

Errata for *Risk and Safety Analysis of Nuclear Systems*

November 13, 2017

	<u>Incorrect</u>	<u>Correct</u>
1. Page 4, paragraph 3, line 2	the the	the
2. Page 8, last line	reactivity	radioactivity
3. Page 13, [NRC90]	(1989)	(1990)
4. Page 16, Table 2.1,		
7.a	$\overline{(XY)}$	\overline{XY}
7.b	\overline{XY}	\overline{XY}
8.b	$\overline{X(X + Y)} = \overline{XY}$	$\overline{X(X + Y)} = \overline{XY}$
5. Page 17, lines 3 & 4	consisting of system events that are not a subset of the events of any other cut set.	that has no other cut set as a subset.
6. Page 24, Example 2.4, line 2	tabl	Example 2.3
7. Page 35, Section 2.7, line 2	Eq. (2.28)	Eq. (2.27)
8. Page 39, Example 2.12, first equation	$H(t - t_3)$	$H(t - t_2)$
9. Page 43, Eq. (2.113)	$\sigma^2 = \alpha / \lambda$	$\sigma^2 = \alpha / \lambda^2$
10. Page 44, paragraph 2, last line	Eq. (2.119)	Eq. (2.118)
11. Page 48, Eq. (2.134)	$n = 1, 2, 3, \dots$	$n = 2, 3, 4, \dots$
12. Page 53, Exercise 2.2	$\overline{AB + A\overline{B} + \overline{A}B}$	$\overline{AB + A\overline{B} + \overline{A}B}$
13. Page 61, Table 3.1, last column, last row	$\hat{\beta}^2 \{ \Gamma(1 + 2 / \hat{\alpha}) - [\Gamma(1 + 1 / \hat{\alpha})]^2 \}$	$\hat{\beta}^2 \{ \Gamma(1 + 2 / \hat{\alpha}) - [\Gamma(1 + 1 / \hat{\alpha})]^2 \}$
14. Page 63, line 3	Eq. (3.8)	Eq. (3.9)
15. Page 65, Section 3.14, item 4	$\tilde{\theta}_m$	$\hat{\theta}_m$
16. Page 67, Example 3.6, last line	$P((TS CMS)$	$P(TS CMS)$
17. Page 69		

- | | | |
|-------------------------------|----------------------------|----------------------------|
| (i) Example 3.10, line 1 | $t_2 < \dots < t_N = \tau$ | $t_2 < \dots < t_N = \tau$ |
| (ii) Example 3.10 (a), line 1 | $X_i = t_i - t_{i-1}$ | $x_i = t_i - t_{i-1}$ |
18. Page 73, Figure 3.2, left-hand plot
- | | | |
|--------------------|---|---|
| (i) abscissa label | x | \bar{x} |
| (ii) equation | $\exp\left[-\frac{(\bar{x} - \mu)^2}{2\sigma^2 / N}\right]$ | $\exp\left[-\frac{(\bar{x} - \mu)^2}{2\sigma^2 / N}\right]$ |
19. Page 75, Example 3.13, part (c) case 2 case (b)
20. Page 76, (i) lines 2, 4, 6 case 2 case (b)
(ii) line 7 case 3 case (c)
21. Page 77, Section 3.4.3, line 1 Eq. (2.103) Eq. (2.105)
22. Page 78, Example 3.14 case 2 case (b)
23. Page 80, after [Man74], add reference [NAP05] from page 448
24. Page 80, Exercise 3.2, line 2 ball bearings rivet heads
25. Page 80, Reference [Man74] N. D Singpurwalla N. D. Singpurwalla
26. Page 81, Exercise 3.8, 3% 1%
line 3 1% 3%
27. Page 83, Exercise 3.16, part (b) When n When N
28. Page 86, Section 4.1.1, line 2 Fig. 4.1 Fig. 4.1(a)
29. Page 87, Figure 4.2 (a),
bottom curve, add legend Two in series $e^{-2\tau}$
30. Page 89, Eq. (4.13) $\sum_{n=M}^N \left(\frac{1}{n\lambda}\right) R^n (1-R)^{N-n}$ $\sum_{n=M}^N \left(\frac{1}{n\lambda}\right)$
31. Page 96, line 1 Eq. (2.103) Eq. (2.97)
32. Page 97, Eq. (4.27) sys sys
33. Page 100, Example 4.7 (a),
equation for R_{sys} $R_B(1-R_D)R_C R_E$ $R_B(1-R_D)R_C R_E$
34. Page 101,
(i) line 4 Fig. 4.9a Fig. 4.9(a)
(ii) line 3 after Eq. (4.41) Fig. 4.9b Fig. 4.9(b)

