Appendix 2. Rating Equations and Flood Alarm Levels

Data in this appendix may be used to convert discharge to water level and vice versa. For example, the annual maximum discharges with a given recurrence interval tabulated in Appendix 1 can be converted to a maximum annual water level with the same annual risk of occurrence. This figure can then be compared with the flood alarm levels reported in A2.2, for example:

A 2.1 *Current rating equations for the hydrometric stations on the Mekong mainstream*

Mainstream Site	Coefficient			Gauge Zero m.msl	Equations	
	a	b	c		Q →→ H	H →→ Q
Chiang Saen	0.838	1.892	132.7	357.1	H = (Q/c)**(1./b)-a	Q = c*(H+a)**b
Luang Prabang	1.38	2.16	29.83	267.2	≈	≈
Chiang Khan	6.805	3.545	0.347	194.1	≈	≈
Vientiane	5.99	2.72	7.14	158.0	≈	≈
Nong Khai	6.29	3.02	2.53	153.6	≈	≈
Nakhon Phanom	1.526	1.533	562.0	131.0	≈	≈
Thakhek	1.09	1.83	273.8	129.6	≈	≈
Savannakhet	2.97	1.91	217.66	125.4	≈	≈
Mukdahan	1.7 3	1.81	271.0	124.2	≈	≈
Khong Chiam	0.67	1.51	527.3	89.0	≈	≈
Pakse	1.60	1.70	454.7	86.5	≈	≈
Stung Treng*	-0.94	1.49	1839.0	36.8	≈	≈
Kratie**	Rising Stage			-1.08	H = (Q**(1./2.1)+10.16) / 8.16	Q = (8.16*H-10.16) ** 2.1
	Falling Stage				H = (Q**(1/2.5) – 1.26) / 3.3	Q = (3.3*H +1.26) ** 2.5

* Old rating
** Mekong at Kratie (WUP-JICA, 2004), Draft Final Report, Main Report Volume-I, p.II-36

A 2.2 *Flood alarm levels for the hydrometric stations on the Mekong mainstream*

Mainstream location	Flood Alarm Level		Flood Level	
	Water level (masl)	Discharge. (cumecs)	Water level (masl)	Discharge. (cumecs)
Chiang Saen	368.6	15 400	368.9	16 000
Luang Prabang	284.7	17 000	285.2	18 000
Chiang Khan	211.4	23 200	211.5	23 500
Vientiane	169.5	17 100	170.5	19 900
Nong Khai	165.0	14 800	165.8	16 900
Nakhon Phanom	145.3	38 500	145.4	38 800
Mukdahan	136.7	33 000	136.8	33 500
Khong Chiam	105.0	36 900	105.2	37 600
Pakse	97.5	34 700	98.5	38 500
Stung Treng	48.5	63 400	48.8	66 000
Kratie	20.9	47 300	21.9	52 400
Phnom Penh Port	9.5	-	11.0	-
Prek Kdam	9.6	-	10.1	-
Tan Chao	3.0	-	4.2	-
Chao Doc	2.5	-	3.5	-