

INDEX

- Adler, H. A., 4, 46, 62
- Area risk curves, 141
- Arnoff, E. L., 61
- Availability, 1, 11
 - capacity, 47, 56
- Average cycle time, 12, 47, 49, 52
- Average downtime, 12
- Average uptime, 12

- Baldwin, C. J., 62
- Benner, P. E., 2
- Biggerstaff, B. E., 153
- Bulk supply systems, 4, 101
- Bus configuration, ring, 35
- Bus failure frequency, 113
- Bus failure probability, 113

- Calabrese, G., 4
- Capacity, 47
 - adequacy, 104
 - availability, 47
 - outage, 47
 - reserve margin, 67
- Capacity Assistance Method, 158
- Capacity states
 - cumulative, 53, 55
 - derated, 131
 - exact, 53
 - identical, 55
 - merged, 56
- Chambers, J. C., 61
- Circuit breaker, 9
 - failure modes, 9
- Component (device) arrangement
 - parallel, 16
 - frequency of failure, 17, 18
 - repair (down) time, 17
 - unavailability, 17
 - uptime, 17
 - series, 12-15
 - availability, 13
 - frequency of failure, 13, 14
 - repair time, 14, 15
- Composite data requirements, 114
- Composite systems, 104

- Conditional probability, 109
- Cook, V. M., 5, 100
- Cumulative frequency curves, 65
- Cumulative states, 53
- Cycle, 11
 - average time of, 12, 47, 49, 52
 - failure-repair, 11

- Dale, K. M., 62
- Dean, S. M., 1
- Derated state, 131
 - forced, 139
- Duration
 - expected or average, 11
 - of capacity shortage, 81, 84
 - to failure, 11
 - to repair, 11

- Edison Electric Institute, 66
- Egly, D. T., 41
- Einhorn, S. J., 61
- Environmental effects, 24
- Eppler, E. P., 31
- Esser, W. F., 41

- Failure
 - bunching, 24
 - common mode, 10, 29, 30, 31
 - effect, 33
 - mean time to (MTTF), 61
 - mode, 9
 - modes and effects analysis, 32, 37
 - rate, 14
 - normal weather, 24
 - stormy weather, 24
 - system, 101
- Fault
 - revealed, 9
 - unrevealed, 9
- Feeder
 - overhead, 15, 20, 21
 - underground, 15
- Forced outage, 19, 24
- Forced Outage Rate, 84, 141
 - tie line, 164

- Fowler, P. H., 9
- Frequency
 - of cumulative capacity outage, 54
 - of cumulative margin state, 77, 97
 - event, 13
 - fault, 12
 - of merged state, 56
 - of state encounter, 54
- Generating capacity evaluation
 - annual risk indices, 69, 78
 - data requirements, 66
 - expansion analysis, 79
 - models
 - multiarea, 101
 - single area, 48, 101
 - two area, 102
 - planning studies, 46
- Generation
 - hydro forced outage rate, 19
 - peaking, 145
- Green, A. E., 9
- Halperin, H., 4, 46, 62
- Identical capacity states, 55
- Independence, statistical, 12
- Indices, performance
 - availability, 1, 11, 101
 - duration, 11, 101
 - frequency, 12, 13, 101
- Institute of Electrical and Electronics Engineers, Inc., 66
- Interconnected systems
 - limiting capacity, 105
 - operating capacity, 163
 - static capacity, 102
- Interruption analysis, 21
- Interval between outages, 3
- Jackson, T. M., 153
- Jacobs, I. M., 31
- Lead time, 128
- Load
 - daily peak, 67, 68
 - mean duration, 67, 68, 93
 - model, 67, 69
 - statistics, 90
- Load-forecast uncertainty, 130
- Loading, transformer, 27, 28
- Load models, 67
- Load statistics, 90
- Loss-of-load probability, 3, 47, 52, 81, 87, 96
- Lyman, W. J., 1
- Maintenance, 23
 - intervals, 69
- Mallard, S. A., 41
- Margin (reserve) states, 70, 73, 102
 - availability, 72
 - capacity reserve, 67
 - cumulative, 74
 - frequency of cumulative, 77
 - of interconnected systems, 103
- Markov chain, 67, 138
- Markov process, 48, 133
- Mean time-to-failure, 14, 61
- Mean time-to-repair, 61
- Models
 - generating capacity, 47
 - load, 67
 - repairable system, 10
 - two state, 12, 49
- Outage
 - event, 52
 - forced, 19, 24
 - generation, 47
- Outage Replacement Rate (O.R.R.), 127
- Overlapping outages, 20
- Overload effects, 27
- Parallel connected components, 16
- Patton, A. D., 41
- Peaking generating equipment, 141
- Primary feeder, 20
- Probability
 - conditional, 109
 - loss of load, 3, 47, 52, 81, 87, 96
 - of system failure, 147
 - transition, 135, 138
- Process
 - Markov, 48
 - renewal, 10
 - stochastic, 10

- Rate (transition)
 - down, 54
 - failure, 14, 49
 - repair, 49, 149
 - up, 54
- Reliability, 1
 - goal, 32, 36
 - incremental benefits, 104
 - prediction, 35
 - procedure for substations, 31
- Renewal process, 10
- Repair, mean time to (MTTR), 61
- Ring bus, 35

- Sauter, D. M., 62
- Security, 131
- Series-connected components, 12
- Smith, S. A., 1
- State-space diagram, 133
- State transition diagram, 51
- Substation
 - industrial, 41
 - reliability procedures, 31
 - ring bus, 35
- Szendy, C., 5

- Thomas, V. C., 41
- Transformer overload risk, 27
- Transition probability, 135, 138
- Transition rate, determination, 149
- Transmission, 101
 - interconnection, 102
 - planning, 124
 - tie capacity, 104

- Unavailability, 12, 49
 - of service, 8
- Uptime, 49