35. Page 101, last line and page 102, line 1	consisting of system events that are not a subset of the events of any other cut set.	that has no other cut set as a subset.
36. Page 104, Exercise 4.5, (i) line 1 (ii) line 3 (iii) line 3	systems elements units	components components components
37. Page 114, Eq. (5.21)	$\sum_{k=0}^N$	$\sum_{k=1}^N$
38. Page 115, Eq. (5.35)	$P_n(\infty) = \lim_{s \rightarrow \infty} sP_n(s) = b_{n1}$	$P_n(\infty) = \lim_{s \rightarrow 0^+} sP_n(s) = b_{n1}$
39. Page 120, Example 5.4 (c)	state 2 One component under repair	state 3 One component in repair, the other waiting for repair
40. Page 125, Figure 5.5, add for transfer from (i) S_2 to S_5 , (ii) S_2 to S_7		λ_2 λ_3
41. Page 164, line 4 of text	OR and	OR gate and
42. Page 235, (i) line 3, (ii) line 12 from bottom	Section 9.4 PRV	Section 9.5 RPV
43. Page 252, Ref. [Cat90]	N. Zuber [NRC]	N. Zuber,
44. Page 253, References [NRC88] [NRC89]	(1988) (1989)	(1988) (1989)
45. Page 254, Ref. [Tec89]	(1989)	(1989)
46. Page 255, Exercise 8.3, line 3	$\alpha \exp(-\lambda t)$	$\alpha \lambda \exp(-\lambda t)$
47. Page 257, (i) Exercise 8.14, line 5 (ii) Exercise 8.16, lines 11 and 12	mCi 0.2 mCi	μCi 0.1 μCi
48. Page 260, paragraph 1, line 15	illustrated	illustrates
49. Page 262, line 1 paragraph 2, line 2	small-break have	small-break had
50. Page 277, penultimate line	uranium oxide fuel rods	steam
51. Page 279, line 22	known as Jogan	during Japan's Jogan era
52. Page 285, Figure 9.12,	Total core flow rate	Core thermal power

ordinate label	(% of rated)	(% of rated)
53. Page 288, paragraph 1, line 1	rector	reactor
54. Page 297, [Bav02]	Aspects	Aspect
55. Page 322, line 1 below Eq. (10.12)	Eqs. (10.13)	Eqs. (10.12)
56. Page 326, line 3 after Eq. (10.14)	barium cerium	cerium barium
57. Page 342, Eq. (10.29), line 1	376	3.76
58. Page 371, paragraph 2, last line	NRC	NRC and was approved in 2014
59. Page 391, line 3 from bottom	mutiphase	multiphase
60. Page 424, line below Eq. (13.21)	$g(v,,c, t-\tau)$	$g(v,c, t-\tau)$
61. Page 437, paragraph 1, line 5	presume	pressure
62. Page 443, Section A.1, line 3	eight groups	seven groups
63. Page 443, last line	concern	inhalation concern
64. Page 444, Table A.1, Group E Storontium-90	<i>Aklaline</i> 52.3	<i>Alkaline</i> 52.1
65. Page 445, Table A.1, Group G (i) (ii) After line for Zirconium-97, insert a line Plutonium-241	Niobium-95 5390	Lanthanium-140 Niobium-95 161 35.0 5,350
66. Page 462, 2.5	$1 - \sum_{n=1}^4 [1 - P(E_n)]$	$\sum_{n=1}^4 P(E_n)$

