20	20	20	20	16
<u>MAIN STEAM LINES</u>					
Number of Steam Lines	4	4	4	4	4
Design Pressure, psig	1146	1146	1146	1146	1146
Design Temperature, °F	563	563	563	563	563
Pipe Diameter, inches	26	24	20	24	20
Pipe Material		Carbon Steel (ASTM A155 KC70 or ASTM A106 Grade B)			

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(Sheet 7)

COMPARISON OF NUCLEAR SYSTEM DESIGN CHARACTERISTICS
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<u>CORE STANDBY COOLING SYSTEMS</u>	<u>BROWNS FERRY UNITS 1/2/3</u>	<u>HATCH UNIT 1</u>	<u>VERMONT YANKEE</u>	<u>COOPER STATION</u>	<u>DUANE ARNOLD ENERGY CENTER</u>
(These systems are sized on design power)					
<u>Core Spray System</u>					
Number of Loops	2	2	2	2	2
Flow Rate (gpm)	6250 at 105 psid	4625 at 120 psid	3000 at 136 psid	4500 at 115 psid	3020 at 127 psid
<u>High Pressure Coolant Injection system (No.)</u>					
Number of Loops	1	1	1	1	1
Flow Rate (gpm)	5000	4250	4250	4220	2980
Automatic Depressurization system (No.)	1	1	1	1	1
<u>Low Pressure Coolant Injection (No.)</u>					
Number of Pumps	4	4	4	4	4
Flow Rate (gpm/pump)	10,800 gpm (1 pump per loop) 20,000 gpm (2 pumps per loop)	7700 at 20 psid	4800 at 20 psid	7000 at 20 psid	4800 at 20 psid
<u>AUXILIARY SYSTEMS</u>					
<u>Residual Heat Removal System</u>					
Reactor Shutdown Cooling (number of pumps)	4	4	4	4	4
Flow Rate (gpm/pump) ⁽²⁾	10,000	7,700	7,000	7,700	4,800
Capacity (Btu/hr/heat exchanger) ⁽³⁾	70 x 106	32 x 106	57.5 x 106	70 x 106	35 x 106
Number of heat exchangers	4	2	2	2	2
Primary Containment Cooling					
Flow rate (gpm) ⁽⁴⁾	32,000	30,800	28,000	30,800	19,200

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(Sheet 8)

COMPARISON OF NUCLEAR SYSTEM DESIGN CHARACTERISTICS
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<u>AUXILIARY SYSTEMS</u> (Cont'd)	<u>BROWNS FERRY UNITS 1/2/3</u>	<u>HATCH UNIT 1</u>	<u>VERMONT YANKEE</u>	<u>COOPER STATION</u>	<u>DUANE ARNOLD ENERGY CENTER</u>
<u>RHR Service Water System</u>					
Flow Rate (gpm/pump)	4,500	8,000	2,700	8,000	2,500
Number of pumps	12 ⁽⁵⁾	4	4	4	4
<u>Reactor Core Isolation Cooling System</u>					
Flow Rate (gpm)	616 at 1120 psid	400 at 1120 psid	400	416 at 1120 psid	416
<u>Fuel Pool Cooling and Cleanup system</u>					
Capacity (BTU/hr)	8.8×10^6	3.3×10^6	2.37×10^6	3.4×10^6	2.37×10^6

- (1) The operating MCPR limits are subject to change from one cycle to the next and also from one part of the current cycle to the next. The appropriate value for MCPR may be obtained by consulting the applicable current Reload Licensing Amendment.
- (2) Capacity during reactor flooding mode with three of four pumps running.
- (3) Capacity during post-accident cooling mode with 165°F shell side inlet temperature, maximum service water temperature, and 1 RHR pump and 1 RHR service water pump in operation.
- (4) The existing design requires 16,000 gpm (2 pumps, 1 loop) to ensure torus water temperature is maintained within acceptable limits for following all postulated events.
- (5) For all three units.
- (6) See Appendix N

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TABLE 1.7-2

COMPARISON OF POWER CONVERSION SYSTEMS DESIGN CHARACTERISTICS

(Data in this table has not been updated to reflect the power uprate at Browns Ferry)

