

Table 3.8 Capacity outage probability tables

Units out	Capacity, MW Out Available	Individual probability
(a) 1 × 10 MW unit		
0	0 10	0.98
1	10 0	0.02
		<u>1.00</u>
(b) 2 × 10 MW units		
0	0 20	0.98 ² = 0.9604
1	10 10	2 × 0.98 × 0.02 = 0.0392
2	20 0	0.02 ² = 0.0004
		<u>1.0000</u>
(c) 3 × 5 MW units		
0	0 15	0.941192
1	5 10	0.057624
2	10 5	0.001176
3	15 0	0.000008
		<u>1.000000</u>
(d) 4 × 3½ MW units		
0	0 13½	0.92236816
1	3½ 10	0.07529536
2	6½ 6½	0.00230496
3	10 3½	0.00003136
4	13½ 0	0.00000016
		<u>1.00000000</u>

Table 3.9 Expected load losses

Capacity out MW	Probability	Load loss MW	Expected load loss MW
(a) 1 × 10 MW unit			
0	0.98	0	—
10	0.02	10	0.2
			<u>Expected loss = 0.2 MW</u>
(b) 2 × 10 MW units			
0	0.9604	0	—
10	0.0392	0	—
20	0.0004	10	0.004
			<u>0.004 MW</u>
(c) 3 × 5 MW units			
0	0.941192	0	—
5	0.057624	0	—
10	0.001176	5	0.00588
15	0.000008	10	0.00008
			<u>Expected Load Loss = 0.00596 MW</u>
(d) 4 × 3½ MW units			
0	0.92236816	0	—
3½	0.07529536	0	—
6½	0.00230496	3½	0.00768320
10	0.00003136	6½	0.00020907
13½	0.00000016	10	0.00000160
			<u>0.00789387 MW</u>

Table 3.11 Expected load curtailment duration

System	Probability of loss of load	Expected load curtailment, hr/yr
1 × 10 MW	0.02	175.2
2 × 10 MW	0.0004	3.504
3 × 5 MW	0.001184	10.37814
4 × 3½ MW	0.00233648	20.46756