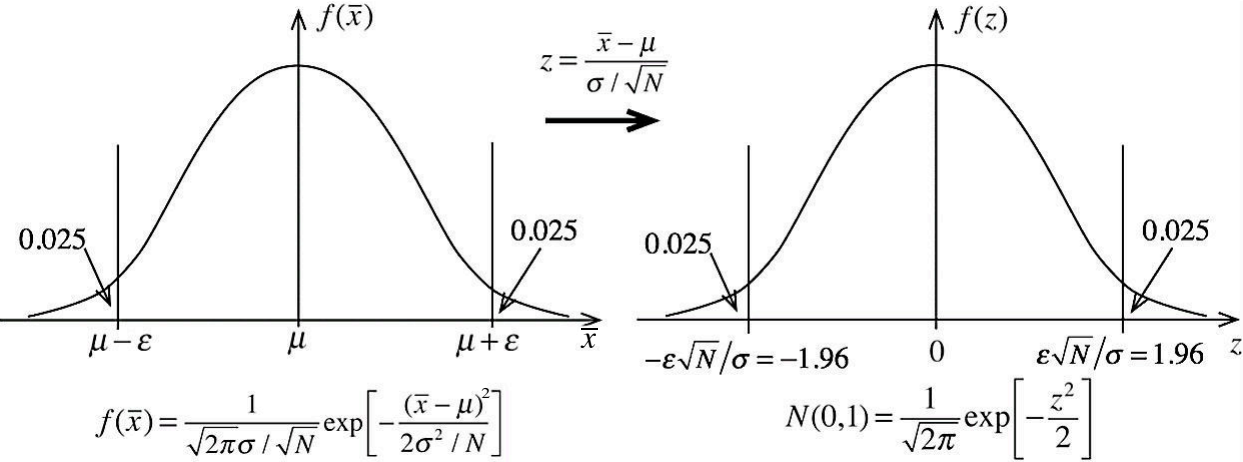
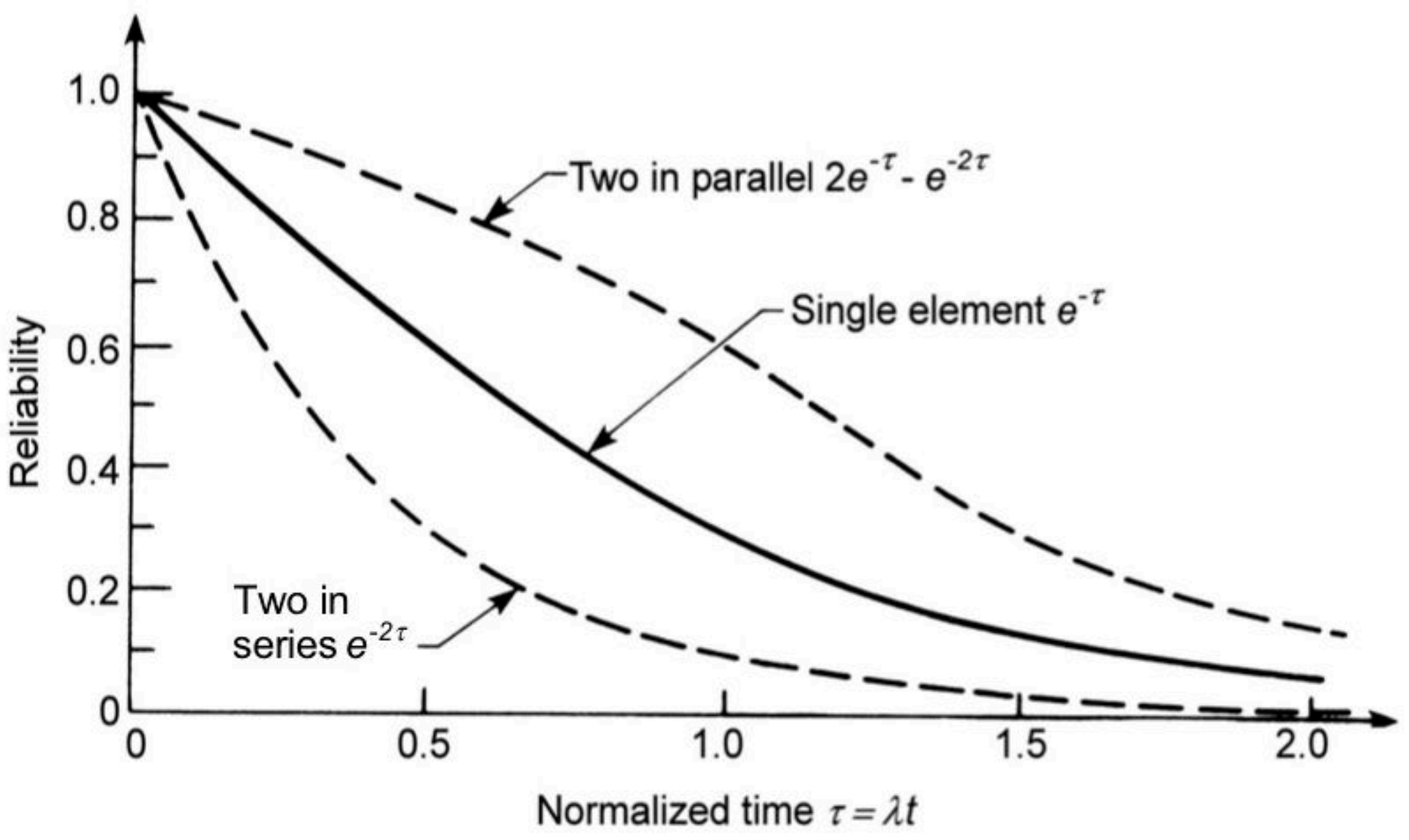