<u>TURBINE GENERATOR</u>	<u>Browns Ferry Each Unit</u>	<u>Hatch Unit 1</u>	<u>Vermont Yankee</u>	<u>Cooper Station</u>	<u>Duane Arnold Energy Center</u>
Design Power, MWt	3440	2537	1665	2487	1670
Design Power, MWe	1152	849	564	836	597
Generator Speed, rpm	1800	1800	1800	1800	1800
Design Steam Flow, lb/hr	14.035×10^6	10.48×10^6	6.423×10^6	10.049×10^6	6.696×10^6
Turbine Inlet Pressure, psia	965	970	950	970	950
<u>TURBINE BYPASS SYSTEM</u>					
Capacity, percent of turbine design steam flow	25	25	100	25	25
<u>MAIN CONDENSER</u>					
Heat removal capacity, Btu/hr	$7,770 \times 10^6$	$5,800 \times 10^6$	$3,500 \times 10^6$	$5,367 \times 10^6$	$3,681 \times 10^6$
<u>CIRCULATING WATER SYSTEM</u>					
Number of Pumps	3	3	3	4	2 or more
Flow Rate gpm/pump	220,000	185,000	117,000	162,500	130,000 or less
<u>CONDENSATE AND FEEDWATER SYSTEMS</u>					
Design Flow Rate, lb/hr	13.845×10^6	10.096×10^6	6.4×10^6	9.773×10^6	7.146×10^6
Number Condensate Pumps	3	3	2	3	2
Number Condensate Booster Pumps	3	-	---		
Number Feedwater Pumps	3	2	2	2	2
Condensate Pump Drive	AC power	AC power	AC power	AC power	AC power
Condensate Booster Pump Drive	AC power	-	-	-	-
Feedwater Pump Drive	Turbine	Turbine	AC power	Turbine	AC power

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TABLE 1.7-3

COMPARISON OF ELECTRICAL POWER SYSTEM DESIGN CHARACTERISTICS

(Data in this table has not been updated to reflect the power uprate at Browns Ferry)

<u>TRANSMISSION SYSTEM</u>	<u>BROWNS FERRY NUCLEAR PLANT</u>	<u>HATCH UNIT 1</u>	<u>VERMONT YANKEE</u>	<u>COOPER STATION</u>	<u>DUANE ARNOLD ENERGY CENTER</u>
Outgoing lines (number-rating)	7-500kV	2-230kV	2-345kV	4-345kV	2-345kV
<u>NORMAL AUXILIARY AC POWER</u>					
Incoming lines (number-rating)	2-161kV	2-230kV	2-345kV 1-230kV 1-115kV 1-4160kV	1-115kV 1-69kV	2-345kV 3-161kV
Auxiliary transformers	3	1	1	1	2
Startup transformers	2	2	1	2	1
<u>STANDBY AC POWER SUPPLY</u>					
Number diesel generators	8	3	2	4	2
Number of 4160V Shutdown buses	8	3	2	2	2
Number of 480V Shutdown buses	6	4-660V	3	3	3
<u>DC POWER SUPPLY</u>					
Number of 125V or 250V batteries*	6	2	2	2	2
Number of 125V or 250V buses*	6	4	4	4	2

*3 of the 6 250V systems are qualified

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TABLE 1.7-4

Sheet 1

COMPARISON OF CONTAINMENT DESIGN CHARACTERISTICS
 (Data in this table has not been updated to reflect the power uprate at Browns Ferry)

<u>PRIMARY CONTAINMENT*</u>	<u>BROWNS FERRY EACH UNIT</u>	<u>HATCH UNIT 1</u>	<u>VERMONT YANKEE</u>	<u>COOPER STATION</u>	<u>Duane Arnold Energy Center</u>
Type	Pressure Suppression	Pressure Suppression	Pressure Suppression	Pressure Suppression	Pressure Suppression
Construction Drywell	Light bulb shape; steel vessel	Light bulb shape; steel vessel	Light bulb shape; steel vessel	Light bulb shape; steel vessel	Light bulb shape; steel vessel
Pressure Suppression Chamber	Torus; steel vessel	Torus; steel vessel	Torus; steel vessel	Torus; steel vessel	Torus; steel vessel
Pressure Suppression Chamber Internal Design Pressure (psig)	56	56	56	56	56
Pressure Suppression chamber - External Design Pressure (psig)	2	2	2	2	2
Drywell-Internal Design Pressure (psig)	56	56	56	56	56
Drywell-External Design Pressure (psig)	2	2	2	2	2
Drywell Free Volume (ft ³)	159,000	146,400	134,000	145,430	130,930
Pressure Suppression chamber Free Volume (ft ³), minimum	119,000	101,410	99,000	109,810	94,630
Pressure Suppression Pool Water Volume (ft ³), maximum	128,700	86,660	78,000	87,660	61,500
Submergence of Vent Pipe Below Pressure Pool Surface (ft), nominal	4	4	4	4	4
Design Temperature of Drywell (°F)	281	281	281	281	281
Design Temperature of Pressure Suppression Chamber (°F)	281	281	281	281	281

* Where applicable, containment parameters are based on design power.

