

Symbols and Abbreviations

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|----------------------------|----------------------------------------------------------|
| A | limiting availability |
| $A(t)$ | pointwise availability |
| CAS | current adjustment subsystem |
| CCF | common mode (cause) failure |
| Δt_w | repair time window |
| δ_{jk} | Kronecker's delta function |
| $D(t)$ | down time |
| DCL | dormant closed line |
| DCT | dual - coupled triode subsystem |
| DIV | divider |
| DOL | dormant opened line |
| $E[X]$ | mathematical expectation of the random variable X |
| FSP | fast scram pentode subsystem |
| FSS | fast scram subsystem |
| FST | fast scram triode subsystem |
| $F(t)$ | cumulative failure probability |
| $f(t)$ | cumulative failure probability density (or distribution) |
| $\phi(\mathbf{X}(t))$ | structure function of the random vector $\mathbf{X}(t)$ |
| $I_{\phi(j)}$ | structural importance of component j |
| $IMP_S(j)$ | reliability importance of component j |
| IMP_{FV} | Fussell - Vesely importance |
| IMP_{BB} | Birnbaum importance |
| IMP_{BP} | Balrow - Proschan importance |
| κ | coefficient of variation |
| $\lambda(t)$ | failure (or hazard) rate |
| $\lambda^*(t)$ | common - failure rate |
| $\lambda(j \rightarrow k)$ | transition rate, usually failure transition rate |
| $L_{(\mu, \sigma)}(x)$ | Log - normal distribution |
| $\mu(t)$ | repair rate |
| $\mu(j \rightarrow k)$ | repair transition rate |

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|-----------------------|-------------------------------------------------|
| M | transition matrix |
| <i>MRY</i> | master relay subsystem |
| <i>MTTF</i> | mean time to failure |
| <i>MTBF</i> | mean time between failures |
| <i>MTTR</i> | mean time to repair |
| <i>MTBR</i> | mean time between repairs |
| <i>MTTFF</i> | mean time to first failure |
| <i>MTTFR</i> | mean time to first repair |
| $N_{(\mu,\sigma)}(x)$ | Gaussian (normal) distribution |
| $\pi(S), \wp(S)$ | partition of the event S |
| $P(A), \Pr(A)$ | probability of the event A |
| $\Pr(A B)$ | probability of A given B |
| Q | limiting unavailability |
| $Q(t)$ | pointwise unavailability |
| $R(t)$ | reliability |
| <i>RY</i> [14] | relay unit |
| <i>SDA</i> | scram level definition and activation subsystem |
| <i>SRY</i> | slave relay subsystem |
| <i>SSS</i> | slow scram subsystem |
| <i>SST</i> | slow scram triode subsystem |
| τ | inspection time, or time parameter |
| $U(t)$ | pointwise unreliability, up time |
| <i>UIC</i> | uncompensated ionizing chamber unit |
| <i>V</i> [3] | pentode unit |
| $\varpi(t_1, t_2)$ | interval failure frequency |
| ϖ | failure frequency |