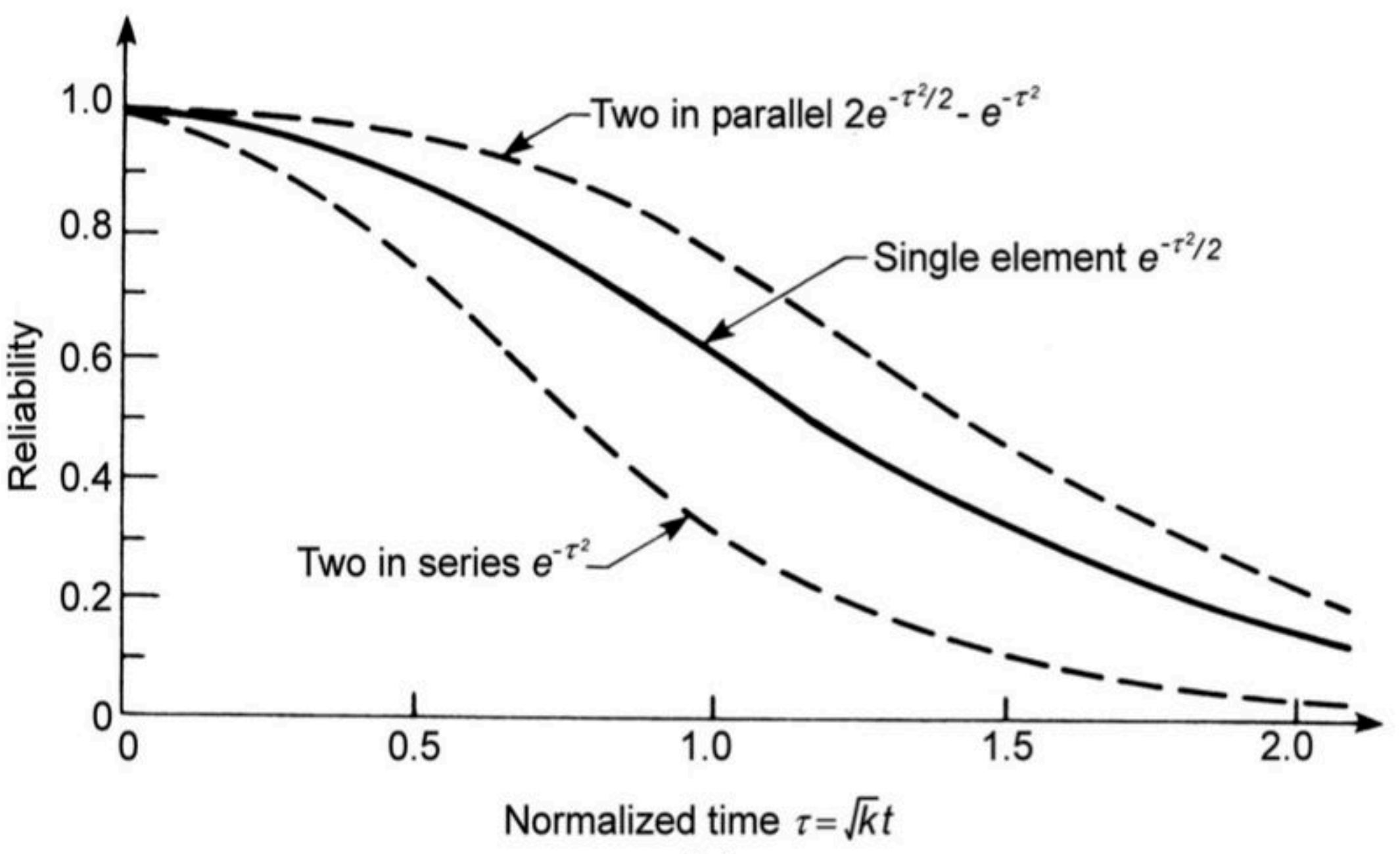


