CHAPTER – 12

POWER POTENTIAL STUDIES AND INSTALLED CAPACITY

12.1 GENERAL

Tankul SHP has been conceived as a run of the river scheme utilizing the inflows of Shyamkhola stream between elevations 2200.0 m (msl) near village Bungbung and 1525 m (msl) near proposed power station. The discharges in Tankul stream has been measured by UJVN Ltd. at gauge and discharge site which is at the proposed diversion weir site which has been reported and analyzed in the "Chapter 7 – Water Resources and Hydrology". These data have been taken to derive discharges to be used for Tankul SHP. Hence the discharge data so arrived have been considered for power potential studies and deciding an appropriate installed capacity for this project.

12.2 DISCHARGES

From the discharge data, average year has been prepared which have been reported in Table 7.4 in chapter of Hydrology, and is reproduced in Table 12.1. If whole inflows are used for power generation, there will be no flow of water in the river reach from diversion site to power house site and the river would be dry. Hence to meet the minimum discharge required for aquatic life, environmental release downstream of the diversion weir has been proposed at the minimum (Q_{90}) discharge observed in this stream, which is approximately 0.15 cumec. After deducting the aforesaid environmental release of 0.15 cumec from the observed discharge (Table 12.1), the discharge available for power generation has been obtained, which have been used for power potential studies reported herein after for the average year (Table 12.2).

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Table 12.2: Discharges adopted for power generation after deducting environmental flows

S. No.	Month	Ten Daily Block	No. of Days in a Block	Average Year	Deduct environmental flows	Water available for power generation
				cumec	cumec	cumec
1	2	3	4	5	6	7
1	Jan	1 10	10	1.03	0.15	0.88
		11 20	10	1.02	0.15	0.87
		21 31	11	0.96	0.15	0.81
2	Feb	1 10	10	0.96	0.15	0.81
		11 20	10	1.01	0.15	0.86
		21 28	8	1.07	0.15	0.92
3	Mar	1 10	10	1.09	0.15	0.94
		11 20	10	1.28	0.15	1.13
		21 31	11	1.21	0.15	1.06
4	Apr	1 10	10	1.16	0.15	1.01
		11 20	10	1.43	0.15	1.28
		21 30	10	1.48	0.15	1.33
5	May	1 10	10	1.89	0.15	1.74
		11 20	10	1.84	0.15	1.69
		21 31	11	2.01	0.15	1.86
6	Jun	1 10	10	1.89	0.15	1.74
		11 20	10	2.13	0.15	1.98
		21 30	10	2.52	0.15	2.37
7	Jul	1 10	10	> 2.65	0.00	> 2.65
		11 20	10	> 2.65	0.00	> 2.65
		21 31	11	> 2.65	0.00	> 2.65
8	Aug	1 10	10	> 2.65	0.00	> 2.65
		11 20	10	> 2.65	0.00	> 2.65
		21 31	11	> 2.65	0.00	> 2.65
9	Sept	1 10	10	> 2.65	0.00	> 2.65
		11 20	10	> 2.65	0.00	> 2.65
		21 30	10	2.64	0.15	2.49
10	Oct	1 10	10	2.13	0.15	1.98
		11 20	10	2.08	0.15	1.93
		21 31	11	1.94	0.15	1.79
11	Nov	1 10	10	1.57	0.15	1.42
		11 20	10	1.60	0.15	1.45
		21 30	10	1.33	0.15	1.18
12	Dec	1 10	10	1.28	0.15	1.13
		11 20	10	1.23	0.15	1.08
		21 31	11	1.17	0.15	1.02

12.3 ENERGY PRODUCTION

Energy production has been worked out for the average year with different installed capacities from 10 MW to 14 MW in steps of 1 MW. Net energy

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