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TABLE 1.7-4 (Cont'd)

Sheet 2

COMPARISON OF CONTAINMENT DESIGN CHARACTERISTICS
 (Data in this table has not been updated to reflect the power uprate at Browns Ferry)

<u>PRIMARY CONTAINMENT*</u>	<u>BROWNS FERRY EACH UNIT</u>	<u>HATCH UNIT 1</u>	<u>VERMONT YANKEE</u>	<u>COOPER STATION</u>	<u>DUANE ARNOLD ENERGY CENTER</u>
Downcomer Vent Pressure Loss Factor	4.1	6.21	6.21	6.21	6.21
Break Area/total Vent Area	0.017	0.019	0.019	0.019	0.019
Calculated Maximum Pressure After Blow-down Drywell (psig)	49.6	45	35	46	45
Pressure Suppression chamber (psig)	27	28	22	28	29
Initial Pressure Suppression Pool Temperature Rise (°F)	40	50	35	50	50
Leakage Rate (% Free Volume/Day at 56 psig and 281°F)	0.5	0.5	0.5	0.5	0.5
<u>SECONDARY CONTAINMENT</u>					
Type	Controlled Leakage, Elevated Release	Controlled Leakage, Elevated Release	Controlled Leakage, Elevated Release	Controlled Leakage, Elevated Release	Controlled Leakage, Elevated Release
Construction	Reinforced Concrete	Reinforced Concrete	Reinforced Concrete	Reinforced Concrete	Reinforced Concrete
Upper Levels	Steel Super-structure and Siding	Steel Super-structure and Siding	Steel Super-structure and Siding	Steel Super-structure and Siding	Steel Super-structure and Siding
Roof	Steel Decking with Builtup Composition Roof	Steel Sheeting	Steel Sheeting	Steel Sheeting	Steel Sheeting
Internal Design Pressure (psig)	+7 to -5 in. H ₂ O	0.25	0.25	0.25	0.25
Design Inleakage Rate (% Free Volume/Day at 0.25 inches H ₂ O)	100	100	100	100	100

* Where applicable, containment parameters are based on design power.

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TABLE 1.7-4 (Cont'd)

Sheet 3

COMPARISON OF CONTAINMENT DESIGN CHARACTERISTICS
 (Data in this table has not been updated to reflect the power uprate at Browns Ferry)

<u>SECONDARY CONTAINMENT*</u>	<u>BROWNS FERRY EACH UNIT</u>	<u>HATCH UNIT 1</u>	<u>VERMONT YANKEE</u>	<u>COOPER STATION</u>	<u>Duane Arnold Energy Center</u>
<u>ELEVATED RELEASE POINT</u>					
Type	Stack	Stack	Stack	Stack	Stack
Construction	Reinforced Concrete	Steel	Steel	Steel	Steel
Height (above ground)	600 feet	150 meters	318 feet	100 meters	100 meters

*Where applicable, containment parameters are based on design power.

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TABLE 1.7-5

COMPARISON OF CONTAINMENT DESIGN CHARACTERISTICS
 (Data in this table has not been updated to reflect the power uprate at Browns Ferry)

<u>SEISMIC DESIGN</u>	<u>BROWNS FERRY NUCLEAR PLANT</u>	<u>HATCH UNIT 1</u>	<u>VERMONT YANKEE</u>	<u>COOPER STATION</u>	<u>DUANE ARNOLD ENERGY CENTER</u>
Operating Basis Earthquake (horizontal g)	0.10	0.08	0.07	0.10	0.06
Design Basis Earthquake (horizontal g)	0.20	0.15	0.14	0.20	0.12
<u>WIND DESIGN</u>					
Maximum sustained (mph)	100	105	80	100	105
Tornadoes (mph)	300	300	300	300	300