Figure 3.2 Probability density function transformation to normalized variable.



(a)



(b)

Figure 4.2 Comparison of system reliability functions.

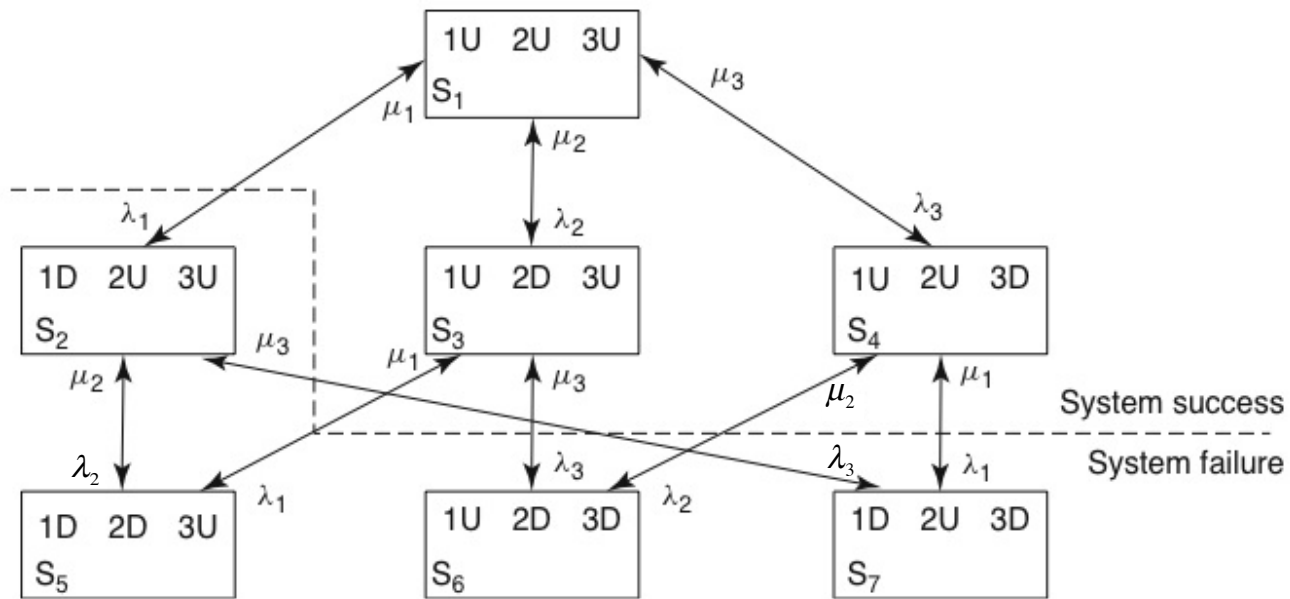


Figure 5.5 State transition diagram for Example 5.10.

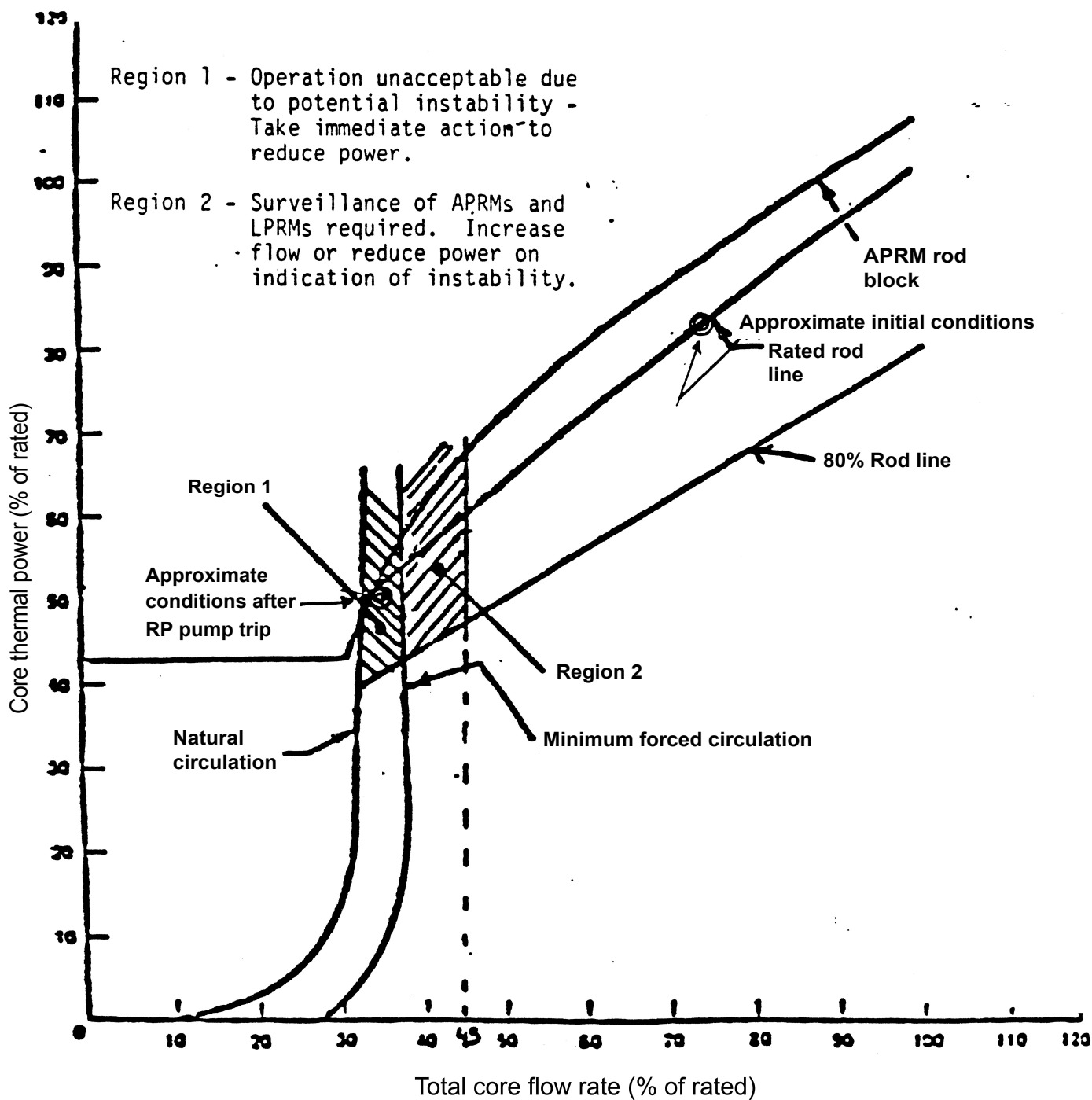


Figure 9.12 Power flow map for the LaSalle Unit 2.